KNOWLEDGE PACK

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

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GLOBAL SUMMIT-2020 Mission 5 Trillion

GLOBAL SUMMIT 2020

MISSION 5 TRILLION
CMA AS A CRYOGENIC FORCE

Behind every successful business decision, there is always a CMA

January 9-11, 2020
New Delhi

MISSION STATEMENT

"The CMA Professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."

VISION STATEMENT

"The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally."

Institute Motto

असतोमा सद्गमय	From ignorance, lead me to truth
तमसोमा ज्योतिर् गमय	From darkness, lead me to light
मृत्योर्मामृतं गमय	From death, lead me to immortality
ॐ शान्ति शान्ति शान्तिः	Peace, Peace, Peace

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Knowledge Pack

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FOREWORD

CMA Balwinder Singh
President
The Institute of Cost Accountants of India

May this year 2020 bring new happiness, new goals, new achievements and a lot of new inspirations on your life. Wishing you all a year fully loaded with happiness.

It gives me an immense pleasure to convey that ***Global Summit 2020*** from 9th -11th January 2020 at Ashok Hotel, New Delhi being organized by our Institute on the theme ***"Mission 5 Trillion – CMA as a Cryogenic Force"*** which is highly align with the goal set by Hon'ble Prime Minister of India to achieve USD 5 Trillion Economy by 2024. A ***Knowledge Pack*** is also getting released to mark this occasion.

To achieve the target, USD 5 Trillion Goal by 2024 requires a huge burst of energy to propel various engines of the economy. Viewed in the context of space technology, a cryogenic material despite being cold in property produces the burst of energy and acts as a Cryogenic Force in the journey towards a tall order. Referring to this as an allegory, Cost and Management Accountants (CMAs) can become the source of Cryogenic energy for the economic growth. This is fundamentally due to the professional competencies of CMA which is oriented towards decision making to drive the future with economic evaluation skills.

I am confident that the Technical sessions would come-up with important recommendations offered by CMA fraternity in support of Government initiatives and socio-economic sustainability of the nation and how CMAs can act as a cryogenic force to give a massive push for the betterment of the economy.
I extend my warm greetings to the participants and wish the Summit a grand success.

CMA Balwinder Singh

MESSAGE

CMA Biswarup Basu
Vice President
The Institute of Cost Accountants of India

I am immensely happy to note that the Institute is organizing a ***Global Summit*** on the theme ***"Mission 5 Trillion – CMA as a Cryogenic Force"*** on 9th -11th January 2020 at New Delhi.

Ground realities, strategies, opportunities and mapping of CMA competencies to achieve the dream of $5 trillion economy formed the agenda for discussion during the three days Global Summit**.** The Summit will be addressed by eminent speakers holding high positions in the Government, Industry and Profession. Many professional Gurus from USA, UK, Australia, China, Germany, Japan, South Africa, South Korea and Singapore have consented to share their knowledge and experience at the Summit.

I am sure, the deliberations from eminent speakers should be intellectually stimulating and professionally enriching.

I am immensely happy to proclaim the release of the ***Knowledge Pack*** during the Summit. Commendable efforts have been made to make the publication useful for the industry people and CMA professionals like us.

I extend my sincere appreciation for the eminent contributors for their sincere effort to publish this volume in time.

Concluding with the best wishes of New Year. May all stay in good health and achieve greater heights of success!!!

CMA Biswarup Basu

FROM THE DESK OF THE CHAIRMAN, TECHNICAL COMMITTEE

CMA Ashwin G Dalwadi
Chairman, Technical Committee
Global Summit 2020

Greetings and best wishes of New Year 2020!!!

I am in high spirits to announce that the Institute is organizing three days ***Global Summit*** on the theme **"*Mission 5 Trillion – CMA as a Cryogenic Force*"** scheduled for 9-11th January 2020 in The Hotel Ashok, New Delhi.

To achieve the vision of a USD 5 trillion economy we should focus on creating a virtuous cycle encompassing private investment, jobs, exports and demand. The roadmap to achieve economic size of US$5 trillion should focus on 8% economic growth with a whopping growth in the manufacturing sector and tremendous increase in the size of exports. I am of firm opinion that the domestic savings must be mobilized, and investment rates must be raised to boost the investment, and foreign capital inflow India, apart from various other segments of economy.

The digital consumer base of India is the second-largest in the world and is growing at the second-fastest rate amongst the major economies. Our inclusive digital model is narrowing the digital divide within the country and bringing benefits of technology to all segments of the people. Half the potential economic value of $1 trillion in 2024 could come alone from the new digital ecosystem in diverse sectors, including financial services, agriculture, healthcare, skills, e-governance and other sectors. Thus, it all depends on the policy framework of the Government to achieve goal of $5 trillion economy by 2024.

Our Institute and its members have been wholeheartedly supporting the Government initiative in implementing these national goal. Role of Cost and Management Accountants is very significant to implement the initiatives of the Government. In pursuit of excellence, the CMA professionals would accepted the responsibility to act in public interest.

I convey my best wishes for successful conduct of the Global Summit and timely publication of Knowledge Pack on this occasion.

CMA Ashwin G Dalwadi

FROM THE DESK OF THE CHAIRMAN, ORGANISING COMMITTEE

CMA Vijender Sharma
Chairman, Organising Committee
Global Summit 2020

Greetings and best wishes of New Year 2020!!!

On behalf of the Council of the Institute, I have the pleasure to welcome you all at the ***Global Summit 2020*** from 9th -11th January 2020 at Ashok Hotel, New Delhi, being organized by our Institute on the theme ***"Mission 5 Trillion – CMA as a Cryogenic Force"***. We are pleased to announce the launch of ***Knowledge Pack*** in the aforesaid event.

The three-day conference aims to be a key international forum for the exchange and dissemination of technical information on the ground realities, strategies, opportunities and mapping of CMA competencies to achieve the dream of US $5 trillion economy. We are privileged to have addresses from the eminent personalities holding high positions in their respective domains.

The digital age has transformed the way customers shop and share their experiences. Today, customers are driving the buying process using websites, blogs and e-commerce platforms. By the time they enter a store or become visible in the sales funnel, they know what they want to buy and how much they want to pay. The change in customer behaviour driven by technological developments is the biggest trend that marketers believe will offer the biggest opportunities and challenges in digital marketing. New channels and technologies open up fresh opportunities that can make a company stand out from the rest of the crowd. Invent and wide use of digital platform will in turn lead to huge boost in economic growth and prosperity of the country.

The Global Summit features technical sessions that cover topics emphasizing on the goal set by Hon'ble Prime Minister of India to achieve ***Mission USD 5 Trillion Economy*** by 2024. The Sessions will talk about new levers of economic growth such as Disruptive Technologies, Digital Banking and Startup India Ventures; Driving Sustainability Goals (SDG) through CMAs; Switching Governance Mechanisms in the Board Rooms from a Compliance oriented to a Value Creating approach; Adapting Sustainable Development Goals in Medium, Small and Micro Enterprises; Reorienting the Management Systems towards Sustainable Strategies; and Implementing Sustainable Strategies in the Public Sector; Cost Management Strategies; Global Cost Management Practices; Agriculture to achieve doubling of farm Income and Profits; Infrastructure with the focus on Housing for All at affordable prices; and Effectively deploy Make in India in the Defence Sector with suitable Costing Tools.

I wish this prestigious event of the Institute a grand success!!!

CMA Vijender Sharma

FROM THE DESK OF THE CHAIRMAN, KNOWLEDGE PACK COMMITTEE

CMA (Dr.) K Ch A V S N Murthy
Chairman, Knowledge Pack Committee
Global Summit 2020

It gives me immense pleasure to note that the ***Knowledge Pack*** is getting released in the mega event – the ***Global Summit 2020*** being organized by our Institute on the theme ***"Mission 5 Trillion – CMA as a Cryogenic Force"*** on 9-11 January 2020 that aligns with the goal set by Hon'ble Prime Minister of India to achieve USD 5 Trillion Economy by 2024.

In this Global Summit, we have tried to emphasize on varied aspects concerning achievement of Mission USD 5 Trillion and how the Cost & Management Accountants can act as a cryogenic force to generate adequate force that is required to give a big push to the economy. The domain experts will be sharing their views and experiences with the participants.

I am sure the deliberations from eminent speakers would be intellectually stimulating and professionally enriching.

I wish to express my sincere gratitude and appreciation to CMA Dr. A S Durga Prasad, Past President of the Institute and CMA N Srinivasan for helping us in selecting the relevant articles for the knowledge pack. My equal thank goes to CMA M. Gopalakrishnan, Past President of the Institute, CMA A.N. Raman, Past President SAFA, CMA B.B. Goyal, for their valuable contribution, inputs and ideas to make this Knowledge Pack comprehensive, productive and stimulating. Further, take this opportunity to express my sincere gratitude to CMA Dr. D.P. Nandy, Sr. Director and staff members of the Journal & Publications department of the Institute for their earnest and untiring effort to publish this Knowledge Pack in time.

My best wishes for successful conduct of the event and timely publication of Knowledge Pack to commemorate the auspicious occasion.

CMA (Dr.) K Ch A V S N Murthy

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GLOBAL SUMMIT 2020

MISSION 5 TRILLION
CMA AS A CRYOGENIC FORCE

USD 5 Trillion Goal for 2024 set by Honourable Prime Minister of India requires a huge burst of energy to propel various engines of the economy. The goal of USD 5 Trillion can be achieved through a clear strategic thinking by the Captains in the Government, Business and Management Leadership.

The companies and business entities need to reorient their processes for executing the strategies of the new economy sustainably. This requires the corporate and non-corporate entities to align themselves with the new visions such as Switching Governance Mechanisms in the Board Rooms from a Compliance oriented to a Value Creating approach; Adapting Sustainable Development Goals in Medium, Small and Micro Enterprises; Reorienting the Management Systems towards Sustainable Strategies; and Implementing Sustainable Strategies both in the Private and Public Sector.

The immediate takeaway for the members and Government is going to be with the implementation of strategies towards the super goal which cannot be with the business as usual approach. Therefore, there is a need for the new levers which can geometrically escalate the strategic outcomes to reach the last mile in the Indian demography.

TECHNICAL SESSION-I

MISSION 5 TRILLION – LEVERS

Overview

The implementation of strategies towards the goal of achieving Mission 5 Trillion need disruptive levers so as to enable realization of desired outcomes focused on spreading benefits of the development to the poorest in the country. This calls for a change in mindset and an ability to take calculated risks in adopting new wave of business levers and tools.

Disruptive technology refers to any enhanced or completely new technology that replaces and disrupts an existing technology, rendering it obsolete. It is designed to succeed technology that is already in use. Disruptive technology applies to hardware, software, networks and combined technologies. As an unused, unapplied and untested alternative, it takes time for disruptive technology to be dominantly deployed, ultimately degenerating existing technology.

Disruptive technologies such as AI, robotics, IoT and blockchain have the potential of transforming economic structures, business models, companies and jobs. Organizations need to consider preparing for these disruptive technologies and massive changes in ways that are different from previous approaches to handling emerging technologies.

Digital banking is part of the broader context for the move to online banking, where banking services are delivered over the internet. Digital banking involves high levels of process automation and web-based services and may include APIs enabling cross-institutional service composition to deliver banking products and provide transactions. It provides the ability for users to access financial data through desktop, mobile and ATM services. Banks can support the digital adaptation of the business model in a number of ways, including consideration and strategic focus on key cost levers: improving the channel mix to reduce distribution costs, reducing administration and operating costs through automation, and optimizing IT spending through use of the cloud and agile development

Startups are becoming very popular in India. The government under the leadership of PM Narendra Modi is promoting Startup India in a big way as it is considered that start-ups can promote growth and help Indian economy achieve progressively higher levels of economic development. Government is extending many benefits to entrepreneurs establishing startups. Government of India has launched a mobile app and a website for easy registration for startups. Anyone interested in setting up a startup can fill up a simple form on the website and upload certain documents. The entire process is completely online. A 10,000 crore rupees fund is set-up by government to provide funds to the startups as venture capital.

The government is also giving guarantee to the lenders to encourage banks and other financial institutions for providing venture capital. Startups are eligible forTax holiday for 3 Years provided they get a certification from Inter-Ministerial Board (IMB). Startups can apply for government tenders. They are exempted from the “prior experience/turnover” criteria applicable for normal companies answering to government tenders. Various compliances have been simplified for startups to save time and money. Startups shall be allowed to self-certify compliance (through the Startup mobile app). In case of exit – A startup can close its business within 90 days from the date of application of winding up. Government has proposed to hold 2 startup fests annually both nationally and internationally to enable the various stakeholders of a startup to meet. This will provide huge networking opportunities.

The Cost and Management Accountants have a key role implementation of strategies for achieving 5 Trillion Dollar economy through participation in management decision making, devising planning and performance management systems, and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy.

Topics:

- ✓ Disruptive Technologies/Artificial Intelligence
- ✓ Digital Banking
- ✓ Start-up India

AUTONOMOUS-DRIVING DISRUPTION: TECHNOLOGY, USE CASES AND OPPORTUNITIES

Executives in the automotive industry can keep pace with advances in autonomous driving by closely tracking developments.

As autonomous-driving technology advances, new transportation use cases will emerge, largely driven by factors such as what is transported, type of vehicle ownership, and where the vehicle operates. Use cases drive business models, value chains, and strategic decisions. Asutosh Padhi, a senior partner in McKinsey's Chicago office, and Philipp Kampshoff, a partner in the Houston office, share the McKinsey Center for Future Mobility's perspective on how the most prominent autonomous-driving use cases are developing to help executives navigate and stay ahead of upcoming changes.

When will autonomous-driving technology be market ready?

Asutosh Padhi: Our expectation is that true Level 5 autonomy is about ten-plus years away. But we are likely to see geofenced applications of autonomous vehicles (AVs) in the next three to five years. The progress on the hardware has actually been very significant. The cost of LIDARs [light detection and ranging sensors], for example, has dropped by a factor of ten over the last five years. Similarly, the amount of computational capacity that the GPUs [graphic processing units] can provide has gone up dramatically.

There are still two challenges that remain. The first one is object detection and categorization, which is the ability of a car, for example, to recognize a pedestrian: this is what it looks like if a pedestrian is pushing a stroller, if the pedestrian is carrying an umbrella, if the pedestrian is carrying a plant, when a pedestrian doesn't look like a pedestrian, etc. And the second challenge is decision making. When there is human driving, there are a lot of subtle signals that drivers send to each other—right of way, etc.—and often if you're an autonomous car, you can't pick those up. So I think a combination of those two, and in particular the edge-cases question; there's going to be high time required to be able to teach the car how to recognize and deal with the edge cases.

Philipp Kampshoff: That's really the reason why we don't see autonomous vehicles already being readily available as robo-taxis driving around. The decision making is done by the neural net in the car, at least for the large part. And you can train the neural net relatively quickly to accurately assess 95 percent of the situations. But it takes a lot more training and a lot more miles that you have to drive in order to train the neural net up to 99 percent correctness.

Edge cases is where the problem is. If you take a regular human driver, on average it's roughly every 165,000 miles he has an accident. That means, in 99 percent of the cases, the human person is right when they drive themselves. However, for an autonomous car, regulators will require the autonomous car to be much safer than current human behavior. So it will come down to handling these edge cases—for example, the four-way traffic sign where these days hardly anybody really comes to a full stop. So do you have the autonomous vehicle be the only one that's behaving correctly and sits there forever waiting for everybody else to stop all the way? Another example is a construction site where you have a red traffic light, and the autonomous vehicle is approaching the red traffic light, but there is a construction worker who waves the people and cars through. How does the autonomous vehicle know that it can ignore the red traffic light? So these are the kinds of edge cases that have to be overcome for autonomous vehicles to really be out there in mass adoption.

Why is testing and validation a concern for autonomous-driving-technology readiness?

Asutosh Padhi: Our view is that there's going to be a completely new paradigm that has to emerge for testing and validation in the world of autonomous vehicles. In this new world, it is less about driving

millions of miles. If you drive millions of good miles, there is, in effect, no new learning that happens. It really is about looking at the millions of edge cases that you'd expect that do not usually happen on a more traditional and a more frequent basis. And it's about teaching the car and the algorithms to recognize object detection as well as decision making in those edge cases. And what it essentially implies is that you can't do this through physical validation and testing, because you can't have a car drive a million miles. You have to borrow techniques that are used around software-based simulation from other industries like gaming as a way to be able to complete the necessary level of validation.

Philipp Kampshoff: The interesting question is, "What is the driving test for autonomous vehicles going to look like before you let them on the road and work as robo-taxis or private AVs?" And for sure it's going to be some sort of virtual testing, where you throw situations at the car and see how it would react in different situations. As a regulator, you want to keep on changing that so you cannot program the autonomous-vehicle software so it recognizes the pattern. And then you'll also need some sort of a physical driving test that these vehicles have to undergo before they're going to be allowed on the road.

One important thing that people often forget is it's not only about the first time that they're allowed on the road, but then how do you make sure they are properly maintained? It's like in the airline industries, where before the airplane can actually take off, it has to go through certain security checks and safety checks to make sure all the parts are in place and everything is running smoothly. It's going to be somewhat similar for autonomous vehicles, where you really have to make sure, at any point in time, your sensors and other components that you need for the car to function properly are working before you let the car out on the street.

What is your view on vehicle-to-infrastructure (V2I) technology: Necessity, or nice-to-have?

Philipp Kampshoff: The answer is not as straightforward as yes or no. It really depends on which situations, and it also depends on which manufacturer you're talking to. Some of the manufacturers will say, "We are trying to build cars that are self-sufficient. We don't want to rely on anything else. We want our cars to be able to behave correctly in any given situation, without having to rely on the right infrastructure around it."

There are some use cases that would make it a lot easier for the technology and for autonomous vehicles to be out there if V2I were available. One of the examples is the car approaching a construction site. There's a red traffic light, and the construction worker waves you through. How does the car know that this is actually a person of authority? You could give the person, the construction worker or a policeman, a chip that basically signals very clearly, "I'm a person of authority, and I have the right to override the red traffic light." So in these types of situations, V2I would make things a lot easier for the autonomous car. So coming back to your question, it's not a clear-cut answer. Manufacturers will try to make the cars as self-sufficient as possible.

But we believe there is going to be some sort of V2I, especially in the beginning, as technology is probably, in some of instances, not quite ready. It might also depend on the geography. There might be cities, that are just being built right now where it's a lot easier to put in this infrastructure, since sometimes, in more traditional cities, it's harder. And the cars will have to rely more on their own rather than on new infrastructure.

Another example for V2I or application of autonomous vehicles in combination with infrastructure adjustments would be, for example, a scenario where you say, "Hey, let's use what we currently have as high-occupancy-vehicle (HOV) lanes, and we make them autonomous-vehicle lanes." Basically, you have a car that has the potential of driving autonomously, and before you enter that lane, you have to activate your autonomous mode. And while you're driving in the HOV lane or, in that case, the AV lane, the car is going to drive autonomously. Obviously, you need the infrastructure that checks with the car, "Is the car really on AV mode?" If you assume that these AV cars are not crashing as often because they communicate with each other and react quicker than a human would react, you can actually allow them to go faster than regular cars. So, you might have AV lanes where cars, instead of just going 60 or 70 miles an hour, go 120 to 150 miles an hour toward downtown, based on this combination between AVs and infrastructure.

What type of autonomous-driving use cases do you expect to see in the future?

Asutosh Padhi: The Society of Automotive Engineers' Level 1 to Level 5 taxonomy is very helpful to describe the technological evolution of autonomous vehicles. However, as you think about commercial applications and policy making, a use-case-based approach is more helpful. We are going to see a

spectrum of use cases that emerge from autonomous vehicles. The first element of the use-case-based approach is, “Where will the autonomous vehicles operate?” Requirements for hardware and software are very different for driving in urban environments versus highway-type environments. The second element is, “Who owns these vehicles?” Is it going to be individuals, or are they going to be owned by private fleets? This is important, since the operating models and the economics are going to be very different. The final element is, “What is being transported?” Is it individuals, or is it different types of goods? Depending upon the choice to all of these, we’re going to see a whole different set of applications and use cases that will happen over the next few years.

Philipp Kampshoff: Let me tie all these elements together to give you a couple of examples of these use cases. If we talk about transport of people in an urban environment [with AVs] owned by a professional company instead of a private person, then we are talking about the use case of robo-taxis.

One question that we are always being asked is, “Is there going to be an Airbnb model of autonomous cars in the future, where people own autonomous vehicles, the autonomous vehicle takes them to work, and then they put it into the mobility-as-a-service system to work for them?” The math suggests that it is difficult for this vehicle to compete with a professional-fleet provider. The reason is that the professional-fleet provider, just because of economies of scale and purchasing power of not buying just one car but many, will get a different purchase price. They will be much more professional in terms of servicing and maintaining the fleet. And likely, the utilization of the car is going to be higher, too. So they will be able to operate at a different cost point in comparison to a private person who owns an AV and brings that into the system to work as a robo-taxi. Most likely we do not see the Airbnb model for robo-taxis, but professional-fleet providers providing that.

Other examples of use cases would be highway application for long distances for goods transport. We talk about “platooning,” at least as a bridging technology, where you have two trucks, and the second one platoons behind the first one. You don’t need a driver in the second one anymore. It just brakes and accelerates in line with the one that’s in front of it. You will have two trucks in the beginning; potentially, it will increase to a train of different trucks. Eventually, you will be able to take the driver out of each one of these trucks. When we look at the numbers, initially platooning is going to help with the total cost of ownership for a fleet provider, driving down 10 percent of the cost. Later on, when you take out all the drivers and you have this concept of platooning trains, you can go as high as 40 percent reduction on total cost of ownership.

How will robo-taxis disrupt existing mobility models?

Philipp Kampshoff: Robo-taxis have huge potential to disrupt the industry as we know it and to encourage people to go away from private ownership to using robo-taxis 100 percent of the time. We’re going to see that most likely in urban environments than in rural areas. In comparison to private ownership today, if you live in an urban environment, robo-taxis can be 30 to 50 percent cheaper for you, using robo-taxis at all points in time rather than owning a car. And that is if you factor in all the different costs around insurance, parking, and so forth. When is that going to happen? We think the true disruption is going to happen as soon as these robo-taxis are able to operate in not only an urban environment but also in suburbia or on highways.

Highways right now are a little bit of a challenging environment, mainly since you’re traveling at much higher speeds. In an urban environment, if the car doesn’t know what to do, it can, in theory, park at the side and wait and figure out what it needs to do next. But on a highway, when you go 60 miles an hour, for example, that’s not possible. In terms of object detection, the car needs to be able to recognize exactly what is in front of the car. Imagine something falls off the truck in front of you; the car needs to be able to say, “Is that a paper bag, or is that a rock?” And based on whatever it detects, it needs to make the right decision of either going around the object or just driving through it.

What does it take to be a leader in the robo-taxi market?

Philipp Kampshoff: The robo-taxi market is going to be a very interesting and attractive market. We see that already today with the movement toward shared mobility, where this is only going to pick up as we move toward robo-taxis. The market today is already 50 billion, and it will be a lot bigger once we move to robo-taxis. So the market is going to be competitive, and it’s not that simple, at this point in time, to say who is going to be the winner going forward.

If you come from the customer angle, there is a good question around why you choose one provider over another. One of the key reasons you would choose

one provider over another is availability of cars. Once you call a shared-mobility provider, how long does it take for the robo-taxi to actually show up at your house? So the shorter that time is, the more attractive the provider is for the customer. And in order to address that, scale is going to be important. If you have a large fleet and you can provide good coverage of the network, then obviously that is going to be helpful. The other angle is the price. If two cars are at my house at the same point in time, and the cars are basically the same, then I would probably go for the one that is cheaper.

Now if we look at the operations side of things, cooperations are going to be very important— so having the right technology in terms of autonomous vehicles, having access to different car options. Maybe you don't want to have the same car, the same layout, of every robo-taxi. But robo-taxis are maybe more purpose-built for certain applications. So you want to have more flexibility there. All of a sudden you're in the business of managing a fleet of thousands of cars, maybe similar to rental cars today, where you actually have to maintain and service a huge fleet of cars at any given point in time. So being lean in your operations, making sure you service your cars in the most effective way, is going to be very critical for these companies.

Will advanced driver-assistance systems still be relevant?

Asutosh Padhi: ADAS stands for advanced driver-assistance systems. Our view is that ADAS is going to be very important on the path toward full autonomy. That's because there are a number of different features that are already in place, and you largely see these in more premium products that we believe can actually pay for the path toward full autonomy. ADAS teaches consumers how to be able to use these different features, and this makes it affordable for the OEMs and suppliers to invest in these technologies.

The current revenue generation from ADAS is pretty limited, but, going forward, our view is that the revenue potential is actually going to go up dramatically. How does that happen? It happens by expanding the usage of these features from premium products to more mass vehicles. It happens by automotive companies making it easier to partner with third parties, like insurance companies around variable insurance for car drivers. It comes through working with other regulatory agencies and informing customers of the benefits of these different features. And frankly, it will happen by expanding usage of these features in emerging markets, particularly markets like China. I think there's a very high degree of appetite for ADAS-like features and a high customer willingness to pay for them.

Author(s):
Philipp Kampshoff
Partner
McKinsey's Houston office and coleads the McKinsey Center for Future Mobility.

Asutosh Padhi
Senior partner
Chicago office and cofounder of the McKinsey Center for Future Mobility.

Source:
https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/autonomous-driving-disruption-technology-use-cases-and-opportunities

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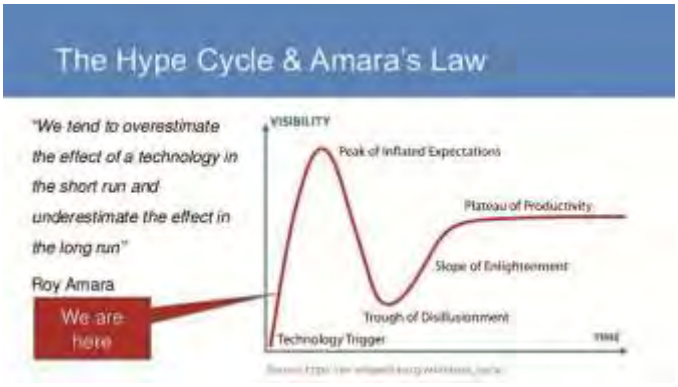


Roy Amara was a futurist and the co-founder and President of the Institute For The Future in Palo Alto, home of Stanford University, countless venture capitalists, and the intellectual heart of Silicon Valley. He is best known for his adage, now referred to as Amara's law:

THE ESSENTIAL EIGHT

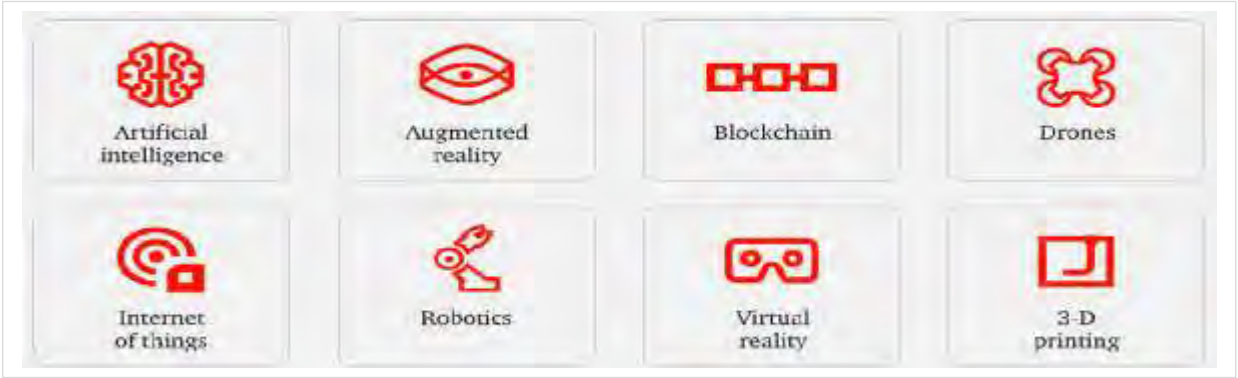
YOUR GUIDE TO THE EMERGING TECHNOLOGIES REVOLUTIONIZING BUSINESS NOW

The new tech future is here

Technology is evolving at breakneck speed and is already defining what's next — for your company, competitors, and industry. Business leaders understand this: 76% of CEOs in our **annual survey** are worried about the speed of tech change. And 64% acknowledge that changes in the technology used to run their businesses will be disruptive over the next five years. Emerging technology should be a key part of every company's corporate strategy. So why are so many hesitant to take action?

To help companies focus their emerging tech efforts, we analysed the business impact and commercial viability of more than 250 emerging technologies to zero in on the "Essential Eight." These are the core technologies that matter most for business, across every industry, over the next three to five years. The Essential Eight are the technology building blocks that we believe every organization must consider. While each company's strategy for how to best exploit — and combine — them will vary, these technologies will have a profound global impact on business, employees, and customers.

The Essential Eight technologies that matter most for business today



Explore the Essential Eight

Artificial intelligence

Software algorithms are automating complex decision-making tasks to mimic human thought processes and senses. Artificial intelligence (AI) is not a monolithic technology. A subset of AI, machine learning, focuses on the development of computer programs that can teach themselves to learn, understand, reason, plan, and act when blasted with data. Machine learning carries enormous potential for the creation of meaningful products and services — for example, hospitals using a library of scanned images to quickly and accurately detect and diagnose cancer; insurance companies

digitally and automatically recognizing and assessing car damage; or security companies trading clunky typed passwords for voice recognition.

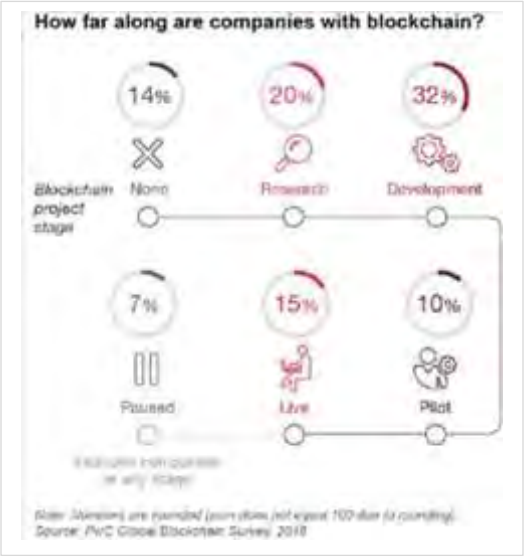
Learn more about AI insights that are shaping business strategy.

Augmented reality

Augmented reality (AR) is a visual or audio "overlay" on the physical world that uses contextualized digital information to augment the user's real-world view. AR-enabled smart glasses help warehouse workers fulfill orders with precision, airline manufacturers assemble planes, and electrical workers make repairs. We're currently seeing mainstream gaming examples of AR that span age demographics. The power of bringing information to the point of action in a seamless, unobtrusive manner is undeniable. This blending of the physical and virtual worlds is cracking open a new realm for businesses across the board to explore.

Learn how company leaders are using AR technologies to enhance different industries and the current state of the technology.

Blockchain



A blockchain is a distributed digital database or, more broadly, a digital ledger that uses software algorithms to record and confirm transactions with reliability and anonymity. The record of events is shared between many parties and information once entered cannot be altered. Blockchain has the potential to usher in an era of autonomous digital commerce.

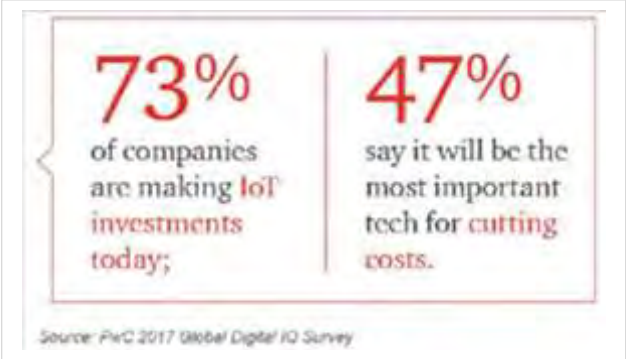
Learn more about the state of blockchain today.

Drones

Depending on their design, drones vary greatly in their capacity. Some drones need wide spaces to take off, while quadcopters can squeeze into a column of space. Some drones are water based; others can operate and navigate autonomously (via remote control) or fully autonomously (via onboard computers). Companies are using drones for wide-ranging reasons, including surveillance, survey, sport, cinematography, and delivery.

Learn more with this comprehensive view of the state of drone technology and relevant news and trends.

Internet of things



The Internet of things (IoT) is a network of physical objects — devices, vehicles, appliances — embedded with sensors, software, network connectivity, and computing capability enabling them to collect, exchange, and act on data, usually without human intervention. The industrial IoT (IIoT) refers to its use in the manufacturing and industrial sectors, aka Industry 4.0. IIoT augments people, places, processes, and products with sensors to capture and analyze information across a value chain, advancing the goals of the organization.
Learn more about the developments that are helping to shape the IoT's evolution, and explore relevant news and trends.

Robotics

Robots are machines with enhanced sensing, control, and intelligence used to automate, augment, or assist human activities. The robot market, which has grown for industrial applications, is poised for growth in a broad range of services applications. These applications are transforming manufacturing and non-manufacturing operations with new capabilities that address the challenges of working in changing, uncertain, and uncontrolled environments, such as alongside humans without being a danger to them.

Learn more with this comprehensive view of the state of robotics technology and relevant news and trends.

Virtual reality

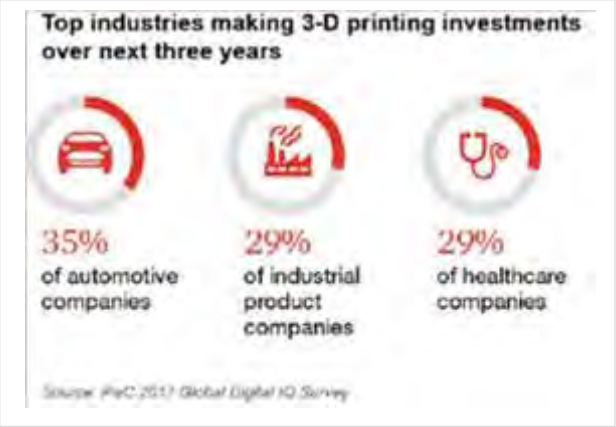
Virtual reality (VR) abolishes logistical limitations and makes anything possible. In a computer-generated simulation of a three-dimensional image or environment, viewers can use special equipment to interact with the simulation in realistic ways. The gaming and entertainment industries are obvious proving grounds for VR. However, VR has the potential to transform many other industries as well, especially in the realm of experiential training where workers can be put into hazardous, difficult, or cost-prohibitive situations without the intense risks associated with these activities in the real world.

Learn more: In this VR briefing, we provide an overview of the state of the technology, bring you interviews with up-and-coming vendors, and share relevant news and trends.

3-D printing

3-D printing creates three-dimensional objects based on digital models by layering or "printing" successive layers of materials. 3-D printing relies on innovative "inks," including plastic, metal, and, more recently, glass and wood. 3-D printing has the potential to turn every large enterprise, small business and living room into a factory.

Learn more about the state of 3-D printing technology and the developments that are fueling innovations.



What's next for the Essential Eight?

Like all technology, our Essential Eight continue to mature and be used in new ways. And the most important trend? Combining individual technologies to yield powerful applications that are greater than the sum of their parts. For example, using IoT sensors to automatically collect data about raw materials moving through a supply chain, then recording that data in a blockchain to create a singular and unchangeable record everyone in the supply network can see. Or using video captured from a drone flying over that same raw material and using AI to not only recognize the material, but also determine how much had been used since the last time the images were analyzed.

Today, five themes are emerging that represent how these technologies are coming together to create the next wave of innovation.

Embodied AI	Intelligent Automation	Automating Trust	Conversational Interfaces	Extended Reality

Embodied AI

Technologies: 3-D printing, AI, Drones, IoT, Robotics

AI is everywhere. Along with IoT sensors, it's integrated in many products, from simple cameras to sophisticated drones. Embedded sensors collect data, which is fed to algorithms that give that object the illusion of intelligence. This enables drones to follow a moving object like a truck or a person autonomously. It enables a 3-D printer to automatically modify a design as it is being printed to have a stronger structure, become lighter, or be more cost effective to print. It enables AR glasses to overlay data on an anchored endpoint or allow you to communicate via voice with a robot or conversational agent.

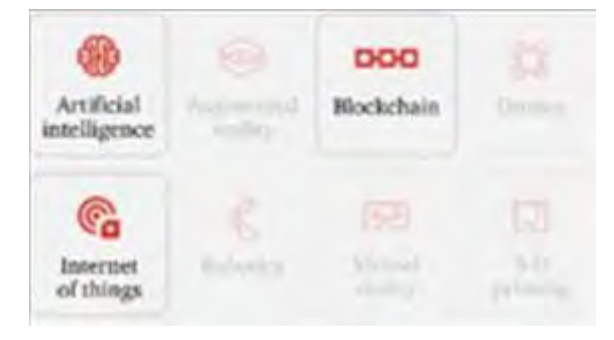
Intelligent Automation

Technologies: AI, RPA

Companies got started with robotic process automation (RPA) to streamline processes and reduce costs. Now, the **automation toolbox** continues to expand — and get smarter. This includes everything from natural language processing and machine learning to orchestration software and automation platforms that help you optimize what work is best suited for people and which is best done by

machines. The shift to more **intelligent automation** will yield returns that go far beyond cost savings, such as better customer and employee experience, improved quality due to fewer errors, and reimagined processes that change how business is done.

Automating Trust



Technologies: AI, Blockchain, IoT

One high potential area for blockchain, when used in combination with technologies like AI or IoT, is its ability to automate trust among users within a network. For example, IoT enables the tracking of a pallet of food from the farm to the warehouse to the store. The sensors can verify the entire supply chain — not only to know where a shipment is, for example, but also the recording conditions of each leg of the shipment so you know if conditions become too hot, too cold, or too humid. IoT and blockchain create an immutable supply chain, enabling buyers to trust they are getting an authentic product. They can also be used to verify if a product containing hazardous materials has been correctly and safely disposed.

Conversational Interfaces

Technologies: AI, IoT, RPA, Robotics

While technology like AI or robotics has changed how work is done in the office, in the factory, and in the field, it's not always easy to use. That's changing with a new generation of interfaces, such as voice and conversational agents that make it seamless for business users to interact with technology systems, from finance bots and AI-based predictive analytics to smart sensors and factory robots. These interfaces are improving the employee and customer experience and enabling companies to get the full return on their tech investments.

Extended Reality

Technologies: AI, AR, IoT, VR

The umbrella term encompassing augmented reality, virtual reality, and mixed reality, extended reality (XR) represents the continuum between simple, digital overlays and fully immersive digital experiences. XR's true power will be unlocked when it's used with other technologies like AI and IoT. What's needed is a seamless hardware and software ecosystem that significantly enhances human productivity and experience. Imagine technicians repairing complicated machinery with full and detailed schematics overlaying the real-world object. Or trainers using the power of XR to create realistic simulations that mimic the real world. Just as jet pilots have flight simulations, XR can make a range of hazardous or otherwise specialized industrial activities easier to train for, from wind farm repair and oil rig firefighting to shop floor process optimization.

Source: https://www.pwc.com/gx/en/issues/technology/essential-eight-technologies.html

NANOMEDICINE: NANOTECHNOLOGY, BIOLOGY AND MEDICINE

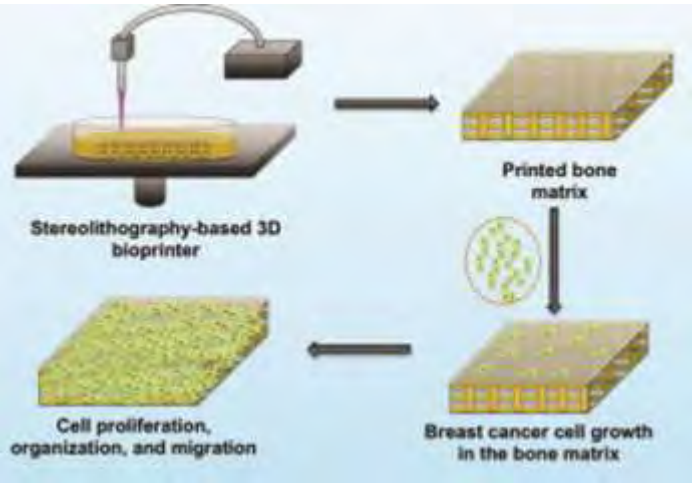
Abstract

Bone is one of the most common metastatic sites of breast cancer, but the underlying mechanisms remain unclear, in part due to an absence of advanced platforms for cancer culture and study that mimic the bone microenvironment. In the present study, we integrated a novel stereolithography-based 3D printer and a unique 3D printed nano-ink consisting of hydroxyapatite nanoparticles suspended in hydrogel to create a biomimetic bone-specific environment for evaluating breast cancer bone invasion. Breast cancer cells cultured in a geometrically optimized matrix exhibited spheroid morphology and migratory characteristics. Co-culture of tumor cells with bone marrow mesenchymal stem cells increased the formation of spheroid clusters. The 3D matrix also allowed for higher drug resistance of breast cancer cells than 2D culture. These results validate that our 3D bone matrix can mimic tumor bone microenvironments, suggesting that it can serve as a tool for studying metastasis and assessing drug sensitivity.

From the Clinical Editor

Cancer remains a major cause of mortality for patients in the clinical setting. For breast cancer, bone is one of the most common metastatic sites. In this intriguing article, the authors developed a bone-like environment using 3D printing technology to investigate the underlying biology of bone metastasis. Their results would also allow a new model for other researchers who work on cancer to use.

In this study, we uniquely integrate nanomaterial and 3D bioprinting technique to create a 3D in vitro bone matrix which offers a biomimetic environment for breast cancer bone invasion study. Breast cancer cells reside in 3D printed bone model that exhibit excellent cellular organization, migration and formation of tumor-like structures that more closely resemble natural tumor observation.



Authors:
Wei Zhu MS, Benjamin Holmes MS, Robert I.Glazer, Lijie Grace Zhang
Source: https://www.sciencedirect.com/science/article/abs/pii/S1549963415001884

EMERGING TECHNOLOGIES IN DIGITAL BANKING IN INDIA

The world has entered what some regard as an era of 'Digital Darwinism', a time where technology and society are evolving faster than many organisations can adapt to the changes. The emergence of the digital five forces - Social, Mobile, Analytics, Cloud and Internet of Things (IoT) - is creating new and valuable sources of business information, ways to interpret data and the means to do so cost-effectively. The value of digital in India is huge; as per a study by the World Economic Forum just four digital initiatives could unlock US$ 1.2 trillion of value for the Indian industry and society over the next decade, representing about 40percent of national GDP in 2015.

Evolving technologies

It was only in late 1990s that some private sector banks introduced non-branch banking services through use of information technology. Initially transactions on internet banking were viewed as insecure. However, internet banking witnessed growth in 2000s owing to initiatives taken by the government, the RBI, falling internet costs and increased awareness. Online banking has enhanced customer satisfaction by providing anywhere anytime banking and benefitted banks through cost savings and increased penetration.

In last few years, the Indian banking sector has realised the need of digital technologies and is rapidly moving to embrace digital banking. They are making considerable investment in creating digital infrastructure in order to offer various solutions like mobile banking, e-wallets and virtual cards, etc. The key innovations in Digital banking are Digital-only/Virtual Banking, Biometric Technology, Artificial Intelligence, Blockchain Technology, Bitcoin and Robotics to mention few.

Digital-only bank provides end-to-end services through digital platforms like mobile, tablets and internet. It is paperless, branchless and signature-less banking offering 24*7 services to its customers. In India, the digital-only banking is based on Aadhaar infrastructure. The digital-only banks offer various services like account opening, term deposits, loans as well as financial products like insurance and mutual fund. While digital banking is simple and cost effective, there are still security risks. The pace of growth in digital-only banks will depend on their ability to address security concerns. Innovations like Biometric technology allows the person to be identified uniquely by evaluating one or more distinguishing biological traits like face, hand, retina, voice and ear features. The use of biometric authentication can eliminate the requirement of multiple passwords and PIN codes. The Indian banking sector is also gradually adopting biometric authentication to provide simple and secure banking experience to its customers.

Artificial Intelligence (AI) can provide quick and personalized services by dealing with each customer and focusing on their specific requirements. It can be used to collect information, automatically build models based on that information, inference and communicate in natural way. In India, only large banks are currently seeking to introduce AI in their services. The key components of AI are machine learning, computer vision, natural language progression and natural language generation. Indian banks are likely to use AI like machine learning to re-engineer back office processes. Robotics is a technology that mimics the actions of human performing simple rule-based processes. The use of robotics in the Indian banking sector though not yet widespread, is expected to gain ground in the coming years. Robotics is expected to automate processes which are repetitive, rule based and require less human judgement. Also, being scalable and cost effective, it could help automate processes with high transaction volumes. Presently, some Indian banks have started deploying robots to answer customer queries related to banking transactions, demat account, locker facility, fixed deposit, loan, etc. Apart from humanoid robots providing customer

service, software robots are also getting deployed in functions such as retail banking operations, agri-business, trade & forex, treasury and human resource management to name a few.

Globally, banks are seeking to use block chain technology (BCT) for operations such as money transfer, record keeping and other back-end functions. Block chain technology can be used in banking activities like secure document management, reporting, payments, treasury & securities and trade finance. Banking industry can benefit from block chain technology as it helps in fraud prevention, increasing the resilience of the bank's IT infrastructure and also increases transparency of processes. Besides these advantages BCT is also cost efficient and provides auditability & provenance. Bitcoin is the decentralised digital currency as well as the decentralized peer-to-peer payment network that is powered by its users with no central authority. In India, the RBI hasn't yet authorized use of bitcoins and issued a press release on Feb 1, 2017, cautioning the users, holders and traders of bitcoins about the potential financial, operational, legal, customer protection and security related risks. Despite this, bitcoin exchange platforms like BTCX India, Coinsecure, Unocoin and Zebpay have been developed in India.

Other upcoming technologies

Apart from these technologies, there are many other technologies which Indian banks could harness in future. Banks can use google glass technology to locate the nearest bank branch/ ATM, check account balances and use video conferencing for technical support. Augmented Reality (AR) app is integration of digital information with the user's environment in the real world. In India, AR mobile app has been launched by a bank which lists all dining destinations, property lists, and shopping centres, bank ATMs, branches etc with real life pictures along with distance and directions. Installing Bluetooth beacons at bank branches could allow banks to integrate physical and mobile channels to provide effective communication. Although the adoption of beacon technology by Indian banks is very less, it is expected to increase going forward with many Indian companies engaging in beacon technology and growing smart phone users. Indian banks are yet to experience extensive adoption of many technologies, however, significant investments and developing dedicated teams to test these technologies is a positive sign.

Author:
Dr Arun Singh,
Lead Economist, Dun & Bradstreet India

Source:
www.forbesindia.com/blog/digital-navigator/emerging-technologies-in-digital-banking-in-india/

BHIM – A CASE STUDY

BHIM (**Bharat Interface for Money**) is a mobile payment App developed by the National Payments Corporation of India (NPCI), based on the Unified Payments Interface (UPI). Named after B. R. Ambedkar and launched on 30 December 2016, it is intended to facilitate e-payments directly through banks as part of the 2016 Indian banknote demonetisation and drive towards cashless transactions.

The app supports all Indian banks which use UPI, which is built over the Immediate Payment Service (IMPS) infrastructure and allows the user to instantly transfer money between bank accounts of any two parties. can be used on all mobile devices.

Benefits

BHIM allow users to send or receive money to or from UPI payment addresses, or to non-UPI based accounts (by scanning a QR code with account number and IFSC code or MMID (Mobile Money Identifier) Code).

Unlike mobile wallets (PayTM, MobiKwik, mPesa, Airtel Money, etc.) which hold money, the BHIM app is only a mechanism which transfers money between different bank accounts. Transactions on BHIM are nearly instantaneous and can be done 24/7 including weekends and bank holidays.

BHIM also allows users to check the current balance in their bank accounts and to choose which account to use for conducting transactions, although only one can be active at any time.

Users can create their own QR code for a fixed amount of money, which is helpful in merchant-seller-buyer transactions. Users can also have more than one payment address.

If the 12-digit Aadhaar number is listed as a payment ID, the BHIM app will not require any biometric authentication or prior registration with the bank or UPI.

Version 1.3 allows users to use mobile numbers from their contact book to send money and also save payment addresses for future use without needing to type the address again. User can also check the transaction history, which only shows transactions through BHIM.

Transaction fees and limits

Currently, there is no charge for transactions from ₹1 to ₹100,000. Some banks might, however, levy a nominal fee for UPI or IMPS transfers.

The minimum transaction amount is ₹1, and the maximum number of transactions per day is 10. If the 10-transactions-per-day limit has been reached, the user needs to wait for 24 hours from the last transaction before making another transaction.

Currently, the fund transfer limit has been set to a maximum of ₹20,000 per transaction and a maximum of ₹40,000 in a 24-hour period.

Indian banks have proposed transaction charges on UPI transactions, but there is no information on whether transactions through BHIM will also be charged.

Language support

BHIM app currently supports 13 languages (including English), though there are 22 scheduled languages of India (excluding English) under 8th Schedule of Constitution of India. In the near future, BHIM is expected to support all 22 official languages of India along with other regional languages which are spoken widely along with the scheduled languages.

Reception

During the 2017 Union budget of India, Finance Minister Arun Jaitley said that BHIM is currently being used by over 12.5 million Indian citizens. He said that the government will launch two new schemes to promote the use of the BHIM app. One will be referral payments for individuals, and the other will be cashback for merchants who accept payments from BHIM.

See also

- National Unified USSD Platform

Source: https://en.wikipedia.org/wiki/BHIM

PAYTM – A CASE STUDY

Paytm ("*Pay-T-M*", pronounced similar to *ATM*) is an Indian e-commerce payment system and financial technology company, based out of Noida, India.

Paytm is available in 11 Indian languages and offers online use-cases like mobile recharges, utility bill payments, travel, movies, and events bookings as well as in-store payments at grocery stores, fruits and vegetable shops, restaurants, parking, tolls, pharmacies and educational institutions with the Paytm QR code. California based PayPal had filed a case against Paytm in the Indian trademark office for using a logo similar to its own on 18 November 2016. As of January 2018, Paytm is valued at $10 billion and its planning to launch its ipo in 2020.

As per the company, over 7 million merchants across India use this QR code to accept payments directly into their bank account. The company also uses advertisements and paid promotional content to generate revenues.

History

Paytm was founded in August 2010 with an initial investment of $2 million by its founder Vijay Shekhar Sharma in Noida, a region adjacent to India's capital New Delhi. It started off as a prepaid mobile and DTH recharge platform, and later added data card, postpaid mobile and landline bill payments in 2013.

By January 2014, the company launched the Paytm Wallet, and the Indian Railways and Uber added it as a payment option. It launched into e-commerce with online deals and bus ticketing. In 2015, it unveiled more use-cases like education fees, metro recharges, electricity, gas, and water bill payments. It also started powering the payment gateway for Indian Railways.

In 2016, Paytm launched movies, events and amusement parks ticketing as well as flight ticket bookings and Paytm QR. Later that year, it launched rail bookings and gift cards Paytm's registered user base grew from 11.8 million in August 2014 to 104 million in August 2015. Its travel business crossed $500 million in annualised GMV run rate, while booking 2 million tickets per month.

In 2017, Paytm became India's first payment app to cross over 100 million app downloads. The same year, it launched Paytm Gold. a product that allowed users to buy as little as ₹1 of pure gold online. It also launched Paytm Payments Bank and 'Inbox', a messaging platform with in-chat payments among other products. By 2018, it started allowing merchants to accept Paytm, UPI and card payments directly into their bank accounts at 0% charge. It also launched the 'Paytm for Business' app which is now called Business with Paytm App, allowing merchants to track their payments and day-to-day settlements instantly. This led its merchant base to grow to more than 7 million by March 2018.

The company launched two new wealth management products - Paytm Gold Savings Plan and Gold Gifting to simplify long-term savings. It launched into gaming and investments, partnering with AGTech to launch a mobile games platform Gamepind, and setting up Paytm Money with an investment of `9 crore to bring investment and wealth management products for Indians.

In May 2019, Paytm partnered with Citibank to launch credit cards.

Funding and share holding

Shareholders	Shareholding
Promoters: One97 communications Ltd	38.0%
Alibaba Group	42.0%
Softbank	20.0%
Total	100.0%

In October 2011, Sapphire Ventures (fka SAP Ventures) invested $10 million in One97 Communications Ltd.

In March 2015, Paytm received its huge stake from Chinese e-commerce company Alibaba Group based in Hangzhou, China, after Ant Financial Services Group, an Alibaba Group affiliate, took 40% stock in Paytm as part of a strategic agreement. Soon after, it received backing from Ratan Tata, the MD of Tata Sons.

In August 2016, Paytm raised funding from Mountain Capital, one of Taiwan-based MediaTek's investment funds at a valuation of over $5 billion.

In May 2017, Paytm received its biggest round of stake by a single investor – SoftBank which also has a large stake in Alibaba, thus bringing the company's valuation to an estimated $10 billion. In August 2018, Berkshire Hathaway invested $356 million for 3%- 4% stake in Paytm, although Berkshire Hathaway confirmed that Warren Buffett was not involved in the transaction.

On November 25 2019, Paytm raised $1 billion in a funding round led by US asset manager T Rowe Price along with existing investors Ant Financial and SoftBank Vision Fund.

Investments and acquisitions

In 2013, Paytm acquired Plustxt for around less than $2 million. Plustxt was started by IIT graduates Pratyush Prasanna, Parag Arora, Lokesh Chauhan and Lohit V that allowed fast text messaging in any Indian Language.

In 2015, Paytm invested $5 million in auto-rickshaw aggregator and hyperlocal delivery firm Jugnoo. The funds were meant to enable Jugnoo to scale up its operations across the country, and improve its driver efficiency. It also acquired Delhi-based consumer behaviour prediction platform Shifuand local services startup Near.in.

In 2016, Paytm invested in logistics startups LogiNext and XpressBees.

In April 2017, Paytm invested in healthcare startup QorQL which uses artificial intelligence (AI) and big data to help doctors improve their productivity and quality of care, and enable patients to manage their health better. In July 2017, it acquired a majority stake in online ticketing and events platform Insider.in, backed by event management company Only Much Louder (OML) and mobile loyalty startup MobiQuest. The same year, Paytm acquired Little & Nearbuy, and merged both.
In June 2018, the company acquired the startup Cube26.

Sponsorship

In July 2015, One97 Communications, the firm that owns the brand Paytm, acquired the title sponsorship rights for India's domestic and international cricket matches at home for a period of four years starting in August 2015. The rights include sponsor branding of series with the title sponsor logo, designation as the title sponsor of the series, visibility at the stadium, and broadcast sponsorship rights. This also includes all BCCI domestic (Ranji Trophy, Duleep Trophy, etc.) matches in India.

Previously, Paytm had acquired sponsorship rights during the 8th season of Indian Premier League. It has also served as an associate sponsor on Sony TV network (which has the telecast rights for IPL) and was the official partner of the IPL team Mumbai Indians. In March 2018, Paytm became the Umpire Partner of the IPL for five years.

Paytm Payments Bank

On August 2015, Paytm received a license from Reserve Bank of India to launch the payments bank. The Paytm Payments Bank is a separate entity in which founder Vijay Shekhar Sharma will hold 51% share, One97 Communications holds 39% and 10% will be held by a subsidiary of One97 and Sharma. The bank was officially inaugurated in November 2017 by the Indian Finance Minister, Arun Jaitley. The inauguration ceremony featured prominent banking personalities including former RBI Executive Director PV Bhaskar, Saama Capital Director Ash Lilani and former Shriram Group Director GS Sundarajan.

It was set to launch over 100,000 banking outlets across India by end of 2018. However, the bank's branches are yet to touch double digits.

Paytm Payments Bank has appointed veteran banker Satish Kumar Gupta as its new Managing Director and CEO.

Paytm Mall

In February 2017, Paytm launched its Paytm Mall app, which allows consumers to shop from 1.4 lakh registered sellers. Paytm Mall is B2C model inspired by model of China's largest B2C retail platform TMall. For 1.4 lakh sellers registered, products have to pass through Paytm-certified warehouses and channels to ensure consumer trust. Paytm Mall has set up 17 fulfillment centers across India and partnered with 40+ couriers. Paytm Mall raised $200 million from Alibaba Group and SAIF Partners in March, 2018. In May 2018, it posted a loss of approximately Rs 1,800 crore with a revenue of Rs 774 crore for financial year 2018. Additionally, the market share of Paytm Mall dropped to 3 percent in 2018 from 5.6 percent in 2017.

Controversies

On May 2018, the Indian investigative news agency Cobrapost released a video of an undercover reporter meeting with Paytm's vice president, Ajay Shekhar Sharma who is brother of Vijay Shekhar Sharma. During the meeting, he reportedly said the company provided the Indian government with the personal data of paytm users in the Indian state of Jammu and Kashmir by violating user's privacy and policies. This went viral through internet, throughout the day. Later, Buzzfeed reported that, Sharma has close ties with India's ruling party Bhartiya Janata Party. Meanwhile in response, the company tweeted that, it never shared user's data with third parties in which it again denied the contents of the video and stated that it never received requests from law enforcement on twitter. Paytm also stated that any person claiming otherwise "is not aware of the policy and is not authorised to speak on behalf of the company".

Awards and recognition

- Outstanding Startup of the Year Award at *Forbes* Leadership Awards 2016.

Source: https://en.wikipedia.org/wiki/Paytm

INDIAN STARTUP SUCCESS STORIES THAT WILL INSPIRE YOU

They had an idea in mind. They left their cushy jobs. They worked hard. They created history.

India is witnessing a brand new generation of startups, making their presence felt not just in the domestic sphere, but also globally. They're inspiring success stories of people who have paved their own roads of innovation and dreams.

1. Make My Trip

Brainchild of Deep Kalra, an IIM Ahmedabad alumnus, Make My Trip has revolutionized the travel industry over the years. It was originally launched in the US market in 2000 to cater to the needs of NRIs for their Indo-American trips. It launched its operations in India in 2005, starting with ight tickets. After a few years, Make My Trip got listed in NASDAQ and in the next year went on to make 3 acquisitions. It has got worldwide recognition and innumerable rewards.

2. Flipkart

No one would be a stranger to this one! Flipkart achieved massive success a few years back owing to its rst mover advantage in the online market in India. Sachin and Binny Bansal, both IIT-D alumni, worked with Amazon before, thus they introduced a similar concept into the Indian market. They started with books in 2007 and now sell almost everything, from personal care to jewellery, from CDs to stationery. It acquired Myntra for around INR 2000 crore.

Flipkart.com has made it to the top ve global billion dollar start-up club with a valuation of $11 billion, according to the Wall Street Journal and Dow Jones VenturSource report published on Thursday.

3. Zomato

Launched in 2008, Zomato hasn't been anything less of a sensation. It covers over 331,200 restaurants in 19 countries. Started as Foodiebay.com, in two years, it was named the most promising internet companies in India. In another two years, it went on to get international recognition.

Deepinder Goyal and Pankaj Chaddah, the co-founders always wanted to create their own path, a path with its own obstacles. Zomato had no funding initially, their growth was excruciatingly slow. However, tables turned very soon and it made Zomato what it is now.

4. redBus

Started in 2006, redBus has grown phenomenally over the past few years. An online bus ticket booking and hotel booking site, this start-up achieved success for its innovative idea of making bus ticket booking easier for the common man. Phanindra, Sudhakar and Charan, the budding entrepreneurs from BITS Pilani initiated this idea, when one of them, Phanindra couldn't go home for Diwali because he didn't get a bus ticket. All of them were working for reputed MNCs at that time; it was a huge risk for them to start redBus.in. That risk, however paid o and the rest, as they say, is history.

5. Housing.com

A Mumbai-based real estate search engine, Housing.com was co-founded by twelve IIT-B graduates with the idea to introduce transparency in the real-estate market. What is commendable about Housing.com is the exponential rate at which it has grown. It was just founded two years ago and the response they've got is amazing.

Despite many hurdles, Housing.com managed to achieve enormous success. It has raised four rounds of funding since its founding in 2012.

6. InMobi

Founded in 2007, InMobi, a mobile ad network giant was a result of entrepreneurship expertise and an innovative idea. Naveen Tewari, an alumnus of Harvard Business School, who had previously worked at McKinsey, wanted to build something which he could call his own. Before tasting success, it had its own set of problems. Since, it operated internationally, people weren't sure if an Indian company could achieve success.

Despite the obstacles, it has had a great reception around the world; it is now one of the largest mobile ad networks in China. Its growth from a start-up to an MNC is certainly inspiring.

7. FreeCharge

An e-commerce website, FreeCharge was founded in 2010 by Kunal Shah and Sandeep Tandon. It has made mobile recharge free by oTering equal value back to the customers in form of retailers' coupons. It's success to be credited to the fact that it's a win-win situation for both the customers and the retailers. Like any start-up, there were many hurdles that FreeCharge had to face- everyone thought that it was too good to be true and weren't too serious about it.Some retailers felt that the concept of 'free' would harm their brand.

However, FreeCharge has been able to overcome most of its problems. Now, they have tied up with various production houses like Sony Pictures, YRF, UTV etc.

8. Ola Cabs

Who would've thought that a few years back that booking cabs would be so much easier? Thanks to Ola Cabs, travelling in a cab now costs less than travelling in an auto rickshaw. Bhavish Aggarwal and Ankit Bhati who co-founded Ola Cabs were IIT-B graduates who were working in MNCs before going on the uncertain path of entrepreneurship. This idea was formed after a weekend trip on a rented car had gone bad for Bhavish. He wanted to bring transparency and convenience to consumers in this area. Last year in october, Ola Cabs has raised around $210 million at a valuation of nearly $1 billion, with this, it has joined the league of the most valued start-ups in the country.

9. Teach For India

A non-profit organization under the Teach For All global movement, Teach For India works towards ensuring excellent education for all children. Founded by Shaheen Mistri in 2007, TFI exists because of a deep belief that every child can and must attain an excellent education. For the same, TFI has a fellowship, wherein it recruits college graduates and young professionals to serve as full-time teachers in low-income schools for two years. Today, Teach For India is present in 7 cities and have 910 Fellows and 660 Alumni working towards eliminating educational inequity.

10. Make A DiMerence (MAD)

Michelle Obama dances with underprivileged children enrolled in the academic programme of Make A Di erence in Mumbai.

MAD has justiUed its slogan- 'Don't Stop BELIEVING!' in almost a decade of its operations. It mobilizes young leaders to bridge the gap of education inequality. In 2005, MAD's founders – Jithin C Nedumala, Gloria Benny and Sujith Abraham Varkey decided to visit a boys' Home in Cochin to spend some time there. Children at shelter homes were talented and had aspirations and so they felt that more needed to be done. Soon, they started going back regularly, just to spend time with the children there. The MAD story started there.

They have various programmes where various volunteers are recruited to teach kids from disadvantaged backgrounds. Currently around 2100 MAD volunteers teach close to 5200 children across India. It has received a lot of recognition from international organizations for its successful operations.

Source: https://www.entrepreneurship-campus.org/10-indian-startup-success-stories-that-will-inspire-you/

INDIA'S JOURNEY TOWARDS A US $5 TN ECONOMY AND THE ROLE OF STARTUPS

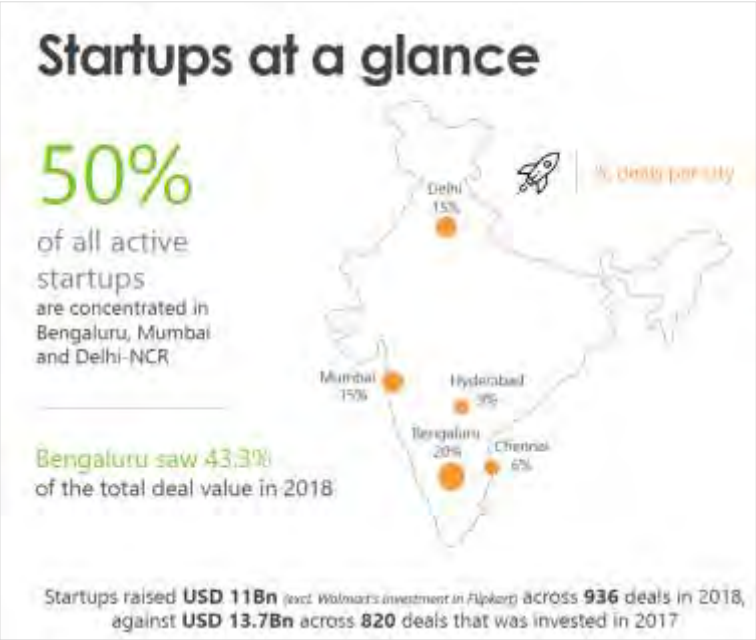
Prime Minister Narendra Modi in his address at the BRICS summit, reinforced the goal set forth by India to become a US$ 5 trillion economy by 2024. Earlier in his address at the 56th convocation of IIT-Madras he emphasised the role of startups to help in realising this goal.

In the last 5 years the Indian startup ecosystem has raised over $50 billion. We now have over 250 plus startup incubators and over 500 institutional investors apart from thousand odd direct investors. This sector has already delivered over 800,000 direct jobs and over 30 lakh indirect jobs. There are about 39,000 plus startups and 30 unicorns (Startup Company valued at over $1 billion), India is today home to the third largest startup ecosystem after US and China. As per projections India may have 100,000 plus startups with 100 plus unicorns and a market value of $500 billion plus.

Currently, we are a US$ 2.7 trillion economy and it is amply clear that significant structural reforms need to be undertaken on a war footing to reach there while continuing to have safeguards wherever strategically required. Start-ups have demonstrated promising potential and play an important role in economic development given the fact that they have a potential to create jobs across different economic strata of the society. India's startups which have grown significantly have largely innovated in the internet based consumer space. Buyers and sellers across goods and services are now able to connect and do business seamlessly. These platforms have been successfully able to innovate by bringing supply chain efficiency and seamless connect between consumers and sellers through electronic means powered by the internet and with the comfort of a mobile phone. India is also revolutionising in the fintech space by transacting more electronically.

Indian start-up ecosystem: Growth and potential

With more than 39000+ start-ups; the Indian start-up ecosystem is the third largest ecosystem which has already created a USD 130 Bn value. There has been an upsurge in the funding since 2014 with start-ups raising USD 50 Bn across 3700+ deals. The numbers are suggestive of the potential that this ecosystem has to unlock *(India@2030, Mohan Das Pai and 3one4Capital).*



The Internet has the potential to be among the largest in India, as it is in the US/China ($1-$2 trillion market). Internet is likely to be amongst the largest industries in India – similar to or larger than banking, consumer, healthcare and automotive.

Therefore, building the ecosystem for start-ups is more than necessary in the coming decade for India as the economy

transitions into an innovation economy, which if not adequately backed by favourable policy and government support can become a potential regret point for the decade after. India with its vast consumer and seller base in goods and services can easily aspire to become one of the world leaders in the space of Internet-based start-ups which is currently with US and China.

The largest sub-sectors of start-ups are in areas of e-Commerce, ride-sharing, travel, accommodation, fintech, home services, search, classifieds and social media. In the case of China, the government has made it nearly possible for Chinese internet firms to grow through a ring-fenced protectionist approach which may not work for in India as we are administered and run differently as a democracy with an open economy. In Europe, the entrepreneurial ecosystem did not develop as European governments failed to provide support to European firms.

India has a huge scope to attract over $100 billion in potential FDI/FII inflows given there is adequate and supportive policy environment.

Why simpler regulations are critical to not stifle start-up story?

(Source: Yourstory, Inc42, TV Mohandas Pai)

For support of conventional businesses, the country has from time to time come up with industrial policies. The emerging economy businesses in the Internet space must be considered as distinct from the IT/software. E-Commerce is a part of this emerging world and Internet-based businesses include various sectors from retail, transportation, travel, hotel and tourism, logistics, health, education, insurance, fintech and other emerging services.

The emergence of these businesses in the digital start-up space would lead to a digital economy in the next stage. Hence the need for an enabling policy with necessary legal and regulatory framework would become an essential aspect to protecting the interests of this important emerging area of the economy.

This new sector needs to be acknowledged and recognized for its uniqueness and peculiarities considering that they have the potential to become national assets of the future. It is therefore very important that Ease-of-Doing Business are more so looked at for such emerging companies wherein they are not subjected to regulations that have a 19th century origin.

Currently, the US dominates the global Internet-based e-Commerce followed by China closely.

It is interesting to note here that while the US model is led by US corporations which have grown over time to become large corporations, which have always sought and fought for free and unregulated global flow of data, the Chinese model, which is a form of state directed capitalism, has through its innovative adaptations to the digital context have been equally extra-ordinarily successful. *(Digital Industrialization in Developing Countries - Parminder Jeet Singh - IT for Change-Commonwealth Secretariat).*

A third alternative model may be becoming discernible in some developments in India and the EU. It gives a much greater role to the public sector than the US model does, but in a rule-based manner, unlike in China. This may be defined as a mixed economy approach to the business. A sound digital industrial policy will combine at least five elements; (1) providing enabling legal and regulatory frameworks, including for easy and secure e-transactions; (2) supporting a start-up ecology and other domestic digital businesses; (3) building public digital and data infrastructures; (4) shaping regulatory frameworks for digital monopolies that are set to control whole sectors; and, (5) as required, developing public/community digital platforms in some key areas.

For the Start-up sector in India to take off in a big way and become the next billion/trillion-dollar enterprises of the future, it is important that government should look some critical policy changes such as enable the start-ups to list on the main board of the stock exchanges or create a mechanism for the start-ups to be able to sell to the Government as a consumer since it is one of the biggest consumers and many start-ups in other parts of the world have grown by merely selling to the government. Other than strategic policy initiatives, the regulators must ensure that they do not introduce policies that would have massive adverse impacts on the functioning of such start-ups and at the same time they should evolve and work with the industry to ensure that old laws are not applied to the emerging business models in this evolving sector. There are several ministries and departments that come into play while regulating the start-up ecosystem more so because of the nature of the businesses being of ones that are creating huge amounts of data that can be innovatively used to enhance customer experience and market share.

How to unlock the potential?

Start-ups are very critical to India's economic and social growth besides being a huge provider of jobs and livelihoods across different economic strata of the society. India needs to create 10-million jobs every year and global experience and facts show that it is start-ups and self-owned business with an entrepreneurial sense and not large enterprises that create net new jobs in any country. Start-ups are increasingly becoming the centers of innovation besides contributing to technological advancements, lower costs and economies of scale. They act as catalytic agent for change, which results in chain reaction. Once an enterprise is established, the process of industrialization is set in motion. Developed nations are now looking towards India to gain maximum from this emerging business that has a huge disruptive potential. It is important for the Indian government to support and help start-ups promote themselves, not just in India but across the globe by ensuring they are part of key business delegations that goes along with the Prime Minister and other key ministers.

This will not only lead to promotion of start-up ecosystem and livelihood but also help in India's long cherished dream of creating the next trillion-dollar enterprises of the world emerging from India. Start-ups in the internet tech space have been successful job providers not only for India but also for Bharat and today truly represent the face of an inclusive industry that has a huge promise and potential to create the next billion /trillion-dollar enterprises from India. It is also important to note that this sector of the economy has also the huge potential to create data that will drive the artificial intelligence in the future as nearly everything today gets represented in

data. Data driven digital intelligence is the central element in reorganizing us into a digital society and economy and India needs to work towards creating its companies that will create this important asset of tomorrow called "data".

The opportunity for CMA's in this journey

Being a large country, jobs and livelihoods continue to be a focal point and hence the need for more job creators in the form of entrepreneurs, start-ups besides existing conventional businesses. There is an equal need to have quality and skilled human resources to shoulder this journey of startups in efficiently building the businesses and also shouldering the transition journey to a $5 tn economy. Therefore this journey requires all the more need for smart and capable finance and cost management professionals who will be needed to steer these businesses to the next level, thereby contributing to economic growth. While as a nation we still may not necessarily acknowledge this aspect being a key contributor that can move India towards the aspired $ 5 trillion goal, it is a no brainer that India needs to have more skilled capable manpower of cost and management professionals who are qualitative and practical oriented to aid startup founders in their journey and in turn effectively shoulder a strong foundational journey of the economy that moves it towards this 5tn goal by steering India Inc. and the nation forward.

Growing India into a $5 trillion economy by 2025 is a bold ambition and will need contributions from every corner of the country and economy. By supporting risk-takers and wealth-creators building for a better future, we can accelerate India's transformation into an unstoppable economic powerhouse.

Author: CMA, Rameesh Kailasam
CEO, IndiaTech.Org

A STRING OF AGRITECH STARTUPS ARE SET TO PLAY A DOMINANT ROLE IN DISSEMINATING INFORMATION TO FARMERS

Imagine a farmer being able to keep track of livestock remotely, using a mobile phone, or being able to check soil quality before sowing or getting timely weather information that helps to protect crops.

Such a scenario may not be too far away, given the advent of the 5G mobile communication standard and artificial intelligence-enabled Internet of Things, which agritech startups are using to provide solutions to farmers and bring business and scale to agriculture in India.

Such agritech startups are set to play a dominant role in disseminating information to farmers and maximising their profits in the near future, experts predict. However, growth in this sector will be spurred only with a strong financial inclusion policy, faster data penetration and more government support in terms of funding, industry officials said.

Still, there is potential, as reflected in the mushrooming of agritech startups.

Smartbell, an animal health monitoring solutions company founded by Veena Adityan and Jose Chitty, has developed sensors that can be mounted on collars or ears to monitor the movement and location of cattle and their health.

About 70% of the cattle in India are affected by preventable diseases, said the UK-based company. Smartbell's devices can also be connected to large cooperative dairy producers and cattle insurance companies. Duke of Yorkfounded Pitch@Palace is an investor in Smartbell.

Many startups in the remote agri -service business were perhaps inspired by the government's DigiGaon campaign launched by Prime Minister Narendra Modi, which aims to digitally connect every village and educate every rural citizen about the significance of Digital India.

"We will create a white paper on the impact of connectivity on modern villages… we will also dive deep into some case studies for the same. This is also a part of the DigiGaon initiative," said Avijith Dutta, managing partner at TenX2, a startup advisory company in Hong Kong that focuses on consulting and leveraging partnerships.

While some states have established progressive policies, there's still a long way to go, said Kunal Prasad, cofounder of Cropin, an agritech startup that provides software solutions to agribusinesses globally.

"From financial policies to data policies to incubation policies, there's a lot more support that is needed from the government. Apart from this, connectivity remains a hurdle, especially in small and remote landholdings, where intervention is needed the most," Prasad said.

Cropin, backed by Chiratae Ventures and the Bill & Melinda Gates Foundation Strategic Investment Fund, has raised $12 million so far

Whirlybird, a Maharashtra-based startup, works on curbing post-harvest losses. It provides farm management solutions and soil and meteorological sensing as well as real-time and customised farmer advisory services.

A report by Down to Earth magazine pointed out that Indian farmers incur Rs 92,651 crore in post-harvest losses annually, the primary causes of which are poor storage and transportation facilities.

Niruthi Climate and Ecosystem Services uses data analytics to provide weather information & predict crop yields and facilitates the procurement of yield-

based crop insurance schemes to farmers.

“Remote services like crop insurance have a market share of Rs 180 crore in India today and this is expected to become Rs 600 crore,” said Mallikarjun Kukunuri, CEO of Niruthi, based in Hyderabad.

While IoT and 5G can make a big difference, some fundamental issues remain, said Hemant Joshi, technology, media and telecommunications expert at Deloitte India.

“There are technologies to solve some issues, but fundamental problems in agriculture like availability of water and subsidy-based sustainability models are to be resolved,” Joshi said.

Apart from using technology in agriculture, the focus needs to agri-related markets as well, Joshi said, citing the example of supply chains.

“There is a huge potential for tech startups there,” he said.

Apart from standardisation in connectivity, another challenge is the huge capital expenditure needed to set up the infrastructure to support digital services, Dutta of Tenx2 said.

“Who will bear capex in agritech sector as connectivity towers, farm sensors or solar panels have costs of deployment? While the farmer or enterprises want it as service on an opex basis, there is the hurdle of the cost of initial deployment of the technology to deal with first,” he said.

There’s been quite a shift in the mindset of farmers, who are more receptive to the idea of using technology now, especially as they have more disposable income to invest in improvements, said Prasad of Cropin. However, in many parts of the country, a lack of acceptance of techbased solutions remains a challenge, especially since over 80% of the farmers are small and marginal, he said.

Author:
Bhavya Dilipkumar

Source:
https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/how-a-raft-of-agritech-startups-are-changing-the-way-farming-is-done/articleshow/72909260.cms

TECHNICAL SESSION-II

MISSION 5 TRILLION – DRIVING SDG THRU' CMA

Overview

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability is the foundation for today's leading global framework for international cooperation – the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs).

UN sustainable development goals (SDG) are major enablers of business competitiveness. This is based on the premise that SDGs address the input and product market conditions by bolstering the potentially available capital classified in four types - physical, natural, social and human capital. These are critical inputs for businesses to thrive. The SDGs create enabling business conditions by reducing long term risks, bringing transparency in sustainability risks and impacts, creating new business opportunities and bringing business competitiveness. At a policy level, SDGs address the seeming irreconcilable trinity of equity, efficiency, and sustainability. Our pursuit of the dream of a $5 trillion economy makes it mandatory to emphasize on green accounting and budgeting for the social externality costs of growth.

Health reform is critical for our nation's families which involve strategic considerations for reducing the crushing burden of rising health care costs. Achieving that goal requires streamlining Medicare and refocusing our health care delivery system on prevention, primary care, and treatments at affordable cost. Understanding the cost of health-care delivery is essential for guiding resource allocation decisions that have direct implications for patient care and health outcomes. Traditional costing approaches typically measure costs at the departmental level through top-down allocation procedures. They do not provide accurate patient-level cost information and are not based on service delivery processes.6 For example, the management accounting system for hospitals, allocates aggregated expenditures to cost centres such as transportation, information technology, equipment and security. These costs, in turn, are distributed to medical services such as women's health, pharmacy and radiology, with unit costs estimated by dividing service-level costs by the number of patients seen or service units delivered.

This approach is adequate for understanding programmatic costs and major cost drivers, and to calculate an average cost per patient or per service. However, it fails to capture whether, how and why clinical processes, activities and protocols vary from one patient to another, including among patients who present with the same condition. Nor does the approach give information about the actual mix of resources used to treat individual patients. Traditional cost methods simplistically assume homogeneity across patients and providers. However, evidence indicates that clinical care is highly idiosyncratic and that variation can sometimes serve a purpose, such as to customize care for a patient's comorbidities and medical history. Equally important, such methods do not link practice variations to variation in patient outcomes. Such information is critical for informing the hospital administration about staffing and delivery of day-to-day health-care services.

To reduce variation in resource use that does not contribute to patient outcomes, the time-driven activity-based costing approach takes the patient, not a clinical department, as the unit of analysis. The approach enables hospital administrators to understand the total costs of all the resources used for patient care. The cost data inform process improvement, staffing and other resource allocation decisions, ultimately

leading to improved patient outcomes. By following the resources used, the approach provides a detailed breakdown of each clinical activity, including the variation in time from one patient to the next and the use of specific personnel, equipment, supplies and space at each step of the care cycle.

Single-use plastic items including plastic bags, spoons, cups, straws and bottles will be banned with effect from October 2, 2019, on the occasion of Mahatma Gandhi's 150th birth anniversary. The Narendra Modi-led Union Government aims to completely eliminate the use of single-use plastic by 2022. India generates about 9.4 million tonnes of plastic waste each year and with no effective disposal method, the plastic waste ends up the roadsides, in landfills and water bodies. Plastic waste management is a global concern. Globally, around 90 percent of the plastic produced is discarded as waste. So far, more than 60 countries have banned single-use plastic or curbed its use. It is thus imperative to have a cost effective plastic waste management and disposal plan to deal with the huge plastic dump that is degrading the environment.

Sustainability accounting reflects the management of a corporation's environmental and social impacts arising from production of goods and services, as well as the management of the environmental and social capitals necessary to create long-term value. Accounting for sustainability involves linking sustainability initiatives to company strategy, evaluating risks and opportunities, and providing measurement, accounting and performance management skills to ensure that sustainability is embedded into the day-to-day operations of the company.

The Sustainability Framework, which can be applied to entities of all sizes and complexities, consolidates the important aspects of embedding sustainability into an organization and focuses on the integration of sustainability factors from three perspectives--business strategy, operational, and reporting--and highlights the important roles that professional accountants play in facilitating the sustainable development of their organizations.

Sustainability Accounting may be the next emerging issue for accountants. How do we measure corporate activities that enhance the company or create value over time? Activities, such as the impact on the environment, customer relations, highly trained employees, or product innovation, are not always reflected in the numbers, but are valuable assets for the organization and that information should be provided to the shareholders and decision makers.

CMAs have an instrumental role in driving sustainability Development Goals as they work in the domains of accounting, corporate finance and strategy teams in an organization. CMAs analyze and parse data from multiple sources to inform performance improvement. Additionally, they not only crunch numbers for internal review and budget analysis, but also contribute to strategic business decisions by providing insights into the financial condition of the company. Furthermore, they coordinate with other performance managers to propose improvements so as to realize not only economic but also broader Social and Environmental goals.

Topics:

- ✓ Health for All
- ✓ Environment – Single use Plastic
- ✓ Accounting for Sustainability

BRINGING THE PRIVATE SECTOR TO PUBLIC HEALTH: HOW BUSINESS INNOVATION CAN IMPROVE HEALTH CARE ACCESS

What does scalable innovation in global health look like?

It could be a piece of software that provides faster access to blood supplies in Cameroon, an m-health platform that links virtual health coaches to people facing chronic illness in Nigeria, or an app that lets people use points to buy and exchange health products in Senegal, helping them save for out-of-pocket expenses. Or it might be a primary care service that reaches underserved people in India via telemedicine, or a microscope app that can diagnose breast and cervical cancers in remote areas in sub-Saharan Africa, where some 400,000 women die each year because they cannot access screening services.

These initiatives are among the five that took home a first-ever USAID Inclusive Health Access Prize at an event hosted by USAID and Management Sciences for Health at the UN General Assembly this fall. The award recognizes effective and inspiring solutions that have improved access to health care in low-and middle-income countries. These solutions are locally derived and financed, yet they have potential for broader application. Four of the winners are for-profit companies making significant and sustainable contributions to public health.

THE KEY ROLE OF PRIVATE SECTOR HEALTHCARE APPROACHES

Engaging the private sector is an increasingly critical theme in global health, and it is because we are realizing that there is no guaranteed way to achieve universal health coverage—broad access to affordable, quality, essential health care—without it. Globally, particularly in rural areas, people often access health care from private providers. Plus, for-profit entities, including entrepreneurs and micro-enterprises, create nine out of 10 jobs in the developing world.

Innovation, as we saw from the Inclusive Health Access Prize winners, often occurs outside of the public sector—but it is still motivated by a desire to achieve health care for all. These solutions boost the reach of the public sector further than we could have imagined. Their success is also due to support from their governments, whether through connections to public services or regulatory oversight. They illustrate a key reality: Rather than ignoring alternative approaches, governments and development professionals must co-opt them, even when they are fledgling innovations.

For decades, global health aid has focused on driving public health efforts. To bring private-sector initiatives into our work, we need to create an enabling environment where new ideas and technology can flourish and endure. That means focusing on the health systems strengthening that we already know how to do well. It also means addressing interrelated factors like human resources, financing and strong governance with appropriate, enforceable policies and regulations, to create a culture of partnership where everyone—from communities to national governments—looks for ways to support one another to achieve ambitious development goals.

HOW PARTNERSHIPS DRIVE HEALTH CARE INNOVATION

We also need to develop diverse, creative partnerships. There are a number of partnership-driven initiatives that have already gone from

promise to impact. Partnering with social messaging platforms like Facebook and Viber, UNICEF's Office of Innovation created UReport, a mobile app and data gathering platform, which reaches 7.8 million young people in 60 countries, to deliver peer-to-peer education on issues including HIV/AIDS, cholera and Ebola prevention, mental health and bullying, and to relay their health experiences to public leaders.

Creative partnerships can also lead to innovative financing approaches. For instance, the Cameroon Cataract Bond, a pay-for performance loan launched last year, supports the Magrabi ICO Cameroon Eye Institute to provide free or low-cost cataract surgeries to up to 18,000 low-income people over five years. In its first year, the project screened more than 50,000 people and completed more than 2,300 surgeries. The Overseas Private Investment Corporation (OPIC) and the Netri Foundation financed the bond, and a coalition of outcome funders will pay back investors with interest.

Innovations can come from any actor working locally who identifies a need and an appropriate response. Last year, at Management Sciences for Health, we launched a for-profit company, MedSource, in Kenya. MedSource is a group purchasing organization that helps public and private health facilities and pharmacies purchase quality medicines at optimal pricing, passing along both safety and savings to consumers. MedSource also provides access to business management training and loan resources, strengthening Kenya's pharmaceutical sector.

Wherever they may lie on the health continuum, we need to ensure that we share the same goals for outcomes with our private sector partners and monitor our results carefully. Our collective end goal must continue to be high-performing health systems where people have access to accountable, affordable, accessible and reliable health care.

Author: MARIAN W. WENTWORTH
President and CEO, Management Sciences for Health

Source: NextBillion
Link: https://nextbillion.net/private-sector-public-health-care-access/

MEET THE WINNERS OF USAID'S INCLUSIVE HEALTH ACCESS PRIZE!

Launched in May 2019, USAID's Inclusive Health Access Prize competition recognizes private sector organizations that are collaborating with the public health sector on locally-led innovations to improve accountability, affordability, accessibility, and reliability of health care for poor and vulnerable populations. Their approaches address local health challenges within the local health system and demonstrate a vision for expanding to new geographies and bringing primary health care to more people. The prize competition accepted nearly 400 applications from 68 countries with solutions ranging from community health worker models, to online blood banks, to "Uber" for ambulances, to digital health care payment accounts.

The judging panel selected five winners from Cameroon, India, Nigeria, and Senegal that have developed solutions to optimize health systems so that people receive the health care they need in ways they trust without having to pay too much or travel too far. Each of these solutions has the potential to be adapted, replicated, or scaled to other countries or local contexts to meet priority health care needs.

On September 24, 2019, these five awardees won cash prizes for their solutions and had the opportunity to present them at Locally Leading the Way to UHC: USAID's Inclusive Health Access Prize

GIC Med

In Cameroon, GIC Med improves women's access to services they might not otherwise seek or receive by bringing breast and cervical cancer screening, diagnosis, and treatment to public and private health centers. Using a portable microscope connected to a smartphone and telemedicine app, women are screened, diagnosed, and treated at rural public and private health centers that partner with GIC Med. If early stage lesions are detected, GIC Med provides treatment at the point of care using mobile treatment units. Women no longer have to

travel far and make repeated trips to be screened, diagnosed, and treated, and are therefore more likely to access their care and seek additional health information.

Infiuss

Infiuss is an online blood bank and digital emergency supply monitor in Cameroon that provides hospitals and patients with more reliable access to blood. Many health care facilities in Cameroon lack blood banks and patients seldom know how to locate hospitals with an available supply. In addition, patients are required to have three back up donors accompany them to the health facility when getting a transfusion, and may have to pay more than $80 for a single bag of blood. To address this costly burden and provide more reliable access to blood supplies, Infiuss created a database with information on hospital blood banks that allows them to locate and transport blood to patients or hospitals in need. This saves the patient time and money, allowing them to get the health services they need more quickly and reliably. To access Infiuss' services, patients send an SMS, make a phone call, or use a mobile application to request a blood type and quantity. Infiuss then locates the needed blood at a partner hospital and delivers it to the patient.

JokkoSanté

JokkoSanté is a health focused digital payments app that improves accountability in the local health system in Senegal by tracking medicines and enabling payments for health services. The desktop and mobile app allows patients to earn "points" for turning in unused medicines rather than giving them to family members or friends, which has the potential to cause harm. NGOs, foundations, individuals (especially diaspora), and health programs can also purchase and designate online "points" for target populations. The recipients use the points to pay for medical and prescription needs in pharmacies. Individuals may microsave by purchasing points for themselves to ensure that when a medical need arises, they are able to afford care. JokkoSanté also brings greater accountability to the management of pharmaceuticals by tracking use of medicines and online prescriptions.

mDoc

In Nigeria, mDoc advances the accessibility and reliability of health care for people with a range of health conditions through a hightech, high-touch mobile and web-based solution that provides personalized preventive and integrated care support. Individuals sign up to receive virtual and inperson services such as digital tools, nudges, and meetings that help them create and achieve their health goals. mDoc partners with a mix of public and private health care facilities to create a connected ecosystem of preventive and integrated care solutions for people with a range of health needs.

Piramal Swasthya Management and Research Institute

The Piramal Swasthya Management and Research Institute provides community outreach programs and telemedicine services that make health care more affordable and accessible to underserved and marginalized populations in India. Designed to complement the Government of India's public health care system, their telephone-based "helpline" improves access to health information, including advice for minor ailments, and helps link health workers to underserved areas. Piramal Swasthya operates a mobile medical van with a basic laboratory and pharmacy that travels to rural areas to deliver primary care services, particularly on maternal, child, and adolescent health, as well as non-communicable diseases.

Source: (https://www.msh.org/news-events/events/locally-leading-the-way-touhc-usaids-inclusive-health-access-prize) in New York City.

https://competitions4dev.org/healthaccessprize/winners

15 HEALTHCARE SCHEMES IN INDIA THAT YOU MUST KNOW ABOUT

Health is a fundamental human right and a global social goal. It is pertinent for the realization of basic human needs and for a better quality of life.

Health is a causative factor that affects country's aggregate level of economic growth. Since development is a consequence of good health, even the poorest developing countries should make it a priority to invest in the health sector. Unfortunately, health has been poorly invested in by countries with low human development, and the health sector still remains largely untapped and continues to suffer neglect.

Where does India stand?

India's rank in the Human Development Index Report 2018 (130 out of 189 countries) issued by the UNDP depicts the level of ignorance of the health sector in a country like India.

10 shocking statistics on the state of health

1. India spends 1.4% of GDP on health, less than Nepal, Sri Lanka. Source: India Spend, January 2018.

2. 70 percent of the overall household expenditure on health in the country is on medicines. Source: WHO

3. An estimated 469 million people in India do not have regular access to essential medicines. Source: WHO

4. While 63% of primary health centres did not have an operation theatre and 29% lacked a labour room, community health centres were short of 81.5% specialists–surgeon, gynecologists and pediatricians. Source: India Spend, January 2018

5. In 2014, 58% Indians in rural areas and 68% in urban areas said they use private facilities for inpatient care, according to the 71st round of the National Sample Survey Source: India Spend, January 2018

6. Various studies have shown the rising out-of-pocket expenditures on healthcare is pushing around 32-39 million Indians below the poverty line annually. Source: First Post

7. Heart disease (1/4 people) and stroke is the biggest killer of men and women in India. Source

8. 7% of Indians fall below the poverty line just because of indebtedness due to this expenditure, as well as that this figure hasn't changed much in a decade. About 23% of the sick can't afford healthcare because of these payments. Source

9. 55 million Indians were pushed into poverty in a single year due to unaffordable healthcare. (PHFI, 2018)

10. 33 out of 55 million fell under the poverty line due to expenditure on medicines alone. (PHFI, 2018)

Healthcare schemes in India you must know about

Under the National Health Mission, the government has launched several schemes like:

1. **Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A)** programme essentially looks to address the major causes of mortality among women and children as well as the delays in accessing and utilizing health care and services. It also introduces new initiatives like the use of Score Card to track health performance, National Iron + Initiative to address the issue of anemia across all age groups and the Comprehensive Screening and Early interventions for defects at birth, diseases, and deficiencies among children and adolescents.

2. **Rashtriya Bal Swasthya Karyakram (RBSK)** is an important initiative aiming at early identification and early intervention for children from birth to 18 years to cover 4 'D's viz. Defects at birth, Deficiencies, Diseases, Development delays including disability. Early detection and management diseases including deficiencies bring added value in preventing these conditions to progress to its more severe and debilitating form.

3. **The Rashtriya Kishor Swasthya Karyakram** The key principle of this programme is adolescent participation and leadership, Equity and inclusion, Gender Equity and strategic partnerships with other sectors and stakeholders. The programme enables all adolescents in India to realize their full potential by making informed and responsible decisions related to their health and well-being and by accessing the services and support they need to do so.

4. The government of India has launched Janani **Shishu Suraksha Karyakaram** to motivate those who still choose to deliver at their homes to opt for institutional deliveries. It is an initiative with a hope that states would come forward and ensure that benefits under JSSK would reach every needy pregnant woman coming to government institutional facility.

• Since the rate of deaths in the country because of communicable and non-communicable diseases is increasing at an alarming rate, the government has introduced various programmes to aid people against these diseases.

In India, approximately about **5.8 million people die because of Diabetes, heart attack, cancer etc each year. In other words, out of every 4 Indians, 1 has a risk of dying because of a Non- Communicable disease before the age of 70.**

According to the **World Health Organisation,** 1.7 million Indian deaths are caused by heart diseases.

5. **National AIDS Control Organisation** was set up so that every person living with HIV has access to quality care and is treated with dignity. By fostering close collaboration with NGOs, women's self-help groups, faith-based organizations, positive people's networks, and communities, NACO hopes to improve access and accountability of the services. It stands committed to building an enabling environment wherein those infected and affected by HIV play a central role in all responses to the epidemic – at state, district and grassroots level.

6. **Revised National TB Control Programme** is a state-run tuberculosis control initiative of Government of India with a vision of achieving a TB free India. The program provides, various free of cost, quality tuberculosis diagnosis and treatment services across the country through the government health system.

7. **National Leprosy Eradication Programme** was initiated by the government for Early detection through active surveillance by the trained health workers and to provide Appropriate medical rehabilitation and leprosy ulcer care services.

8. The Government of India has launched **Mission Indradhanush** with the aim of improving coverage of immunization in the country. It aims to achieve at least 90 percent immunization coverage by December 2018 which will cover unvaccinated and partially vaccinated children in rural and urban areas of India.

9. In order to address the huge burden of mental disorders and the shortage of qualified professionals in the field of mental health, Government of India has implemented National Mental Health Program to ensure the availability and accessibility of minimum mental healthcare for all in the foreseeable future.
10. **Pulse Polio** is an immunization campaign established by the government of India to eliminate polio in India by vaccinating all children under the age of five years against the polio virus.

11. The **Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)** was announced with objectives of correcting regional imbalances in the availability of affordable/ reliable tertiary healthcare services and

also to augment facilities for quality medical education in the country by setting up of various institutions like AIIMS and upgrading government medical college institutions.

12. Since there are huge income disparities, therefore, the government has launched several programmes in order to support the financially backward class of the country. As about 3.2 crore people in India fall under the National Poverty line by spending on healthcare from their own pockets in a single year. The most important programme launched by the government is **Rashtriya Arogya Nidhi** which provides financial assistance to the patients that are below poverty line and are suffering from life-threatening diseases, to receive medical treatment at any government run super specialty hospital/ institution.

13. **National Tobacco Control Programme** was launched with the objective to bring about greater awareness about the harmful effects of tobacco use and about the Tobacco Control Laws and to facilitate the effective implementation of the Tobacco Control Laws.

14. **Integrated Child Development Service** was launched to improve the nutrition and health status of children in the age group of 0-6 years, lay the foundation for proper psychological, physical and social development of the child, effective coordination and implementation of policy among the various departments and to enhance the capability of the mother to look after the normal health and nutrition needs through proper nutrition and health education.

15. **Rashtriya Swasthya Bima Yojana** is a government-run health insurance programme for the Indian poor. It aims to provide health insurance coverage to the unrecognized sector workers belonging to the below poverty line and their family members shall be beneficiaries under this scheme.

How does Oxfam India work to address healthcare

1. Abhiyan (JSA) and other Health Networks. The campaign was designed to create awareness among general mass and strengthen communities' voice for availing their rights for essential medicines and diagnostic facilities.

2. In Bihar, the name of the campaign on essential medicines was carried out under the tagline of #HaqBantaHai and sub tag of "Struggle from 14 to 40" with an ask to increase the per person, per capita government expenditure on medicines from Rs. 14 to Rs. 40. As a result of the campaign the then Finance Minister, Government of Bihar, committed to provision INR 500 crore in the budget of Bihar for year 2018-19. He committed that will strive to spend Rs. 40 per person, per capita during FY 2018-19. However, due to political instability and elections in Bihar, this commitment did not see the light of the day.

3. In Odisha, over 1000 letters written by the community members were posted to the Chief Minister's office in Odisha demanding free medicines and free diagnostic services at the health centers, and faster transportation services. Post the campaign spike, the State Health Minister ordered for the display of information including CDMOs contact number in all the public health centres. The national political parties in Odisha invited Oxfam India to make presentation on the campaign in their Economic Affairs Committee meeting. A political party has agreed to include some of the demands in their forthcoming 2019 election manifesto. Due to constant advocacy under access to medicine campaign in Odisha, an enhanced budgetary allocation from Rs.263 Cr. in 2017-18 to **Rs.304 Cr.** in 2018-19 is provisioned in the budget for the NIRAMAYA Scheme alone. The government has also launched a new scheme for diagnosis called NIDAN in 2018.

4. In Chhattisgarh, in partnership with the state Jan Swasthya Abhiyan, the data generated from active tracking of stock of essential medicines in public hospitals in 56 facilities of 10 districts has been used for state level advocacy with high media outreach. Various stakeholders, like Chhattisgarh Medicine Services Corporation (CGMSC), Chhattisgarh State AIDS Control Society (CGSACS), CBOs and patients organisations were brought together for joint consultations. During one consultation, the Chhattisgarh Positive People's Network raised concerns related to shortage and non-procurement of HIV/AIDS medicines and related consumables, as a result of which a three month inventory of the required items were procured and distributed by the state health department. Additionally, through training and survey on medicines, the capacities of civil society organisations have been built around the issue of medicines. Regional consultations have been held in order to build solidarity and a campaign around the Right to health and health equity.

Source: https://www.oxfamindia.org/blog/15-healthcare-schemes-india-you-must-know-about

HOW INDIA MANAGES TO RECYCLE WASTE COST EFFECTIVELY

India has a huge population of 1.3 billion and still the country continues to maintain a sustainable development approach. Also named as one of the fastest growing economies with resources being used at an enormous rate, India has still managed to keep its name out of the top 10 plastic waste producing countries, in which 8 positions are currently occupied by neighbouring Asian Nations.

The Reason?

Indian rag pickers, people collecting waste to earn a quick buck for food. Many countries now-a-days, rely on machines to segregate industrial and domestic waste whereas India is majorly dependent upon rag pickers. These people are present everywhere in the country, ranging from small villages to huge cities.

The rag pickers collect useful waste that can be recycled, which they then segregate and sell to scrap dealers dealing in that particular kind of waste. These scrap dealers then sell the waste to recycling companies, thus acting as middle men between the rag pickers and recycling plants.

With this cycled process, India has managed to keep growing while at the same time keep plastic waste quantities low when compared to other developing nations or even developed nations.

Impact

Statistics show that only 9% of the 8 billion tonnes of plastic has been recycled till date.

In New Delhi alone, around 15-20% of plastic is sent to recycle plants by rag pickers, saving municipalities INR 10 million per day. Apart from being Eco-friendly, this waste management technique is also cost effective.

Efforts by the Indian Government

The contributions by rag pickers were recognised by the Indian government, who after 2016 were given identity cards and masks, to shield them from health hazards. While the government in still working on educating the people about waste management and not to litter public places, volunteers are given rewards and benefits for keeping their country clean. Also, the government is providing heavy subsidies and tax benefits to companies investing in waste management.

Source: https://thesmokingearth.com/03/01/2019/how-india-manages-to-recycle-plastic-waste-cost-effectively/

"We need a bio-inspired packaging material that disintegrates completely, no matter where it ends up. PHA (polyhydroxyalkanoates, a class of natural polyesters derived from bacterial fermentation) is one solution. It will degrade just like a leaf—quickly in any type of environment and into nature's molecular building blocks: carbon dioxide, water, and nontoxic biomass. We're learning to produce it with biowaste, like rancid olive oil."

- Tony Fadell (known as the "Father of the iPod")

TESCO BACKS UK DRS SCHEME

Tesco has announced that it supports the development of a "cost-effective" deposit return system (DRS) for plastic bottles as part of environmental commitments set out in its 'Little Helps' plan.

And, the supermarket revealed it is working with a number of partners to scope a project to explore how this can operate in practice and at scale.

Three commitments

The plans come as part of three commitments which include making all packaging fully recyclable or compostable, ensuring that all paper and board used will be 100% sustainable and halving packaging weight by 2025.

Across the UK, Tesco said it sees three steps. Firstly, an opportunity to "reduce and simplify" the types of materials it uses and accepts. The company says this will include a greater use of compostable and biodegradable materials.

Secondly, an increase in recovery and recycling, which it says is one area where there is opportunity for signiKcant government leadership.

"We would welcome the creation of an integrated national collection of packaging and investment in innovative recycling facilities," Tesco said in a statement.

However, Tesco stressed that it views a DRS as only one aspect of the holistic approach that is required to achieve the broader goals of reducing waste and increasing recycling in the UK.

Lastly, there were calls for a change in consumer behaviour, which can only be driven once a "recognised and understood" recycling infrastructure is in place.

Tesco also revealed some measures it has previously taken to cut down on plastic waste, including avoiding 653 tonnes of polystyrene being used by removing it from Qsh packaging and 96 tonnes of plastic by replacing a two layer meat tray with a single layer plastic.

Reaction

Tesco said there have been growing calls for a UK-wide scheme to charge a deposit for drinks bottles, which is paid back when they are returned for recycling.

Welcoming the retailer's pledge to support the introduction of a DRS, Samantha Harding, litter programme director at the Campaign to Protect Rural England, said it was "great" that the supermarket had understood the bene ts of the system, and believes there is now enough support to move forward with the plans.

Ms Harding said: "It's so refreshing to see a major brand come out with its own position, rather than hiding behind a trade association. With retailers such as Tesco, Iceland and the Co-op in support, as well as newsagents across England, it's obvious that there is now real potential for us to have a world-class deposit return system."

The Marine Conservation Society (MCS) echoed these views, saying that it hopes Theresa May will take note.

Dr Laura Foster, head of clean seas at the society explained that MCS volunteers have been collecting beach litter data for over 20 years and it has shown the extent of the bottle problem.

Dr Foster added: "Retailers are becoming increasingly vocal that they would like a harmonised approach across the UK, and we want to see the UK Government follow its own Environmental Audit Committee recommendation to introduce a scheme."

Audit Committee

In December, the Environmental Audit Committee called for the introduction of a DRS and a requirement to provide free drinking water in public

premises in order to clamp down on plastic bottle wastage (see *letsrecycle.com* story).

'Plastic Bottles – Turning Back the Plastic Tide' called on the government to introduce a DRS and several other policies to help cut plastic bottle wastage.

In her 25 year Environment Plan last week, Theresa May didn't announce plans for a DRS but also didn't rule it out. A deposit scheme for plastic bottles remains a possibility as consultations and discussions are taking place through Defra which will next month launch a call for evidence on single use charges and taxes.

Coca-Cola

In February last year, Coca- Cola announced that it supports reforms to the PRN system, which "would be complemented by a well-designed DRS system".

The company said that it recognises that DRS is not a universally popular position and that the immediate opportunity to improve packaging recycling lies in reform of the current PRN system in Great Britain.

Source:
https://www.letsrecycle.com/news/latest-news/tesco-backs-uk-drs-scheme/

THE TRIPLE BOTTOM LINE

All businesses must make money. But triple bottom line companies realize that they can do more. This idea has only recently gained traction in the corporate world, but now that it has, the triple bottom line is driving the decision-making of the world's top brands.

What Is the Triple Bottom Line?

Traditionally, business leaders concerned themselves with their bottom lines—or, the monetary profits their businesses made. Today, more leaders have begun to think *sustainably.* The triple bottom line theory expands the traditional accounting framework to include two other performance areas: the social and environmental impacts of their company. These three bottom lines are often referred to as the three P's: people, planet, and profit.

Here is each "P" in more detail.

People

"People" considers employees, the labor involved in a corporation's work, and the wider community where a corporation does business. Another way to look at "people" is, how much does a company bene_t society? A triple bottom line company pays fair wages and takes steps to ensure humane working conditions at supplier factories.

Triple bottom line companies make an effort "give back" to the community. For example, 3M partners with United Way to fund STEM education across the world. This initiative is an example of "enlightened self- interest"—acting to further the interests of others, ultimately, to serve one's own self- interest. The community benefits, and 3M provides itself a well-educated source of scientists and innovators for generations to come.

Planet

A 2016 Gallup poll revealed that 64 percent of Americans are worried about global warming. Public opinion has dictated that enterprises that harm the environment should also bear the cost, and you can bet businesses are taking notice. The "planet" piece of the triple bottom line indicates that an organization tries to reduce its ecological footprint as much as possible. These efforts can include reducing waste, investing in renewable energy, managing natural resources more efficiently, and improving logistics.

For example, Apple has invested heavily in environmental sustainability. Its massive U.S. data centers are LEED certified. In 2016, the company announced that 93 percent of its energy comes from renewables. These actions have nudged other tech giants like Facebook and Google toward using more renewable energy sources to power facilities.

Profit

While every business pursues financial profitability, triple bottom line businesses see it as one part of a business plan. Sustainable organizations also recognize that "profit" isn't diametrically opposed to "people" or "planet." Swedish furniture giant IKEA reported sales of $37.6 billion in 2016. The same year, the company turned a profit by recycling waste into some of its best-selling products. Before, this waste had cost the company more than $1 million per year. And the company is well on its way to "zero waste to landfill" worldwide. According to Joanna Yarrow, IKEA's head of sustainability for the UK, "We don't do this because we're tree huggers, we do this because it's very cost effective."

Benefits of the Triple Bottom Line

Though the triple bottom line has been around for decades, events such as the 2008 financial crisis, the BP oil spill, and climate change cast an almost constant spotlight on corporate ethics and corporate social responsibility

(https://sustain.wisconsin.edu/sustainability/corporate-social-responsibility/). "business as usual" now has a very different meaning.

For global companies, changing operations to minimize risk and fight climate change, for example, requires a lot of time and money. But an upfront investment in corporate sustainability can pay off. An MIT study found that companies that treated sustainability seriously—by making a business case for it and setting concrete goals—were the ones that profited from sustainable activities.

The success and profitability of corporate sustainability initiatives really depend on one thing: a talented employee who knows how to take the triple bottom line from theory to reality. This employee must have specialized knowledge of environmental science, accounting, and economics as well as leadership skills and the ability to use systems thinking to make strategic business decisions.

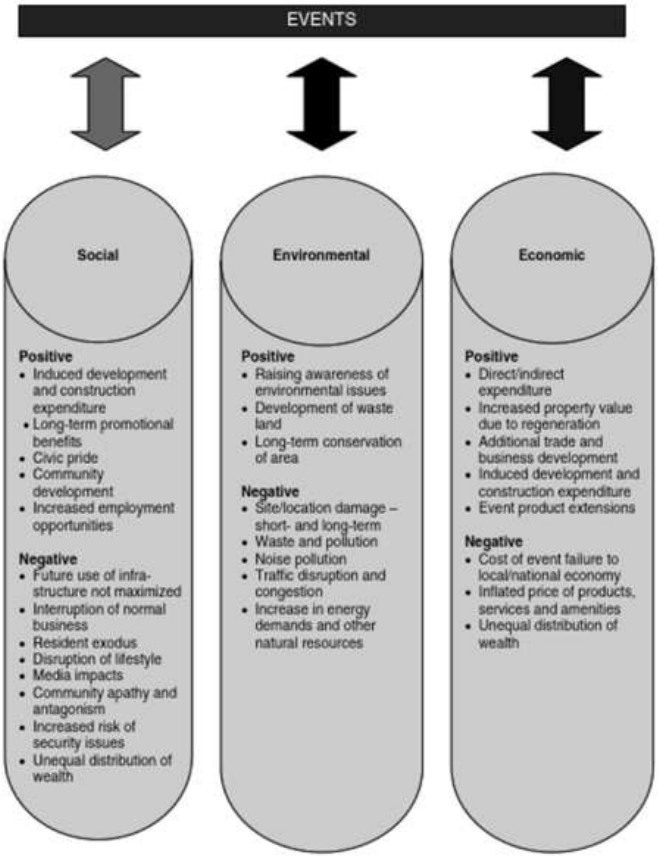
Sustainability is the future. And with this unique mix of experience and skills, *sustainable management* professionals can build some of the most prosperous triple bottom line companies in the world.

Source: https://sustain.wisconsin.edu/sustainability/triple-bottom-line/

TRIPLE BOTTOM LINE

Traditionally, the triple bottom line (TBL) relates to the social, economic and environmental impact of an organisation (Parent & Smith-Swan 2013). As the TBL is greatly associated with sustainability, its principles also refer to people, profit and planet (Starkey & Welford 2001). In their framework (see Figure 1), Raj and Musgrave (2009) defined the TBL as the 'three pillars impacts' of sustainable events. Thus, the evaluation of an event's TBL measures "its socio-economic performance, the cultural or social value and outcomes generated, and the degree and effectiveness of environmental impact management" (Jones 2017:53).

Figure 1: The 'three pillars impacts' of events | Source: Raj and Musgrave (2009)



Moreover, if TBL is also used to leverage sport events, the lack of commonly used and accessible evaluation tools further complicates the sustainability measurement for event managers (O'Brien & Chalip 2008; Jones 2017). It is therefore easier to measure economic outcomes than intangible impacts, such as behaviour change (Fredline et al. 2005; Andersson & Lundberg 2013; Brown et al. 2015).

Source: https://sustainableeventguide.home.blog/2019/03/12/triple-bottom-line/

ACCOUNTANTS CAN SAVE THE PLANET

At the most recent COP 25 event in Madrid, held in December, alarming statistics were announced by the World Meteorological Organisation (WMO) about the state of the global climate.

Their findings revealed that 2019 was the culmination of a decade of exceptional global heat, retreating ice and record sea levels driven by greenhouse gases from human activities. Their analysis showed that average temperatures for the five-year (2015-2019) and ten-year (2010-2019) periods were almost certain to be the highest on record, with 2019 deemed to be the second or third warmest year on record.

Ahead of this WMO analysis, 11,000 scientists from 153 countries signed a joint letter explaining that the world must rapidly and significantly transform how it lives. This statement was released just hours after the Trump administration formally notified the United Nations that it was withdrawing the US from the Paris agreement.
More concerted, collective action by business and society is needed for solutions to these global social and environmental challenges.

Many businesses are already innovating to reconnect with their mission on making a positive impact on society. But as our report Social and environmental value creation says, the economic model in many countries are not working as well as they should. Economies – the way in which scarce resources are distributed through societies – are not functioning effectively. Despite decades of gains for many around the world, many remain excluded to resources that are becoming scarcer. In all regions of the world, per capita income growth remains skewed in favour of the highest earners.

Other pressures are at play here too – ageing populations, changes in diets leading to obesity epidemics, and the rise of technology.

Businesses and the public sector now need to understand their contribution to a degrading natural environment and whether their business model is viable and sustainable in these challenging times. When it comes to being able to make clear and consistent decisions about these mega issues, we need to be able to rely and trust the information that is presented to us.

Trusting the data

In our value creation report, we asked Datamaran to use their big data analysis to examine corporate disclosures on key ESG issues.

They studied the corporate disclosures of approximately 2800 companies by assessing their annual financial reports, sustainability reports or both, and found that from 2014 to 2019 the volume of reporting on key social and environmental issues has increased.

Despite this, key areas such as animal welfare and human trafficking, still receive low coverage. Asia has seen the strongest growth in topic areas covered, catching up with Europe.

Across all sectors, some issue areas that are linked to critical social and environmental issues are underreported. This may be due to an issue not being material to a business, or it could be a lack of awareness of the issue and its importance to investors or other stakeholders. The range of environmental and social issues, and their recognition by business as issues to consider, provides a useful snapshot of the breadth of areas that business today needs to engage with and understand how it impacts them.

What is the role of accountants?

So, what does business need to do, and what is the role of accountants here?
If the goal is to provide everyone with the means to live a good life on an ecologically flourishing planet, the challenge ahead is formidable.

Social and environmental challenges are becoming more complex. Increasingly, these two issues are seen by government, business and finance as interconnected priorities. ACCA believes that professional accountants, finance teams in business and investors can support social and environmental value creation in many ways, such as risk analysis of climate change issues, social impact evaluation and assessing the quality of non-financial information. These are key areas for the accountancy profession around the world and are being incorporated into investment processes including asset valuation, asset allocation, and risk management. Corporate

disclosures and wider ESG data serve as the bedrock for these investment processes.

Demands for better disclosures must also be accompanied by a new strategic approach to business model innovation that embraces social and environmental value creation.

Natural capital and circular principles, for example, must become part of the mainstream of finance. And as the 17 UN Sustainable Development Goals approach their fifth-year anniversary, leaving just ten years to achieve them by 2030, they are becoming better understood as a means for governments, business, investors and civil society to improve how economies can deliver inclusive and sustainable prosperity.

Governments and regulators are asking businesses to better manage their social and environmental impacts to support sustainable prosperity creation. Citizens are asking their governments to do more to protect the environment and resolve societal issues. Customers are also asking business and finance to do this. New products and services must be both socially and environmental aware if they are to succeed.

Specifically, businesses are being called on to meet:

1 increasing requirements from governments for better social and environmental performance
2 greater demands for more precise environmental, social and governance disclosures from investors
3 calls from central bank governors to understand the financial stability risk that climate change poses to financial markets
4 changing customer preferences that need new business models to produce products and services that meet new social and environmental expectations.
5 a volatile environmental landscape in crisis and escalating social problems.

Taken together, these provide businesses around the world with a range of relevant approaches with which to engage.

For professional accountants and finance teams, their involvement in these activities is essential. But to take up the challenges ahead they will need to build on their competencies in four areas.

- To build scientific expertise – with new domains of knowledge and a deeper understanding linked to environmental limits, risks and opportunities.
- To understand societal impact – valuing impact to better define the context and open up opportunity for value creation.
- To collaborate more – working with others from different fields.
- To recognise the interconnectedness of social and environmental issues. Strategies and priorities must reflect this.

Accountants and finance teams can support social and environmental value creation in many ways with their existing skillset and by reaching out across their own organisations.

By interacting with wider stakeholders on complex challenges, they can speed up the urgently needed transition to a more socially just and environmental aware future for the global economy.

Here at ACCA, we're committed to pushing this forward by developing professional accountants with an ethical approach, combined with a wider view of business that covers financial, business, digital and sustainability issues.

As a major global economy, policy makers, businesses large and small can make a common commitment to future generations and make sustainable, long-term value creation the hallmark of our shared society and environment. The challenge is enormous, but it cannot be ignored.

Author:
Alan Hatfield
Executive Director – Strategy and Development, ACCA

TECHNICAL SESSION-III

MISSION 5 TRILLION – DRIVING VALUE CREATION THRU' GOVERNANCE

Overview

Corporate governance is vital for business to create economic wellbeing. Achieving good governance is complex as it involves economics, politics and fundamental aspects of human nature as well as business and markets. Ultimately, governance is about how to make good decisions. As providers of financial information to support better decision making, accountants play a key role in governance. Any governance structure and mechanism should always focus on creating value rather than only working for the sake of compliance with the prescribed norms and guidelines.

Small and medium-sized enterprises (SMEs) often can't approach the goals in the same manner as large corporations or governments, but that doesn't mean it's okay to do nothing. According to the Organization for Economic Cooperation and Development (OECD), SMEs account for an overwhelming majority of private sector business and economic activity in both developed and developing countries. Given the role of small business in the global economy, it is essential to strategically consider their potential contribution in the progression toward the sustainable development goals.

The bases of rule of law and good governance include the principles of respecting human rights, and ensuring equality, inclusiveness, cooperation, transparency, accountability, responsiveness and participation in decision-making. Sustainable development agenda needs to go hand in hand with investments in expanding capacities of government institutions at national and sub-national levels. To transform the world, governments need to transform as well.

Governments have a key role to play in the reorientation of societies towards this sustainability path. They have the mandate and resources to bring all stakeholders together and get them to jointly define common objectives, elaborate policy options, reassess progress and make sure that the direction towards achieving long term goals is maintained. In pursuit of sustainability, governments will have to align their traditional objectives of improving livelihoods and security of people, competitiveness of businesses, delivery of public services and enforcing regulatory frameworks with a broader imperative of ensuring sustainable development.

CMA are certified professionals who possess expertise in the areas of financial analysis and financial planning such as budgeting and forecasting, internal control, reporting, and professional ethics. Hence, they have a critical role to play in Creating strategies to improve and manage various internal and external risks, developing governance structures including monitoring and administering of compliances.

Topics:

- ✓ Boardroom Governance for Value Creation
- ✓ SDG in MSMEs
- ✓ Management Systems for Sustainable Strategy
- ✓ Sustainable strategies in Public Sector

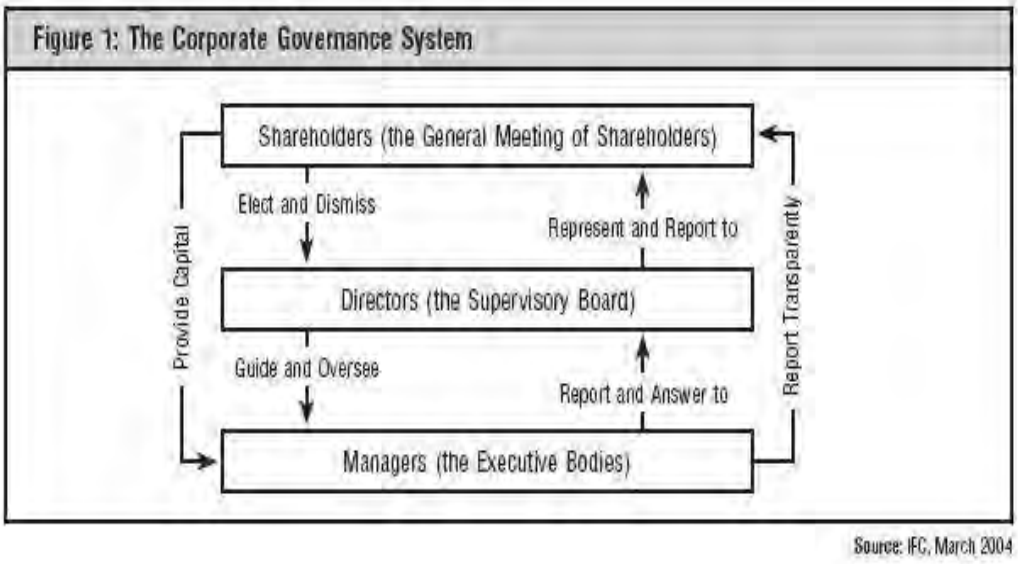
CORPORATE GOVERNANCE: A JOURNEY FROM COMPLIANCE TO COMPETITIVE ADVANTAGE

Introduction

Corporate governance focuses on a company's structure and processes to ensure fair, responsible, transparent and accountable corporate behavior. Corporate governance stands for responsible business management geared towards long-term value creation. There are actually many different definitions of corporate governance but they all address the following elements:

1. Systems of controls within the company
2. Relationships between the company's board/shareholders/stakeholders
3. The company being managed in the interests of the shareholders (stakeholders)
4. Greater transparency and accountability to enable users of corporate information to determine whether the business is being managed in a way that they consider appropriate

The following diagram (Figure 1) represents basics of corporate governance system.



Meaning and Definitions of Corporate Governance

Corporate governance is the method by which a corporation is directed, administered or controlled. It also determines corporate direction and performance. Corporate governance includes the laws and customs affecting that direction, as well as the goals for which the corporation is governed. The board of directors is typically central to corporate governance.

Its relationship to the other primary participants, typically shareholders and management, is critical.

Other participants include regulators, employees, suppliers, creditors, partners, customers, constituents (for elected bodies) and the general community. The corporate governance framework also depends on the legal, regulatory, institutional and ethical environment of the community.

Corporate governance refers to the structures and processes for the direction and control of companies. Corporate governance is the relationship among various participants in determining the direction and performance of corporations. Corporate governance concerns the relationships among the management, Board of Directors, controlling shareholders, minority shareholders and other stakeholders. Good corporate governance contributes to sustainable economic development by enhancing the performance of companies and increasing their access to outside capital. Corporate governance is the system by which companies are directed and controlled. Corporate governance is not an abstract goal, but exists to serve corporate purposes by providing a structure within which stockholders, directors and management can pursue most effectively the objectives of the corporation.

Corporate governance is the relationship between corporate managers, directors and the providers of equity, people and institutions who save and invest their capital to earn a return. It ensures that the board of directors is accountable for the pursuit of corporate objectives and that the corporation itself conforms to the law and regulations. Corporate Governance is concerned with holding the balance between economic and social goals and between individual and communal goals. The corporate governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, corporations and society.

Corporate governance is the system by which business corporations are directed and controlled. The Corporate governance structure specifies the distribution of rights and responsibilities among different participants in the corporation, such as, the board, managers, shareholders and other stakeholders, and spells out the rules and procedures for making decisions on corporate affairs. A key objective of corporate governance is to adequately protect the best interests and fair treatment of the shareholders in a company, as a company's objective should be to maximize shareholder value for all its shareholders, both local and foreign. By doing this, it also provides the structure through which the company objectives are set, and the means of attaining those objectives and monitoring performance.

Most definitions that center on the company itself (an internal perspective) do, however, have certain elements in common and illustrate the same fundamental ideas, which can be summarized as follows:

1. Corporate governance is a system of relationships, defined by structures and processes

   For example, the relationship between shareholders and management consists of the former providing capital to the latter to achieve a return on their (shareholder) investment. Managers in turn are to provide shareholders with financial and operational reports on a regular basis and in a transparent manner. Shareholders also elect a supervisory body, often referred to as the Board of Directors or Supervisory Board, to represent their interests. This body essentially provides strategic direction to and control over the company's managers. Managers are accountable to this supervisory body, which in turn is accountable to shareholders through the General Meeting of Shareholders (GMS). The structures and processes that define these relationships typically center on various performance management and reporting mechanisms.

2. These relationships may involve parties with different and sometimes contrasting interests

   Differing interests may exist between the main governing bodies of the company, i.e. the GMS, Supervisory Board and General Director (or other executive bodies). Contrasting interests exist most typically between owners and managers, and are commonly referred to as the

principal-agent problem. Conflicts may also exist within each governing body, such as between shareholders (majority vs. minority, controlling vs. non-controlling, individual vs. institutional) and directors (executive vs. non-executive, outside vs. inside, independent vs. dependent); and each of these contrasting interests needs to be carefully observed and balanced.

3. All parties are involved in the direction and control of the company

   The GMS, representing shareholders, takes fundamental decisions, for example the distribution of profits and losses. The Supervisory Board is generally responsible for guidance and oversight, setting company strategy and controlling managers. Executives, finally, run the day-to-day operations, such as implementing strategy, drafting business plans, managing human resources, developing marketing and sales strategies, and managing assets.

4. All this is done to properly distribute rights and responsibilities - and thus increase long-term shareholder value

   For example, how can outside, minority shareholders prevent a controlling shareholder from gaining benefits through related party transactions, tunneling, or similar means.

Finally, it must be noted that corporate governance is not a one-time exercise but rather an ongoing process. No matter how many corporate governance structures and processes the company has in place, it is advisable to regularly update and review them. Markets tend to value long-term commitment to good governance practice rather than a single action or “box-ticking”exercises.

Recommended Standards of Corporate Governance

There is no single model or code of best practice for good corporate governance which is universally accepted. However, the Organization for Economic Cooperation and Development (OECD)’s principles of corporate governance are widely considered to be a standard set of general principles for good corporate governance. A standard framework to analyze corporate governance practices is provided by the OECD principles. These principles acknowledge not only the importance of legal protection, but also that of other mechanisms of corporate governance. These principles focus on five elements: the rights of shareholders; the equitable treatment of shareholders; the role of stakeholders in corporate governance; disclosure and transparency; and the responsibilities of the board of management.

Following are other popular models of corporate governance.

The OECD Principles of Corporate Governance

The OECD Principles of Corporate Governance provide the framework for identifying the key practical issues: the rights and equitable treatment of shareholders and other financial stakeholders, the role of non-financial stakeholders, disclosure and transparency, and the responsibilities of the Board of Directors. The OECD Principles are universally applicable to all types of corporate governance systems in countries at all levels of economic development. Since they were published in 1999, the OECD Principles have gained acceptance throughout much of the world as an appropriate framework for analyzing the corporate governance environments of different markets and as a starting point for developing approaches to evaluate the effectiveness of governance of individual companies.

International Corporate Governance Network (ICGN)

The International Corporate Governance Network (ICGN) consists of investors, companies, financial intermediaries, academics and other parties interested in the development of global corporate governance practices. ICGN is an international network of institutional investors, shareholder advocates and corporate governance experts collectively holding more than $10 trillion in assets. The ICGN has developed a set of “amplifications” to the OECD principles for good corporate governance which provide guidance on the recommended implementation of these OECD principles.

Council of Institutional Investors (CII)

The Council of Institutional Investors (CII) is an organization that represents large pension funds in the U.S. They have developed a set of recommended corporate governance policies which are targeted at publicly listed companies in the U.S.

Commission on Public Trust and Private Enterprise

The Conference Board is a non-profit research organization based in the U.S. They formed a Commission on Public Trust and Private Enterprise which consists of 12 very highly respected business and financial industry leaders such as the then Intel Chairman Andy Grove, former SEC Chairman Arthur Levitt, former Chairman of the federal Reserve Paul Volcker, Chairman of Vanguard Group John Bogle and others. This commission formulated a set of recommended corporate governance standards which were released in January 2003.

Key OECD Principles of Corporate Governance

The Organization for Economic Cooperation and Development (OECD), in publishing its elements of corporate governance, took into account the views of many different countries on the subject of what constitutes good corporate governance. The OECD identifies the following key elements of good corporate governance:

1. ***Ensuring the basis for an effective corporate governance framework***
   The corporate governance framework should promote transparent and efficient markets, be consistent with the rule of law and clearly articulate the division of responsibilities among different supervisory, regulatory and enforcement authorities.

2. ***The rights of shareholders and key ownership functions***
   The corporate governance framework should protect and facilitate the exercise of shareholders'rights.

3. ***The equitable treatment of shareholders***
   The corporate governance framework should ensure the equitable treatment of all shareholders, including minority and foreign shareholders. All shareholders should have the opportunity to obtain effective redress for violation of their rights.

4. ***The role of stakeholders in corporate governance***
   The corporate governance framework should recognize the rights of stakeholders established by law or through mutual agreements and encourage active co-operation between corporations and stakeholders in creating wealth, jobs, and the sustainability of financially sound enterprises.

5. ***Disclosure and transparency***
   The corporate governance framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company.

6. ***The responsibilities of the board***
   The corporate governance framework should ensure the strategic guidance of the company, the effective monitoring of management by the board, and the board's accountability to the company and the shareholders.

Drivers of Improved Corporate Governance

Several key factors as given below are behind the move to improved corporate governance:

1. Collapses of prominent businesses (Enron, WorldCom etc.) both in the financial and non financial sectors, have led to more emphasis on controls (e.g. to safeguard assets etc). Finally, the prominent examples of recent corporate collapses give reasons to believe that a firm's valuation does not only depend on the profitability or the growth prospects

embedded in its business model, but also on the effectiveness of control mechanisms ensuring that investors'funds are not expropriated or wasted in value decreasing projects.

2. Changing patterns of share ownership, particularly in the United States and United Kingdom, have led to a greater concentration of share ownership in the hands of institutional investors, such as pension funds and insurance companies. The institutionalisation of shareholdings, i.e., the process of accumulation and managing of capital by professional asset gatherers, is a worldwide trend. Institutional investors are increasingly seeking to diversify their portfolios and invest overseas. They then look for reassurances that their investment will be protected.

3. With technological advances in communications and markets generally, ideas can be disseminated more widely and more quickly, and institutional investors globally are talking to each other more and forming common views on key aspects of investment such as corporate governance.

4. With businesses as diverse as family-owned firms and state-owned enterprises increasingly seeking external funds, whether from domestic or international sources, corporate governance assumes a greater role in helping to provide confidence in those companies and hence to obtain external funding at the lowest possible cost.

5. Although economies are becoming increasingly global, firms with international operations are still subject to national corporate governance from a judicial perspective.

6. Finally, within a country (as opposed to a company or private business), good corporate governance helps to engender confidence in the stock market and hence in the economic environment as a whole, creating a more attractive environment for investment.

Risk Associated with Poor Corporate Governance Practices

A series of high profile corporate financial scandals in the United States and elsewhere has focused attention on the consequences of poor corporate governance. At the same time, increased demand for investment capital has made companies and countries worldwide look to good governance as a means of attracting and keeping investors. Corporate governance, defined by Standard & Poor's as "the way in which a company organizes and manages itself to ensure that all financial stakeholders receive their fair share of a company's earnings and assets", is increasingly a major factor in the investment decision-making process.

Corporate misgovernance causes an information asymmetry and hence the value of the capital assets issued by the companies comes down. Secondly, corporate misgovernance increases the agency costs and that also reduces the value of the companies. Poor corporate governance is often cited as one of the main reasons why investors are reluctant, or unwilling, to invest in certain companies or in certain markets. Investors invest their money in companies with good governance records to ensure that the value of their portfolio does not get reduced.

Information asymmetries arise in the equity market because dispersed shareholders cannot directly observe managers' effort, which creates moral hazard problems, or know the true economic value of the firm or the quality of management, which potentially creates adverse selection problems. Such imperfect information results in greater agency risk being imposed on the shareholder. Moral hazard and adverse selection problems result in agency risk that rational investors price in determining firms' cost of equity capital by demanding a premium for bearing agency risk, effectively raising the firm's cost of equity capital. Corporate governance encompasses a broad spectrum of mechanisms that are intended to reduce agency risk that results from information asymmetries by increasing the monitoring of managements' actions, limiting managers' opportunistic behaviour, and improving the quality

of firms' information flows. Better governance impacts a firm's cost of equity capital by mitigating agency risks driven by the problems of moral hazard and adverse selection. Weak governance, on the other hand, exposes shareholders to greater agency risk.

Active monitoring also helps because this prevents the information asymmetry from increasing. This also reduces the agency costs. For many investors, corporate governance is an additional risk that requires assessment when they are evaluating potential investment opportunities. If investors are unable to evaluate this risk, they are likely to be reluctant to invest or will require a significant premium to mitigate the unknown. In many cases where investors are unable to evaluate the risks associated with governance practices, equities may be incorrectly priced. This works to companies' disadvantage and raises the cost of capital. Where poor governance practices are suspected, a company's share price will often trade well below what should be the real economic value of the enterprise. Without good corporate governance, both corporate performance and the investor's money may be at risk. Good corporate governance (i.e., a high governance rating) leads to higher firm valuations, hence, investors are willing to pay a premium, and bad corporate governance (i.e., a low governance rating) is punished in terms of valuation discounts.

Corporate Governance for Competitive Advantages

Clearly, the level of corporate governance suggested goes beyond what is currently required by statutes and regulators. A reasonable question to ask then is: "What does a company stand to gain through enhanced level of corporate governance?" Research indicates numerous benefits, including:

1. A better managed company
2. Increased management credibility
3. More long-term investors
4. Greater analyst following
5. Improved access to, and lower cost of, capital
6. The realization of a company's true underlying value

Good corporate governance is a key driver of sustainable corporate growth and long term value creation. Corporate governance has come to be viewed as a differentiator among firms as good governance practices provide a higher market valuation and sustainable competitive advantage. Corporate governance structure is a core feature of an effective framework for competition. Many countries see better corporate governance practices as a way to improve economic dynamism and thus enhance overall economic performance. Michael Porter attributed the success of the Japanese and German economies to their systems of corporate governance.

Why Corporate Governance Matters

The business-corporation is an increasingly important engine for wealth creation worldwide, and how companies are run will influence welfare in society as a whole. In order to serve this wealth creating function, companies must operate within a framework that keeps them focused on their objectives and accountable for their actions. That is to say, they need to establish adequate and credible corporate governance arrangements. To remain competitive in a changing world, corporations must innovate and adapt their corporate governance practices so that they can meet new demands and grasp new opportunities. Better corporate governance increases the likelihood that the enterprises will satisfy the legitimate claims of all stakeholders and fulfil their economic, environmental and social responsibilities and contribute to sustainable growth.

Governance mechanisms that provide independent monitoring of management promote effective managerial decision making that increases firm value (e.g., investing in positive NPV projects) and guard against opportunistic management behaviour that decreases firm value. Good governance should translate into improved performance. Companies that have a higher score on corporate governance index also enjoy higher price-to-book ratios. Good corporate governance reduces the agency costs brought about by the separation of ownership and control, e.g., it allows investors to spend less time and resources on monitoring management teams. Furthermore, governance mechanisms that result in more transparent financial information and more public disclosure of private information reduce information risk faced by shareholders resulting in an increase in firm value.

Investors are increasingly willing to pay a premium for well-governed companies that adhere to good board practices, provide for information disclosure and financial transparency, and respect shareholder rights. Corporate governance structures serve to ensure that minority shareholders receive reliable information about the value of firms and that a company's managers and large shareholders do not cheat them out of the value of their investments. It also serves to motivate managers to maximize firm value instead of pursuing personal objectives. An effective system of governance practices should ensure compliance with applicable laws, standards, rules, rights, and duties of all interested parties, and further, should allow companies to avoid costly litigation, including those costs related to shareholder claims and other disputes resulting from fraud, conflicts of interest, corruption and bribery, and insider trading. A good system of corporate governance will facilitate the resolution of corporate conflicts between minority and controlling shareholders, executives and shareholders, and between shareholders and stakeholders. Also, company officers will be able to minimize the risk of personal liability.

Corporate Governance: Impact on Tobin's Q

Corporate governance rating is positively associated with financial performance measures like Tobin's Q. (Tobin's Q is explained in Annexure-I). Companies have long known that good governance generates investor goodwill and confidence. Now there is even more reason for them to improve their governance practices. Numerous recent studies emanating from academic circles show that good corporate governance increases valuations and boosts the bottom line. A study by Gompers, Ishii, and Metrick (2003) found that companies with strong shareholder rights yielded annual returns that were 8.5 % greater than those with weak rights. The more democratic firms also enjoyed higher valuations, higher profits, higher sales growth, and lower capital expenditures. Study also drew a strong correlation between corporate governance and financial valuations. The study found the valuation of companies with strong shareholder rights as measured by Tobin's Q –the ratio of market value to book value of assets - to be 56 % points higher than those with weak shareholder rights.

Benefits of Good Corporate Governance

Following are major benefits of good corporate governance system.

Building a Better Reputation

In today's business environment, reputation has become a key element of a company's goodwill. A company's reputation and image effectively constitute an integral, if intangible, part of its assets. Good corporate governance practices contribute to and improve a company's reputation. Thus, those companies that respect the rights of shareholders and creditors, and ensure financial transparency and accountability, will be regarded as being an ardent advocate of investors' interests. As a result, such companies will enjoy more public confidence and goodwill. This public confidence and goodwill can lead to higher trust in the company and its products, which in turn may lead to higher sales and, ultimately, profits. Goodwill in accounting terms is the amount that the purchase price exceeds the fair value of the acquired company's assets. It is the premium one company pays to buy another. A company's positive image or goodwill is moreover known to play a significant role in the valuation of a company.

Higher Credit Rating

Research study by professor of University of Wisconsin –Madison (2004) investigated whether firms that exhibit strong governance benefit from higher credit ratings relative to firms with weaker governance. It was found from the study that firm credit ratings are positively related to the degree of financial transparency. To structure the analysis of the effects of corporate governance on firms'credit ratings, the study adopted the framework developed by Standard and Poor's for rating firms' corporate governance structure and practices (Standard & Poor's 2002). Standard and Poor's (S&P) developed a Corporate Governance Scoring (CGS) system, which was rolled out in July 2002. The S&P Corporate Governance Scoring system focuses on four major components:

1. Ownership Structure and Influence
2. Financial Stakeholder Rights and Relations
3. Financial Transparency and Information Disclosure

4. Board Structure and Processes

CGSs are based on over one hundred standardized questions designed to measure the quality or strength of a firm's over-all corporate governance mechanisms and structure.

Mitigation of Risks: Strong Corporate Boards Control Risk More Effectively

Boards which are empowered by a strong corporate governance system have a greater ability to be aware of, and therefore better control, the various risks facing the business. For example:

1. High levels of transparency reduce the risk of fraud or theft due to the increased accountability and likelihood that fraud or theft will be discovered;

2. Clear procedures and responsibilities for important decisions help ensure that major decisions are made on a well informed and objective basis;

3. Strong corporate governance standards help ensure that the company is acting in the best interests of shareholders.

Higher Valuations Premium

Research is increasingly showing that good corporate governance can lead to improved share price performance. Following are different studies on valuations.

McKinsey studies on valuation premiums

Institutional investors regard good corporate governance as an important criterion when making investment decisions. McKinsey & Company recently conducted a survey of institutional investors around the world, on the importance they placed on good corporate governance. McKinsey survey findings included:

1. A large percentage of institutional investors considered the issue of corporate governance as equally or more important as a company's financial performance when making an investment decision.

2. The survey also found that 60 % of institutional investors will avoid investing in companies with poor corporate governance standards.

3. A significant majority of institutional investors are willing to pay a premium for shares in companies with good corporate governance standards.

In another survey conducted by McKinsey & Company, the researchers found that companies implementing good corporate governance practices would typically generate a 10-12 % increase in their valuations as a result of those practices. This result was based on data from 188 firms in 6 emerging markets (India, Malaysia, Mexico, Taiwan, Turkey and South Korea), which tested the relationship between market valuation and corporate governance practices of these companies in 2001.

World Bank study on valuation premiums

World Bank study stated that a high correlation exists between corporate governance and both a company's operating performance and its market valuation. Specifically, a one standard deviation change in corporate governance practices resulted in an average increase of 23 %s in the company's valuation. They concluded that investors are willing to pay a premium for companies with good corporate governance practices, because the risks are lower for those companies.

CLSA study on valuation premiums

A 2001 survey by Credit Lyonnais Securities Asia (CLSA) on 495 companies in 25 emerging markets indicated that shares of companies with high corporate governance standards have enjoyed higher Price/Book (P/B) valuations. Specifically, companies within the top quartile for corporate governance standards enjoyed an average P/B valuation that was 54 %s above the market average. In contrast, companies within the lowest quartile for corporate governance practices had average P/B ratios that were 43% below the market average.

Mitigation of Risks: Reducing the Non-Diversifiable Risk

Corporate governance can reduce the non-diversifiable expropriation risk by corporate insiders. The literature suggests that the degree of expropriation by corporate insiders depends on the investment opportunity and the cost of expropriation, among others. A firm's investment opportunity has a non-diversifiable component that depends on macroeconomic conditions. As a result, expropriation by insiders also has a component that is related to the market condition and is not diversifiable. Specifically, insiders are expected to expropriate more when the market is bad, and less when the market is good (e.g., Johnson et al. 2000 and Durnev and Kim 2003). This negative relation between expropriation and the market condition can magnify the firm's systematic risk, which must be compensated with a higher required rate of return. By imposing a higher cost on expropriation, better corporate governance can reduce the relation between the degree of expropriation and the market condition.

Improving Performance and Improving Operational Efficiency

Equally important and, irrespective of the need to access capital, good corporate governance brings better performance. Improved governance structures and processes help insure quality decision making, encourage effective succession planning for senior management and enhance the long-term prosperity of companies, independent of the type of company and its sources of finance. There are several ways in which good corporate governance can improve performance and operational efficiency. Improvement in the company's governance practices leads to an improvement in the accountability system, minimizing the risk of fraud or self-dealing by the company's officers. Accountable behavior, combined with effective risk management and internal controls, can bring potential problems to the forefront before a full-blown crisis occurs. Corporate governance improves the management and oversight of executive performance, for example by linking executive remuneration to the company's financial results. This creates favorable conditions not only for planning the smooth succession and continuity of the company's executives, but also for sustaining the company's long-term development.

Adherence to good corporate governance standards also helps to improve the decision-making process within and between a company's governing bodies, and should thus enhance the efficiency of the financial and business operations. For example, managers, directors and shareholders are all likely to make more informed, quicker and better decisions when the company's governance structure allows them to clearly understand their respective roles and responsibilities, as well as when communication processes are regulated in an effective manner. This, in turn, should significantly enhance the efficiency of the financial and business operations of the company at all levels. Better corporate governance also leads to an improvement in the accountability system, minimizing the risk of fraud or self- dealing by company officers. High quality corporate governance streamlines all the company's business processes, and this leads to better operating performance and lower capital expenditures, which, in turn, may contribute to the growth of sales and profits with a simultaneous decrease in capital expenditures and requirements.

Mitigation of Risks: Reducing Investment Risk

Improving the corporate governance and communicating the quality of governance to markets bring an increase in the market valuation of companies and attract more investors.

Capital Efficiency: Return on Capital Employed

A 2001 survey by Credit Lyonnais Securities Asia (CLSA) on 495 companies in 25 emerging markets found that the average Return on Capital Employed (ROCE) for the 100 largest emerging markets stocks was 23.5% in 2000. However, the companies in the top quartile of corporate governance standards had an ROCE of 33.8% while the companies in the bottom half of corporate governance standards had an ROCE of 16%. This may demonstrate that companies with high corporate governance standards are the most likely to make decisions and implement controls which generate the highest possible return on the shareholder's capital.

Lowering the Company's Cost of Capital and Raising the Value of Assets

There is a negative relation between corporate governance and the cost of equity on several dimensions. In a nutshell, with adequate disclosure and transparency standards in place, it is ultimately the capital market which rewards good governance practices and punishes bad ones.

Companies committed to high standards of corporate governance are typically successful in obtaining reduced costs when incurring debt and financing for operations, and in this way, they are able to decrease their cost of capital. The cost of capital depends upon the level of risk assigned to the company by investors: the higher the risk, the higher the cost of capital. These risks include the risk of violations of investor rights. If investor rights are adequately protected, the cost of equity and debt capital may decrease. It should be noted that investors providing debt capital, i.e. creditors, have recently tended to include a company's corporate governance practices (for example transparent ownership structure and appropriate financial reporting) as a key criterion in their investment decision making process. Thus, the implementation of a good corporate governance system should ultimately result in the company paying lower interest rates and receiving longer maturity on loans and credits.

Better corporate governance lowers the cost of equity by reducing the cost of external monitoring by outside investors. Lombardo and Pagano (2000) postulated that investors have to incur external monitoring costs to ensure a given amount of payoffs from the management. This monitoring cost is compensated by a higher required rate of return. Thus, outside investors demand a lower required rate of return from firms with better corporate governance because they can spend less time and resources to monitor the management. Corporate governance also reduces the cost of equity by limiting opportunistic insider trading and thus reducing information asymmetry. Hung and Trezevant (2003) found that better corporate governance is associated with less insider trading.

Using data from 604 firm-year observations over 17 economies covered by two recent corporate governance surveys by Credit Lyonnais Securities Asia (CLSA), Finance and Accounting professors of Hong Kong University of Science and Technology investigated the effects of firm-level disclosure and corporate governance quality on the cost of equity. They found strong evidence that the quality of a firm's corporate governance is systematically negatively associated with the cost of equity, after controlling for beta, size, book-to-market, momentum, analysts forecast bias, inflation, and fixed effects of country, year, and industry. Results indicated that, on average, an improvement in the measurement of aggregate firm-level corporate governance from the 25th percentile to the 75th percentile was associated with a reduction of 1.5% in the cost of equity.

Improving Access to Capital Markets

Corporate governance becomes important when a company seeks outside investment. Regardless of where a company does fund raising, be it through the capital markets or a specific institutional investor, the company must pay attention to the investor's standard of sound corporate governance. A company must prove that they are managed to the investor's standards before being granted capital. Good corporate governance is an important step in building market confidence and encouraging more stable, long-term international investment flows.

Corporate governance practices can determine the ease with which companies are able to access capital markets. Well-governed firms are perceived as investor friendly providing greater confidence in their ability to generate returns without violating shareholder rights. Good corporate governance is based on the principles of transparency, accessibility, efficiency, timeliness, completeness, and accuracy of information at all levels. With the enhancement of transparency in a company, investors benefit from being provided with an opportunity to gain insight into the company's business operations and financial data. Even if the information disclosed by the company is negative, shareholders will benefit from the decreased risk of uncertainty. The better the corporate governance structure and practices, the more likely that assets are being used in the interest of shareholders and not being tunneled or otherwise misused by managers.

The Cost of Corporate Governance

Good governance entails real costs. Some of the costs include hiring dedicated staff such as corporate secretaries, experienced and independent directors, internal auditors, or other governance specialists. It will likely require the payment of fees to external counsel, auditors, and consultants. The costs of additional disclosure can be significant as well. Furthermore, it requires considerable managerial and Supervisory Board time, especially in the start-up phase. These costs tend to make implementation considerably easier for larger companies that may have the resources to spare than smaller companies whose resources may be stretched quite thin. A company will not always see instant improvements to its performance due to better corporate governance practices. However, returns, while sometimes difficult to quantify, generally exceed the costs in particular over the long term. This is especially true when one takes into account potential risks of losses in jobs, pensions, invested capital and the disruption that may be caused to communities when companies collapse. In some cases, systemic governance problems may undermine faith in the financial markets and threaten market stability.

Conclusion

Corporate governance presents opportunities to manage risks and add value. Views of corporate governance are shifting from mere obligation and compliance with norms, laws and listing standards, to a business imperative for many companies. Integrating corporate governance into the strategy has become a competitive necessity. While no single universal model of corporate governance exists nor is there a static, final structure in corporate governance that every country or enterprise should emulate, transparency and disclosure are key attributes of any model of good corporate governance. The corporate governance ratings systems and surveys of investor opinion all include disclosure and transparency as core attributes of good corporate governance.

The purpose of corporate governance is to achieve a responsible, value oriented management and control of companies. Corporate governance rules promote and reinforce the confidence of current and future shareholders, lenders, employees, business partners and the general public in national and international markets. Corporate governance has evolved and grown significantly in the last decade. Numerous countries have issued corporate governance codes, and the recommendations of these codes, that typify "good" corporate governance, undoubtedly contribute towards increased transparency and disclosure. There are good reasons to believe that adequate legal protection and prosecution capabilities are essential for effective corporate governance. However, corporate governance also matters from an asset pricing perspective. By striving for better governance, firms are able to reduce their cost of capital, mitigate risk, enhance investors' confidence and enhance corporate valuation.

Author: Dr. Pankaj M. Madhani
ICFAI Business School

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ACCOUNTING FOR VALUE CREATION AND ENCOURAGING THE RISE OF THE CHIEF VALUE OFFICER

Accounting is a time-tested discipline. It's been around since Luca Pacioli invented double entry bookkeeping over five centuries ago. It is the means to capture the monetary value that has been realized through transactions. For the better half of the last millennia, accounting has been the language of business, governments, trade and capital markets.

Accounting for value creation needs rethinking. Value is created through knowledge and creativity. Digital disruption is threatening entire industries. Financial markets are fraught with geopolitical and economic volatility. The deepening climate emergency, and other environmental issues such as water and land use, mean that business as usual is not an option.

In this world, achieving a resilient and sustainable business model has never been more challenging. Viewing value creation only through the lens of shareholders means undermining trust in the organization, compromising its reputation, and even threatening its license to operate. A broader set of data, information and insights is needed to provide a bigger picture of how value is created. (For more, visit IFAC's Point of View on enhancing corporate reporting).

This is a significant challenge for organizations and their stakeholders. For the accounting profession, it represents a unique opportunity.

The Rise of the Chief Value Officer

In contrast to financial reporting, integrated reporting provides a broader foundation for accounting for value creation. It enables greater corporate accountability, communication, and transparency. It allows the organization to better understand and communicate value creation.

Importantly, we know that adopting integrated reporting enables an organization to think in an integrated way, which leads to better business outcomes. Too often, information is siloed, and decisions are made without complete knowledge or context for their ramifications. The more that this integrated thinking is embedded into an organization's activities, the better the connectivity of information flow into management reporting, analysis, and decision-making.

Integrated thinking requires the Chief Financial Officer (CFO) and their finance team to move from accounting for the balance sheet to accounting for the business and value creation. As Mervyn King, Chair Emeritus of the International Integrated Reporting Council put it, "the CFO should be known as the CVO – chief value officer." She or he must be a change-maker inside the company.

The CVO role must ensure that all relevant aspects of value creation and destruction are accounted for and communicated to boards, management, and external stakeholders. To achieve this, the CVO will require deep knowledge and insights about the business to inform discussions on purpose, values and strategy, risks and opportunities, the business model, and relevant resources or capitals that the business depends on or affects.

It will require that material information on value creation is reliable, relevant, and comparable, whether it is derived from financial statements (i.e., "non-GAAP" or "non-IFRS" measures), key performance indicators, or other information related to value creation, such as intellectual capital, sustainability, or environmental, social, and governance factors. Much of this information is generated outside of the business.

Developing a Framework for Integrated Value Creation

We are determined to support the evolution of CFOs to CVOs, if not in name, at least in mind set. To support the role of chief value officer, IFAC, the IIRC and AICPA/CIMA are developing an integrated value creation approach that guides CFOs as they focus on the information, decisions, and trade-offs that matter to the organization and its potential to create long-term value.

The International Standards Organization (ISO) 37000 project "Guidance for the Governance of Organizations" has already incorporated this value creation framework as a distinct part of its work.

The integrated framework has four dimensions to create and communicate value:

1. ***Defining value.*** How value is *defined* is framed by an organization's purpose, values, strategy and measures of success. Value itself, as well as priorities for value creation, are defined in the context of meaningful engagement with material stakeholder groups, including customers, investors, employees, suppliers, regulators and others. It is also influenced by the opportunities and threats facing the business. Defining value involves establishing and prioritizing stakeholders, understanding how they are relevant to the organization's purpose and strategy, and assessing how to balance their respective needs and expectations.

Insights on stakeholder value inform strategy, goals, metrics, and incentives. Value created needs to be measured and tracked by integrated financial and non-financial value aligned performance and risk metrics. Incentives should then be aligned to drive behaviors in line with purpose, strategy and values.

2. ***Creating value.*** How value is *created* involves the organization's strategy and business model, which need to take into account all resources and capitals in an integrated way. Ensuring that value is created over time involves significant decisions on where the business competes (e.g., markets, geography, segments), identifying the principal opportunities and risks related to the business model, ensuring products and services meet customer needs and respond to societal challenges, and collaborating with critical partners in value creation.

   Value is created and sustained through strategic choices and investments in the resources and relationships that lead to, or enhance, strategic and competitive capabilities and assets. These assets include people, innovation, infrastructure, brand and intellectual property, etc.

   In capital allocation, the priorities and perspectives of different stakeholders might be misaligned. For example, investors might have a preference for the short-term deployment of capital, whereas the board might have a preference for long-term projects. Consequently, it is important to understand and communicate how short-term expectations from different stakeholders might influence long-term choices and prospects. This provides the basis for communicating how short- and long-term and trade-offs are managed.

3. ***Delivering value.*** How value is *delivered* to customers, governments, and society through responsible products, services, and channels to market. This involves leveraging technology, data, and intangible assets to deliver value in new and more effective ways. It also requires delivering value at an appropriate price, cost, and level of performance. Delivering value requires integrated and relevant strategic,

operational, and risk information that takes into account the changing external environment and ensures that performance is aligned to value creation objectives.

4. ***Sustaining value.*** How value is *sustained* by retaining value internally in the organization and distributing value externally to shareholders and stakeholders. Capturing value distribution, outcomes, and impacts in a transparent manner enhances accountability.

   Value delivered to shareholders, whether through dividends or other financial returns, may satisfy their needs in the short-term. But, if that value is being created at the expense of others and the environment, the company will fail quickly. The company needs to have sufficient resources to be both resilient and adaptable over the long term.

   The factors to consider when sharing value with material stakeholders include ongoing priorities for use of cash (e.g., dividend policy, returns to shareholders and capex), tax strategy, desired capital structure, remuneration and benefits for employees, and social (e.g., job creation) and environmental (e.g., enhancing nature) outcomes.

This value creation framework aims to move the corporate mindset from short-term share value to long-term value creation. We intend to develop guiding questions for each dimension to guide CFOs and their finance teams as they focus on understanding and communicating value.

Creating and preserving value over time is at the heart of business success. Maximizing long-term cash flows requires responsibly managing relationships with key stakeholders. A company with a comprehensive, well-defined, and sustainable perspective on value creation will have stronger relationships and greater trust with all its key stakeholders. This must be the agenda of the chief value officer and CFO of the future.

Author(s):
Kevin Dancey
Chief Executive Officer, IFAC

Charles Tilley
Interim CEO, International Integrated Reporting Council (IIRC).

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MSMES: ENGINES TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS

Key Message:

- India's targets to achieve Sustainable Development Goals and NDC targets may not be possible if it doesn't amend the trends of jobless growth and serious concerns of environmental degradation.
- It is estimated that, in order to streamline the current alarming job situation, India will need to add 15 million new jobs annually for the next 15 years (Bhattacharya, A. and Bijapurkar, A 2017) India also has a long way to go before it achieves basic living standards for all. India has 20.6 per cent share of world's poorest in 2011 (Donnan, 2014). India stands low on rank 135 among 187 countries on the Human Development Index with 58% of the population lacking means to meet essential needs. A growing population and increasing urbanisation have led to a huge increase in consumption demands. This poses a serious threat to the sustainability of this impressive economic growth.
- MSMEs are seen as an important opportunity in the times when policies like Make in India and Startup India are promoting manufacturing and young entrepreneurship in India. It is critical to focus on medium and small enterprises, especially rural social enterprises – as an agent for local economic development. Opportunities lie in exploring how India's policies on Make in India are incentivizing local green enterprises.

Context

India has experienced a steady growth path in the last few years. The recent government estimates indicate that the real Gross Domestic Product (GDP) grew at a rate of 7.1% in 2016-17 over 2015- 16. (MOSPI, 2017) Much of this growth is attributed to the progress by the industrial sectors such as manufacturing, construction, transportation, communication, utility services, etc., growing at a steady rate. Although rapid economic growth has brought huge benefits to India, it has had a detrimental effect on the country's environment and social frames, exposing urban centres to serious pollution related concerns and rising inequalities arising due to the jobless scenario.

The growing sectors, mainly secondary and tertiary, failed to provide employment to the relatively larger share of workforce, unlike the agricultural sector. Moreover, the GHG emissions accompanying India's fast paced growth pose a significant threat to India's climate change mitigation target of reducing emission intensity of GDP by 33-35% by 2030, as compared to 2005 levels. In addition, because of increased resource and energy consumption, this has also put a burden on India's natural resource base and energy requirements. The situation, thus, warrants the need for adopting greener and fairer practices for development.

MSMEs in India: Scope in the Economy

According to FICCI's estimates, within the manufacturing sector, Micro, Small and Medium Enterprises (MSME) sector accounts for about 45% of manufacturing output, 95% of the industrial units and 40% of exports. Besides, the sector provides employment to almost 60 million people, mostly in the rural areas of the country, making it the largest source of employment after the agriculture sector. Development of this sector,

thus, holds key to inclusive growth and plays a critical role in India's future. All these parameters contribute towards the potential of the sector to be an alternative source of livelihood for the masses and thereby contributing to the country's GDP.

Trends: Indian Economy & sustainability

- According to the labour ministry's 27th Quarterly Employment Survey, there were 43,000 job losses in the first quarter of FY 2015-2016. "**The economy is generating fewer jobs per unit of GDP**," says D.K. Joshi, chief economist at ratings and research firm Crisil. Illustratively, in manufacturing, if 11 people were needed to execute a piece of work that generated INR 1 million worth of industrial GDP a decade ago, today only six are needed. "The economy has become less labour-absorbent."

- A large part of India's growth can be attributed to the **growth of ICT sector**. The sector was predominantly driven by software services; however, most upcoming Indian start-ups in the ICT sector are product-based companies. Although an emerging concept, in this new era smart devices assume major control over manufacturing and distribution functions in economy. This has distorted various tradition economic sectors – agriculture, tourism, transport and services.

- **Goods and Services Tax (GST)** is the new unified tax regime introduced in the country. Local stakeholders have voiced against the implementation of GST, calling it as an act that will put rural enterprise in further distress. Lokavidya Jan Andolan, a civil society platforms says - "Industrial (large scale) producers and service-providers will obviously benefit from this 'no-boundaries' market system; where buying and selling has been freed from the 'limitations and vagaries of localities and geographies'. Small producers /service-providers have been forced to participate in this market system, most often on very adverse terms of trade. We demand for no-tax/zero-tax on handmade produce and services (which permits for inclusion in the all-India market system), arises from this situation."

Trends in MSMEs Sector

- Most of the MSMEs still prefer to undertake renovation and modernizations from either fund generated internally or borrow from informal financing channels. As per the statistics compiled in the fourth census of MSME sector for registered units (April 2011) only about 11.7 per cent of MSMEs availed finance from institutional sources and about 1 per cent had taken finance from non-institutional sources.

- A recent report by the National Skill Development Council of India forecasts that there could be an incremental shortfall of 240 million to 250 million people by 2022 in 20 high growth sectors of the Indian economy and in the unorganised segment. Over 13 million people are required every year in 90 skill categories. So, while 12.8 million youth enter the job market every year the annual current capacity for vocational training in India is just around 4.3 million. A mere 2% of Indian workers are formally skilled. In the current situation, MSMEs as the biggest generators of employment in the country, it is necessary to reduce skill gaps amongst MSMEs to promote the concept of inclusive growth. (CII, 2011) This gap in skills is corroborated by the ADB study. More than 85% of innovative small and medium firms see unavailability of skilled workers as a barrier to innovation, making it one of the foremost challenges in SME innovation. (Pachouri & Sharma, 2016)

- Timely access to valuable information is critical for SMEs to gain strategic advantage in pursuing innovation. The information barriers refer to access to information on technology and markets. More than 75% of the innovative small firms and 86% of the medium firms face barriers pertaining to technology information and information on markets in India. (Pachouri & Sharma, 2016)

State of MSMEs – Macro Perspective:

India is still ranked 130th globally in the World Bank's ease of doing business index for 2015, which reflects the burdensome regulatory environment in which SMEs operate. The high costs involved in meeting a large number of regulatory requirements tend to negatively affect the innovation capacity of the firms. The Government of India looks at small and medium enterprises (SMEs) under the Micro, Small and Medium Enterprises Development Act 2006, which seeks to develop and enhance the competitiveness of MSMEs as a whole. In the act, for the first time the concept of "enterprise" include both manufacturing and services firms. Also described in the act for the first time is the concept of "medium" enterprises. The MSME ecosystem is administered through the Ministry of Micro, Small and Medium Enterprises, which has, broadly speaking, two major divisions. These include the Small and Medium Enterprises division and the Agro and Rural Industries division.

Available data from the Fourth All India Census of MSME in 2006-07, indicate that around 60 % of these enterprises are based in rural areas of the country and 45% of total manufacturing output is contributed by the MSME sector. The share of MSME sector in the total exports of India is about 40%. (Das, 2017)

MSMEs in India: What's in the definition?

The recent announcement by Ministry of MSMEs revised the definition of MSMEs in India. It now classifies MSMEs on the basis of their annual turnover; as against the earlier classification based on investment in plant and machinery for goods companies; and in equipment for services firms. It is of great importance that MSMEs are distinguished from other firms so that the economy can accurately target policy interventions to address the special needs or disadvantages or a special contribution to the economy of such MSMEs.

Keeping this in mind, let us compare the recent definition of MSMEs by Government of India with the standard definition used by International Finance Corporation (IFC)1 (IEG: World Bank, IFC and MIGA, 2012)and European Commission (EC)1 (Berisha & Pula, 2015) (Refer Table 1

TABLE 1: Definition of MSMEs – A Comparison

MSMEs	Micro	Small	Medium
Annual Turnover (new definition)	Less/equal to INR 50 million	INR 50 million – INR 750 million	INR 750 million – INR 2.5 billion
Annual Turnover* (IFC definition)	Less/equal to INR 6.5 million	INR 6.5 million – INR 195 million	INR 195 million – INR 975 million
Annual Turnover# (EC Definition)	Less/equal to INR 160 million	INR 160 million – INR 800 million	INR 800 million – INR 4 billion

*1 Dollar = 65 INR #1 Euro = 80 INR

The new definition is definitely a step forward towards using criteria more commonly used globally to define MSMEs – Annual Turnover. However, diving deeper, two observations can be made. **First**, the definition of each category (Micro, small and medium enterprise) of new Indian definition is too broad compared to the IFC global definition. This is especially true for the case of micro enterprise. Policy and market support systems for micro enterprises are particularly different and it is critical that category of micro enterprises are not shadowed by 'bigger' enterprises. **Second**, most of the countries and international bodies like IFC, EC, World Bank, uses number of employees as one of the core criteria to define MSMEs. A third of the 132 economies studied by World Bank and IFC in 2010, defines MSMEs as ones having up to 250 employees. (Kushnir, Mirmulstein, & Ramalho, 2010) It is of critical importance for India to consider these concerns in the new definition of the MSMEs, for ensuring better targeting of enterprises at the bottom of the pyramid.

MSMEs: Engines to achieve Sustainable Development Goals – How?

Bold new approaches are needed to meet the global challenge of overcoming poverty and achieving the Sustainable Development Goals in the face of growing threats from ecosystem decline and climate change. There are many cases from across India that corroborates the role of MSMEs in providing poverty and environment solutions while building a resilient economy.

Local economic development results in more jobs being created, particularly benefiting the poor

MSMEs in India provide employment to almost 60 million people, mostly in the rural areas of the country, making it the largest source of employment after the agriculture sector. As a contribution to the economy and development, MSMEs ***develop economies at the local level***– especially providing job and livelihood opportunity to the lower economic strata of the society. In this way, it plays a major role in including the poor and the marginalized in the mainstream development model. MSMEs also bring ***value addition*** at the local level, unlike big businesses, where most of the value addition is at the end of the value chain; thus building the value of shared prosperity in practice; and enabler to address inequities. In this way, MSMEs directly contribute to various socio economic SDGs like SDG 1 (No poverty), SDG 8 (Jobs and growth), and SDG 10 (Reduce inequalities). By developing basic needs service delivery models in rural areas, MSMEs have the potential to contribute to SDG 6 (Water for all), SDG 7 (Energy for all), amongst others.

Dharani Farmers Producer Company and Sittilingi Organic Farmers Association, through local value addition of organic agriculture produce, are able to provide direct income benefits to the small holder farmers and marginalized communities in southern India.

MSMEs bring diversity of business and risks; and thus strengthen resilience of the economy

Micro, Small and Medium Enterprises (MSME) sector accounts for about 45% of manufacturing output, 95% of the industrial units and 40% of exports. What is more important is that Micro, small and medium enterprises (MSMEs) have demonstrated considerable strength and resilience in maintaining a consistent rate of growth and employment generation during the global recession and economic slowdown. ***Clusters of small businesses*** build more diverse economic model versus big businesses. This is critical in building resilience of the system.

Crafts and handicraft sector has suffered losses in its economy, with the advent of industrialization.

Traditional crafts have largely been marginalised by mass-produced machine-made consumer goods, which tend to be cheaper due to the economies of scale associated with mechanisation. In such a time, entrepreneurial initiatives like Dastkar, Saathi Samaj Sevi Sanstha, Mithan Handicraft Development Private Limited are playing a critical role in sustaining the sector and the livelihood of the people, mostly poor and marginalized, associated with the handicraft sector.

Environmentally conscious MSMEs ensure green and inclusive economic development MSMEs are usually depended on the ***locally endowed natural resources*** and are therefore environmentally conscious. The ownership of the natural resources is high in local green enterprises; as the communities are dependent on the resource for their sustenance and livelihood. So, the design of the MSMEs impacts various ecological SDGs – SDG 13 (Combat climate change), SDG 14 (Water ecosystems) and SDG 15 (Terrestrial ecosystems). Various innovations in MSMEs can show the path to achieve SDG 12 (Sustainable Consumption and Production).

Rising waste generation is one of major environmental and social concern. Some MSMEs have seen this as an economic opportunity. Daily Dump has innovated a business model for composting of solid waste at the household level; while Green the Gap is using waste to make marketable products.

Union Budget 2018 and the Gain-Pain Points for Green MSMEs

The Union Budget 2018 extended sops to MSMEs, with the cut of corporate tax rate to 25% for companies with annual turnover of up to INR 2.5 billion as one of the major highlights. Some other key announcements include:

Credit and incubation support

- INR 3 trillion (2018-19) under *Pradhan Mantri Mudra Yojana* or Mudra scheme.[1] (Bhaskar, 2018)[1]
- Allocation under Prime Minister Employment Generation Programme has gone up from INR 10.24 billion (2017-18) to INR 18 billion (2018-19) for generating *self-employment* opportunities through establishment of about 88,000 micro enterprises in the non-farm sector.

Technology upgradation

- Allocation for *National Manufacturing Competitiveness Program* has gone up from INR 5.06 billion (2017-18) to INR 10.06 billion (2018-19).

Sectoral incentives: (Press Information Bureau, 2018)

- Allocation under *Khadi Grant* has been enhanced significantly from INR 2.65 billion (2017-18) INR 4.15 billion (2018-19).
- Under *Scheme for Fund for Regeneration of Traditional Industries (SFURTI)*, the budgetary allocation has increased from INR 100 million (2017-18) INR 1.25 billion (2018-19). This will give an unprecedented boost to employment generation in the traditional and rural industries.
- The allocation under *ASPIRE (A Scheme for Promotion of Innovation, Rural Industry and Entrepreneurship)* has been raised from INR 500 million (2017-18) to INR 2.32 billion (2018-19) with an aim to set up 100 livelihood business incubators and 20 technology business incubators.
- Textile, Bamboo, fisheries are some of the other sectors that have received special allocations.

Take Aways

The Union Budget 2018 is surely a big leap towards creating enabling ecosystem for MSMES in India, especially the tax cut and credit support initiatives of the government. However, for these MSMEs to contribute effectively in building a greener and inclusive economy and support India in achieving SDGs, some points need to be considered:

Rural entrepreneurship in the country provides triple benefits of poverty eradication, economic and livelihood resilience, and provision of (basic) goods and services to the rural population in the country. It is therefore very critical for Government of India to incentivize set up and sustenance of such local enterprises in rural India. Currently it holds a portfolio of INR 2.32 billion (ASPIRE) of the total INR 65 billion budget for MSMEs.

There is limited attention to the ***greening the MSMEs*** in the Union Budget 2018. MSMEs are one of the core engines to India economy and is projected to grow further in the coming decade. MSMEs, especially manufacturing sector enterprises are particularly resource intensive and emit high quantum of pollution and carbon emissions. For India to fulfill her international commitments (Nationally Determined Contributions, Sustainable Development Goals), it is of high importance to invest in greening the current MSMEs and promoting green MSMEs in future. For this, India needs to focus on technology and market innovations on one hand. On the other hand, India needs to identify economic sectors where there is a huge need and a high

[1] *The MUDRA scheme was founded with the motto of "funding the unfunded" by extending financial support, including refinancing, to the micro segment of the economy.*

potential to set up MSMEs. Some such upcoming sectors include Waste, eco-tourism, decentralized renewable energy, organic agriculture based enterprises.

About Development Alternatives Group www.devalt.org

Development Alternatives (DA) is a premier social enterprise with a global presence in the fields of green economic development, social equity and environmental management. It is credited with numerous technology and delivery system innovations that help create sustainable livelihoods in the developing world. DA focuses on empowering communities through strengthening people's institutions and facilitating their access to basic needs; enabling economic opportunities through skill development for green jobs and enterprise creation; and promoting low carbon pathways for development through natural resource management models and clean technology solutions.

About Green Economy Coalition

The Green Economy Coalition (GEC) is the world's largest movement for green and fair economies. An alliance of more than 50 civil society organisations, trade unions, businesses and campaigners, the GEC takes a holistic, systems approach to tackling some of the biggest challenges of today: extreme poverty, climate change, biodiversity loss, rising inequality, and weak governance. The GEC believes that these issues cannot be tackled alone. They are symptoms of an economic system that is ill-equipped to respond to today's global challenges, and require systemic economic reform to address.

Source: https://www.devalt.org/images/L2_ProjectPdfs/MSME_Policy_Brief.pdf?Tid=178

This document is an outcome of a project titled, "Mainstreaming Green Economy" funded by "European Union", for the economic development, social empowerment and environment management of our society.

LIFE CYCLE ANALYSIS

As Jones et al. (2017:235) advocated, life cycle analysis (LCA) is a "technique used to assess potential impacts associated with a material or product through all its interlinked stages". Additionally, the aim of LCA is to evaluate the potential environmental impacts of "resource use and emissions or byproduct" (Jones et al. 2017:235) and subsequently a final assessment to interpret the results is conducted.

This analysis across the life cycle, provides a different perspective when making a decision about that product or service, the LCA process thus consider five steps: raw material acquisition or extraction; material processing; product manufacturing use; and recovery or retirement. Sometimes the transportation stage is also included in this process (Clark et al. 2011:565).

Moreover, LCA studies have been focused on the "quantification of energy and materials used and wastes released into the environment throughout the life cycle" (Cabeza et al. 2014:396). Therefore, to evaluate the sustainability of your Event throughout the Life Cycle Analysis, three aspects are proposed to be taken into consideration:

- ✓ **Impacts**: Any impacts of your event on the environment.
- ✓ **Scope**: Consider all life cycle stages for your event and the products that are used during the event.
- ✓ **Metrics**: Measurements from actual product or event life cycle, supported by data.

Source: https://sustainableeventguide.home.blog/2019/03/12/life-cycle-analysis/

ENVIRONMENTAL IMPACT ASSESSMENT - SUSTAINABLE EVENT GUIDE

As Everard et al. (2013:93) mentioned, the aim of an environmental impact assessment (EIA) is "to quantify and understand the effects a new development will have on its surroundings", which social and environmental aspects are included on the calculation. Additionally, EIA has the purpose of evaluating the effects or impacts of a project, which is "affecting the environment" (Jay et al.2007:287).

Moreover, this assessment is frequently used in local, regional and national events or other projects. Furthermore, EIA is a systematic method, which is taking into account potential impacts or consequences, that need to be approved and proceed in an acceptable manner before taking a decision. To continue this process, EIA "provides the mechanisms for development proposals to be amended where necessary" (Jay et al. 2007:288). Petts et al. (1999:4), underlined EIA as a simple and positive process, "as it allows for adaptive and flexible implementation to meet particular legislative, administrative, social and political circumstances".

The process, to assess the environmental impact of your Event, is divided into nine categories, representative of areas affecting the impact, which can have on the surrounding macro environment, which are the following: location; energy; water resources; catering; promotional giveaways; materials; internal travel; waste management; and participatory approach (Boggia et al.2017:838).

Tips to turn your Event more sustainable and reduce the environmental impact:

- ✓ **Location:** bicycle park facilities, save space that is used for the event, avoid structures that need removable plastic covers.
- ✓ **Energy**: venue powered by renewable energy, turn off appliances when not in use, fuel saving generators.
- ✓ **Water resources:** tap water for the a_endees to fill their own bo_les, constantly check if there is any leaking taps or appliances.
- ✓ **Catering**: vegetarian and vegan options, seasonal, organic and local catering, avoid single use of waste products.
- ✓ **Materials**: avoid plastic materials, such as straws, balloons, plastic bags, provide digital materials instead of paper materials.
- ✓ **Internal travel:** easy access by public transport, increase car sharing and travel on foot.
- ✓ **Waste management:** recycling facilities, reusable materials, donate food that has not been consumed, eco-friendly materials.

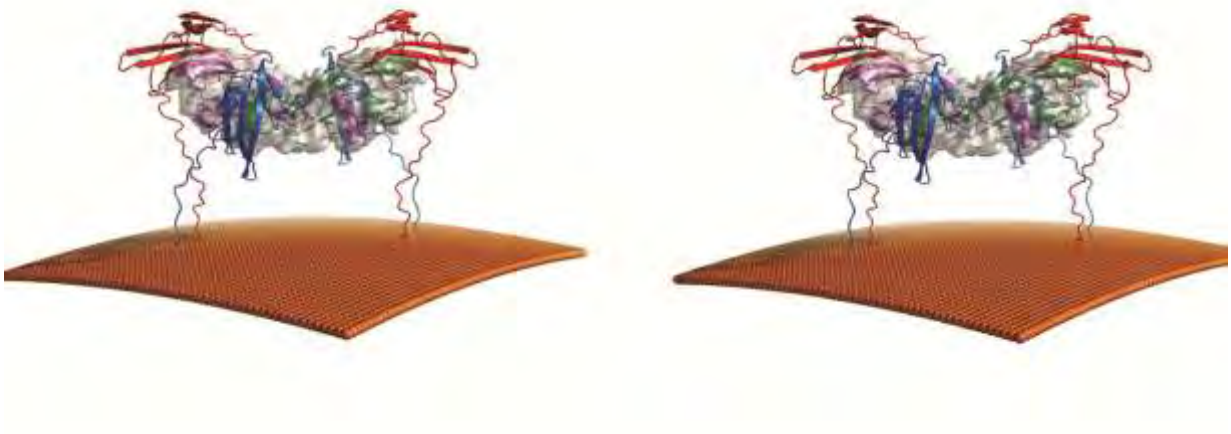
Source: https://sustainableeventguide.home.blog/2019/03/12/environmental-impact-assessment/ /

BIOPHYSICAL METHODS – SUSTAINABLE EVENT GUIDE

According to Gasparatos et al. (2007:6), the aim of biophysical models is to "quantify aspects of sustainable development through a natural science perspective". These quantifications do not depend on human preference, but on "biophysical parameters that can be precisely measured" (Gasparatos et al. 2007:7), which cannot quantify effects that have occurred on a festival site, for example transport or travel emissions. Additionally, the biophysical method cannot "account for the indirect impacts associated with resource consumption" (Collins & Cooper 2017:150), for instance the energy used.

Moreover, biophysical methods consider the amount of energy that has been spent to produce a product or service. Sulser et al. (2000:114), define the biophysical assessment as "well-established, technical, and instrument- or laboratory-based methods in environmental, soil, and water quality assays", which are usually assessed on long-term.

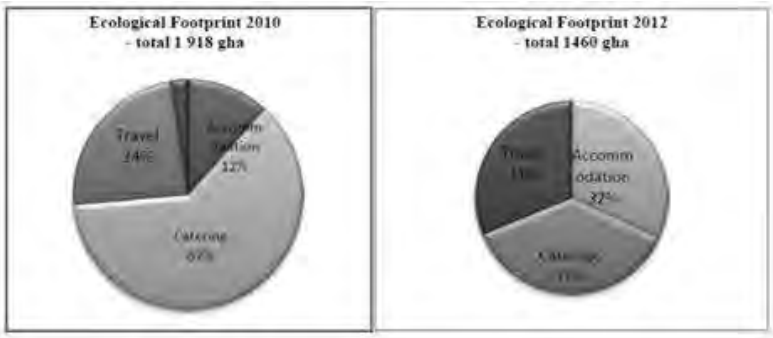
Source: https://sustainableeventguide.home.blog/2019/03/12/biophysical-methods-2/



ECOLOGICAL FOOTPRINT – SUSTAINABLE EVENT GUIDE

According to Jones and Jones (2014:179), ecological footprint is "the total equivalent biocapacity a material or a product needs to be created". Jones (2017), added that it is an excellent mean to measure the demand of humankind on nature. In other words, the ecological footprint analysis seeks to evaluate an event's sustainability by assessing its socio-economic impact on the environment based on a human being's needs, such as its methods of transportation or its food and drink consumption (Clifton 2010). The Ecological Footprint Analysis is calculated as follows: I=PAT, with I as the human impact on the environment, as function of P for population, A as affluence in terms of consumption/production per capita and T for technology which represents the ecological impact per unit of consumption/production (Pernecky & Lück 2013). The ecological footprint is expressed in global hectares per capita (ghpc or gha) (Kitzes 2007; Footprint Network 2010a).

Table 1: The ecological footprint of Way out West | Source: Way out West (2013)



	Energy Land	*Grazing Land*	*Cropland*	*Forest*	*Occupied Built-up land*	*TOTAL*
2010 - gha	832	380	465	1	240	1918
2012 - gha	662	93	465	0	240	1460
2010 - %	43%	20%	24%	0%	13%	100%
2012 - %	46%	6%	32%	0%	16%	100%

For instance, in 2010 the Swedish music festival Way out West determined their ecological footprint at 1 918 ghpc – the human average ecological footprint is 2.7 ghpc (Footprint Network 2010b) – and realised that food, meat in particular, was the principal environmental factor. They consequently decided to become a vegetarian event, to reduce their ecological footprint. Based on their study (see Table 1), in 2012 the ecological footprint of the festival was reduced by 23.9%, the catering impact from 62% to 37% and the footprint per visitor decreased from 0.073 to 0.05 ghpc, whilst the number of a□endees increased by 19% (Way out West 2013; Jones & Jones 2014). The Ecological Footprint Analysis may therefore be a an efficient measurement method toward a more sustainable event.

Source: https://sustainableeventguide.home.blog/2019/03/12/ecological-footprint/

SCIENTISTS CALL FOR URGENT, TARGETED ACTION TO AVOID REVERSING THE DEVELOPMENT GAINS OF RECENT DECADES

New relationship between people and nature is needed as climate change and biodiversity loss threaten progress

New York, 11 September—Achieving human well-being and eradicating poverty for all of the Earth's people—expected to number eight and a half billion by 2030—is still possible, but only if there is a fundamental—and urgent—change in the relationship between people and nature, and a significant reduction in social and gender inequalities between and inside countries, according to a new United Nations report by an independent group of scientists to be launched at the 2019 SDG Summit, but made available today.

The Report, requested by all countries to evaluate progress on the 2030 Sustainable Development Agenda, is the first of its kind since the landmark Sustainable Development Goals (SDGs) were adopted four years ago. Entitled "The Future is Now: Science for Achieving Sustainable Development," the report finds that the current development model is not sustainable, and the progress made in the last two decades is in danger of being reversed through worsening social inequalities and potentially irreversible declines in the natural environment that sustains us. The scientists concluded that a far more optimistic future is still attainable, but only by drastically changing development policies, incentives and actions.

The report argues that understanding the interconnections between the individual SDGs and the concrete systems that define society today will be essential to devise policies that manage difficult trade-offs.

A need to transform

Creating economic growth just by increasing consumption of material goods is no longer a viable option at the global level: Projections indicate that the global use of materials is set to almost double between 2017 and 2060, from 89 Gigatons to 167 Gigatons, with correspondingly increased levels of greenhouse gas emissions, and other toxic effects such as those from mining and other pollution sources.

The present model of development has delivered prosperity to hundreds of millions. But it also has led to continuing poverty and other deprivations; unprecedented levels of inequality that undermine innovation, social cohesion and sustainable economic growth; and it has brought the world close to tipping points with the global climate system and biodiversity loss. To change course, the scientists say the world must transform a number of key areas of human activities, including food, energy, consumption and production, and cities.

These transformations can come about through coordinated action by governments, business, communities, civil society and individuals. Science has a particularly vital role to play—a role that can be further strengthened by increasing investment in science for sustainability and in natural and social science institutions based in developing countries.

The report emphasizes that achieving the SDGs fundamentally requires decoupling economic growth from environmental degradation, while at the same time, reducing social and gender inequalities in wealth, income and access to opportunities.

As not all countries are starting from the same place, the scientists say that higher levels of

growth will continue to be needed in poorer countries, to ensure quality social services and infrastructure, at the same time stressing that growing first and cleaning up later is not an option. The report also highlights the need for increased access to appropriate technologies and knowledge. Developed countries need to change their production and consumption patterns, including by limiting the use of fossil fuels and plastics, and to encourage public and private investments that align with the SDGs.

The scientists suggest that the UN could promote a new sustainable development investment label, with clear parameters and guidelines, to encourage and reward investment in industries and financial markets that advance sustainable development and discourage investment in those that do not.

The extensive transformation that is needed will not be easy, and the report suggests that a deep scientific understanding is needed to anticipate and mitigate the tensions and trade-offs inherent in widespread structural change. For example, those losing jobs in the shift away from fossil fuels and other industries at odds with a sustainable future should be supported towards alternative livelihoods.

The authors emphasize that strong political will and commitment will be required to make the needed transformations, that there are no one-size-fits-all solutions, and the interventions in developed countries will look very different from those in developing countries.

A call to action: 20 interventions that will matter

The report's Call to Action identifies 20 points where interventions can create transformative and accelerated progress towards multiple goals and targets in the coming decade. These targeted actions are based on the recent scientific literature analysing the deeper systemic interconnections that identify synergies and trade-offs between individual goals and targets.

The report advocates for universal access to quality basic services—healthcare, education, water and sanitation infrastructure, housing and social protection—as a prerequisite to elimination of poverty and advances in human well-being, with special attention given to persons with disabilities and other vulnerable groups. The report calls for renewed attention to ending legal and social discrimination, and for strengthened unions, nongovernmental organizations, women's groups and other community organizations, finding them all to be important partners in efforts to implement the 2030 Agenda.

The authors identify the food and energy systems as particularly important arenas for change since these systems, as they currently function, are bringing the world toward environmental tipping points, but they are also critical nexus areas for human health and well-being.

The food system must undergo widespread changes to the infrastructure, cultural and societal norms, and policies that are supporting the current, unsustainable, status quo. At present, approximately 2 billion people suffer from food insecurity and 820 million people are undernourished. At the same time, overweight rates are growing in almost all regions of the world, with global numbers reaching 2 billion overweight adults and 40 million children under the age of five.

For developing countries, stronger social protection floors are needed to ensure food security and nutrition. Countries must reduce the environmental impact of their food production systems, considering the entire value chain, by reducing food waste and reducing reliance on animal-based protein sources. Developing and developed countries both need to increase attention to malnutrition in all its forms—including the increasingly high numbers of persons who are overweight.

The energy system also must transform to close the energy access gap. Close to 1 billion people are without access to electricity, predominantly in Sub-Saharan Africa, and more than 3 billion people rely on polluting solid fuels for cooking, causing an estimated 3.8 million premature deaths each year. These gaps must be addressed, while at the same time increasing energy efficiency and phasing out fossil-based power generation without carbon capture and storage, so that the world economy is decarbonized, in line with the aspirations of the Paris agreement.

The amount of modern renewable energy in the total global energy supply has increased by an

average of 5.4 percent annually over the past decade. Meanwhile, since 2009 the price of renewable electricity dropped by 77 percent for solar photovoltaics and 38 percent for onshore wind—and for five years in a row, global investments in clean energy have exceeded US$ 300 billion annually.

However, additional growth has been stymied by direct and indirect subsidies to fossil fuels that continue to distract from their true economic, health and environmental costs.

With two-thirds of the global population projected to live in cities by 2050, the report finds that achieving the 2030 Agenda will require more compact and efficient cities that are better served by quality public transport and other infrastructure, social services and an economy that provides decent and sustainable livelihoods including those enabled by technology and nature-based industries. Partnerships and networks among peer cities can help municipal leaders build on good practices and a store of expertise, as can investing in building a "science of cities."

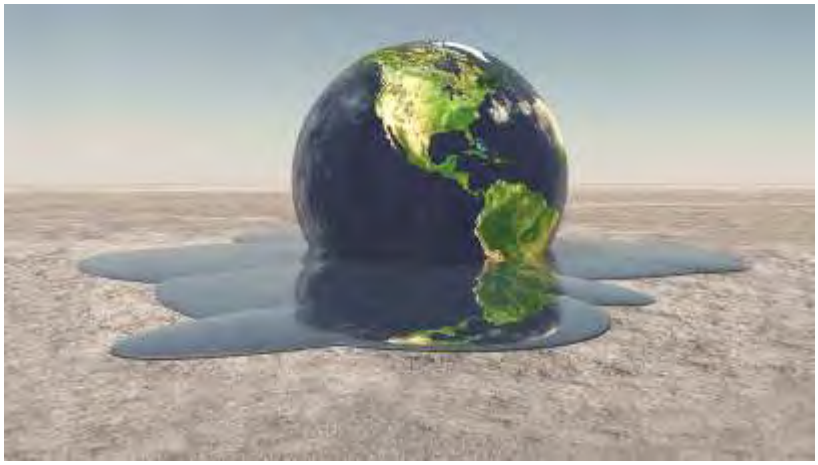
The scientists emphasized that the global environmental commons—such as the atmosphere, rainforests and oceans—must be safeguarded as crucial sources of ecosystem services and natural resources. Governments, local communities, the private sector and international actors must work together to conserve, restore and sustainably use natural resources. Accurately assessing environmental assets is a critical first step, and their value should be reflected through pricing, transfers, regulation and other economic instruments.

Decisions based on science

Science must play a major role in advancing sustainable development. Universities, policymakers and research funders must increase support to research guided by the 2030 Agenda. Simultaneously, researchers in sustainability science and other disciplines must work together to solve development problems and strengthen the science-policy-society interface, providing society and policy-makers information they can use to solve development problems.

The report makes the case for shifting current research priorities and supporting innovative approaches to sustainability science, emphasizing cross-disciplinary partnerships, and committing support and resources to scientific institutions, particularly in the global South. Development aid budgets should prioritize boosting scientific capacity and access in the global South. UN Member States, research consortia and libraries should work together to improve cross-border and inter-disciplinary collaborations in science for the SDGs.

Source: https://www.un.org/sustainabledevelopment/blog/2019/09/global-development-report/



TECHNICAL SESSION-IV

MISSION 5 TRILLION – COST MANAGEMENT STRATEGIES/ TOOLS

Overview

Modern global businesses are built on two fundamental principles. One is that profit is the key measure of success and growth, and the second is that all investments made by the business must have a positive return within a definable time frame. So the businesses need to change to a Sustainable Value Business Model which ensures that the effort and investment required must provide a measurable return on the balance sheet and have a positive impact on all stakeholders reflecting a fundamental shift towards real sustainability. In today's dynamic and uncertain business world Importance of building Sustainable Value into the strategy of a business cannot be underestimated.

Organizations should use various techniques of Strategic Cost Management for reducing and controlling cost in today's competitive world. One of the basic things an organization relies on for its long-term sustainability is cost management and giving it a strategic emphasis has led to the evolution of a new stream of management known as strategic cost management which is crucial in modern business environment.

The strategic cost management itself involves a number of techniques that are useful in improving the efficiency and long-term competitiveness of the firm. Strategic Cost Management not only leads to incremental performance improvement but also to transformational change across the value chain. It is viewed as part of business process to influence decisions on pricing and profitability across several dimensions: product, customer, region, and distribution channel. Strategic Cost Management helps to find lower cost solutions but it should also be kept in mind that this also requires proper supply chain management. Cost is seldom isolated from quality for competitive strategies. Every quality-cost strategy is evaluated with respect to benefit or 'value'. It is not that high quality means high cost. Rather, there is an optimum point in quality that yields maximum value due to differential behaviors of cost and revenue.

Strategic Cost Management is a term used to describe the strategic planning, restructuring and re-alignment of a company's costs to an operating model that will deliver their revised strategy and strategic ambitions. Such programs undergo a grassroots diagnostic that allows organizations to focus on operating costs, that are either no longer aligned to the strategy (destroy value), or integral to supporting the underlying growth, or maintaining positions in markets, businesses and functions (create value). The importance of managing costs and aligning them with the business strategy of an entity is critical especially in the midst of challenging economic times faced by businesses today. By attacking costs comprehensively and strategically, companies are able to buy time for growth measures to work.

To achieve high performance with strategic cost management, it is recommended that companies create maximum impact sustainable development by using a timely combination of : Tactical Cost Reduction , Proactive Cost Governance, Cost Management as a Core Value, Cost management as business design, Measuring and monitoring ROI on all spends. It is critical for companies today to find the right balance between painful but sometimes necessary cost cuts and the more strategic efforts to streamline processes, rationalize systems, outsource non-core activities and improve the operating model making best use of IT Revolution and strategic cost considerations. With disruption having arrived in full force companies are duly recognizing that strategic cost management is vital to building a sustainable business.

A CMA is instrumental in performing services like Costing, Pricing of goods and services, preparing, Verifying or Certifying Cost Accounting, and preparing related statements. A CMA's main job is analyzing the Cost and to devise ways to reduce it. Apart from this a CMA is also expected to evaluate operating efficiency and effectiveness of production and service management in different departments of an Organization. A CMA is the first whistle-blower, who alerts the Management on issues of purchase price, inventory, human costs and related issues. He is also an Efficiency Auditor so that the company saves money and time in manufacturing and distribution operations. A CMA is a advisor on profitable product mix, identify business risks and ensure mitigation.

Topics:

- ✓ Designing Cost Effective Sustainable Products
- ✓ Strategy Execution Excellence through CMA
- ✓ Importance of Sustainable Business Model thru CMA
- ✓ Performance Appraisal – A Tool for Success

INDIAN CPSES FORAY INTO SUSTAINABLE DEVELOPMENT

The article takes a look at the recently promulgated Sustainable Development Guidelines for Central Public Sector Enterprises and ways in which these action can be tracked to demonstrate contribution and commitment of these business entities in shaping a sustainable growth path for the nation.

Indian Government has, in the recent past, made concentrated efforts to inculcate and promote sustainability issues in growth, development and corporate initiatives. This has resulted in many public sector enterprises emerging at the forefront of the struggle to find sustainable growth paths in a country, which is both resource deficient (in terms of energy, water) and presented with significant developmental needs.

Although the raison d'etre of central public sector enterprises (CPSE) differ from private enterprises; thereby rendering the discharge of social goods and services a notch above the all-pervading goal of profit generation; increasing influence of market forces has resulted in making economic and social sustainability and independence central to PSEs.

Since the 1990s, India is pursuing the privatisation program; in addition to an attempt to make public sector enterprises more autonomous. The Board of Reconstruction of Private Sector Enterprises, established in 2004, has helped turnaround 62 enterprises through various private and public routes.

Simultaneously, the Ministry of Corporate Affairs (MoCA), has implemented mandatory policies requiring PSEs to incorporate governance and CSR into their operations.

Thus, it emerges, that a lot of PSEs are progressing upon profitability and sustainability simultaneously, aiming to shape operational practices which are inherently sustainable, as opposed to Business –As-Usual.

Sustainability and the Indian CPSE

The Department of Public Enterprises is vaulting the agenda of sustainable development in Indian CPSEs, through guidelines, consultations, policies etc. The ramped process began with the introduction of Corporate Governance Guidelines, followed by the mandatory Corporate Social Responsibility Guidelines and now, the recently presented **Guidelines on Sustainable Development.**

Adopting a broad and thus all-encompassing framework, these guidelines recognise sustainable development as the "development that meets the need of the present without compromising the ability of the future generations to meet their own needs and involves an enduring and balanced approach to economic activity, social progress and environmental responsibility."

Making Sustainable Development Integral to Organisation

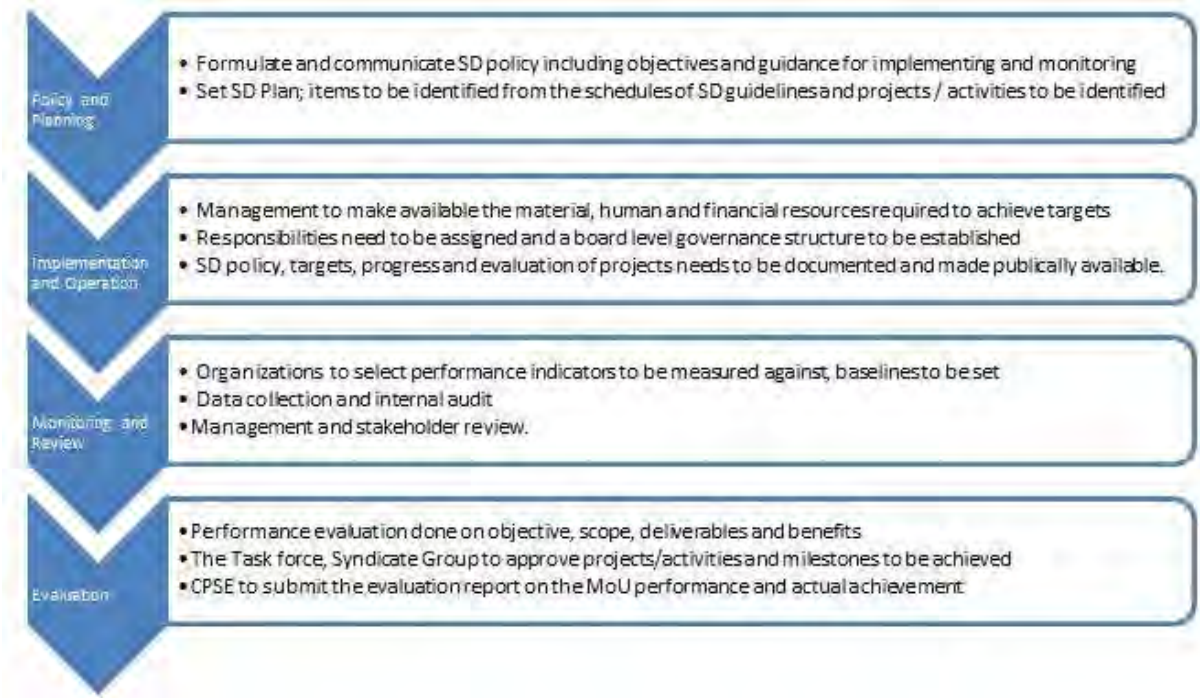
The Memorandum of Understanding Guidelines (MoU) of 2010 – 11 awarded a 5% mandatory weightage to sustainable development; thereby forcing PSEs to identify areas of concern / potential.

While sick and loss making units do not need to make a financial commitment and concentrate only on conservation and collaboration efforts; profitable enterprises need to make a commitment ranging from 0.05% ~ 0.1% of profit after tax; depending on the profits of the previous year.

What constitutes Sustainable Development?

In order to avoid the ambiguity that surrounds the CSR guidelines and opaqueness with regards to what constitutes CSR as also to address issues like percentage allocation in an objective manner, the DPE embarked on a long drawn process to

specify "the mandate and scope of activities, projects, expenditure, documentation and monitoring of Sustainable Development initiatives of CPSEs". The process is illustrated graphically below.



Enterprises can chose from the following core and specific items and implement projects from those suggested in the guideline or any other:

Core / Schedule A: Waste Management, Water Management, Energy Management, Bio Diversity Conservation, Energy Management and Natural Resource Management.

Specific/ Schedule B: Carbon Management, Supply Chain, External Charters/ Mandates, Life cycle analysis, SD reporting and training.

Performance tracking and evaluation is core to ensuring the commitment of the PSEs towards this Sustainable Development (SD) mandate. Typically termed as 'Sustainability Reporting', the SD performance evaluation documentation encompasses a wide range of parameters and offer a comprehensive way to demonstrate progress and accrued benefits.

Sustainability Reporting: Unleashing untapped opportunities?

Some sentences, often pronounced in passing, have a tendency to resonate with the listener and thus become memorable. One such thing I heard was that "problems and challenges are opportunities".

This rings extremely true in the context of sustainability reporting, wherein the immediate challenge of scaling up activities to the level of being 'reportable' in fact presents a huge opportunity for enterprises to identify material environmental and social risks, as well as realise immediate cost savings by adopting a resource efficient framework.

Some key areas where tracking and reporting can enable opportunities in the short term are listed below.

Energy Efficiency

Switching over to energy efficient technologies and achieving energy efficiency within existing technologies offers a fool proof way to achieve economic benefits of the same. A recent conversation

I had with an energy consultant revealed that many a manufacturing unit and heavy industries could make relatively simple changes to achieve a substantial reduction in their energy consumption and bills.

The Government of India, is also trying to tap in to the potential benefits of energy efficiency through adopting a co-benefits approach. The Bureau of Energy Efficiency (BEE), has rolled out various schemes and strategies such as "The Perform Achieve and Trade (PAT) energy certificate trading scheme, The Market Transformation for Energy Efficiency (MTEE), The Energy Efficiency Financing Platform (EEFP), and the Framework for Energy-Efficient Economic Development (FEEED).

GHG Accounting

Progress on achieving energy efficiency already provides a tool for reducing Green House Gas(GHG) emissions. However, accounting for and reducing GHG emissions can result in significant cost savings. The Global Methane Initiative, of which companies such as ONGC form a part, have successfully created a viable project network, to reduce one of the most potent GHGs and realise savings. ONGC reported in its 2011 Sustainability Report that the "Work on this program is helping ONGC to monetize thebenefits of saved natural gas, increased operational efficiency, environmental performance and workplace safety. The total gas saved over the last three years (8.543 MMSCM) is equivalent to saving 121,994 tonnes of CO equivalents from emitting to atmosphere."

CDM Projects

CDM is a crucial tool to achieve the financial accruals of adopting energy efficient products and technologies and is also high on GoI's agenda. The "Programmes of Activities" (PoA) initiative permits small projects to aggregate the CDM projects and reduce the transaction costs.

Capacity Building

PSEs account for nearly 20% of the Indian GDP and have revenues rooted in the domestic Indian demand. Capacity building, through budgets directed toward community development, employee well-being and research and development is thus core to their performance and relevance to the markets they operate in.

Some instances of how opportunities were seized by some enterprises were captured in a report by Delloite.

1. Indian Oil Corporation Limited has invested in production of green fuels meeting global standards thus leading to reduction in dependence on petroleum imports and helping improve the nation's energy security. The alternative fuels such as ethanol-blended petrol, biodiesel, andHydrogen and Hydrogen-CNG mixture are being commercialised now.
2. Coal India Limited is reclaiming mining land to make good the lost greenery and degradation of land caused by excavation of land in open cast mining, through continuous afforestation initiatives, thereby creating environmental and social benefits.

As mandatory sustainability reporting slowly seeps into operations of these enterprises, and actions begin to materialize, it remains to be seen if the Maharatnas and Navratnas of India start ringing true to their names: by emerging as true and lasting gems in the India growth story.

Author: Shradha Kapur
Senior Associate, cKinetics

Source:
http://www.sustainabilityoutlook.in/content/indian-cpses-foray-sustainable-development

BEYOND THE BOTTOM LINE: HOW CHANGING THE SUPPLIER-DISTRIBUTOR DYNAMIC CREATES BETTER PRODUCTS FOR PEOPLE LIVING IN POVERTY

Too often supplier and distributor relationships are purely transactional, one-way and unresponsive. However, what customers living in poverty need is to be served by true partnerships that continually focus on the end user.

This is the reality we're creating between Greenlight Planet and Pollinate Group. Over the past five years we've embraced transparency, made exceptions, failed and grown together.

Greenlight Planet makes and delivers affordable energy to the world's two billion under-electrified consumers, including the Sun King range of solar products. Pollinate Group is a social enterprise empowering women as leaders of change, equipping them to distribute products to their peers that improve health, and save time and money in neglected communities across India and Nepal.

By sharing a bit about how we work together and trial new products, we hope other suppliers and distributors will be inspired to challenge traditional approaches, and accelerate the progress toward SDG7, which aims to "ensure access to affordable, reliable, sustainable and modern energy for all."

MUTUALISM AND EVOLVING TOGETHER

To make an analogy with nature, as organisations we're different species, but we rely on each other to thrive. Without Greenlight Planet, Pollinate Group would not have access to a growing range of solar-powered products for people living on less than $1.90 a day. Without Pollinate Group, Greenlight Planet could not serve the communities that many deem too risky, transient and hard to reach.

Our size and business models are not the same. But we've evolved together, embraced product diversification and responded to market changes to introduce more than 10 new products together, including solar televisions and solar torches.

The journey has been made easier by recognising similarities in our organisational cultures. For instance, we both have a strong purpose, we are both learning organisations, and we both desire to build meaningful relationships with our customers. We also both value training: For example, Greenlight Planet helps up-skill Pollinate Group's women entrepreneurs and sales agents, increasing sales effectiveness and timely customer service for warranties. It's a boon for both brands, which is supported by co-branding activities to increase marketing efficiency.

Identifying similarities means we understand each other's pressure points and broader challenges. We can have more open conversations to make quick decisions. We avoid bureaucracy when trialing new products, and we quickly share any opportunity we believe could benefit our markets, teams or stakeholders.

Pollinate Group has definitely advanced from exposure to Greenlight Planet's global operations, for instance, by learning from its Easy Buy payment plans in Africa and customizing them to an Indian context. As a result, Pollinate Group is the largest distributor of Greenlight's pay-as-you-go products in India.

Greenlight Planet has also learned from Pollinate Group's focus and expertise in training and developing women entrepreneurs. Pollinate Group's scalable success in this model has

encouraged Greenlight Planet to rethink its own employment strategy in the field in India.

Our partnership also extends to realizing more diverse funding opportunities. Currently our two organisations are involved in a project with the Australian Department of Foreign Affairs (DFAT), who are funding Pollinate Group to scale its sales model, access new markets for clean energy products, empower women and create more meaningful private sector partnerships.

PRODUCT DEVELOPMENT MUST BE INCLUSIVE AND CAN NOT BE DONE IN ISOLATION

Both our companies highly value direct and honest feedback from customers. We want to understand what customers believe a product can do for them and how they would use it day to day. We identify the communities which we have the biggest potential to impact, and which present the best opportunities for selling.

When introducing a new Greenlight Planet product, Pollinate Group delivers training on how it works, and gathers information such as user details and product run time. It is also critical to understand how the product improves health and sanitation, saves time or money, provides a livelihood opportunity, and/or delivers environmental benefits.

Led by Pollinate Group, the customer feedback loop is efficient, using processes like a feedback matrix, with initial feedback collected within 7-10 days. This process is ongoing, and informs both organisations' longer-term decisions. Pollinate Group does not sugarcoat feedback to Greenlight Planet—it provides honest input from the communities.

The strengths of a collaborative partnership and the transparency it affords can most strongly be seen at this stage. This cycle is as fast as it would be if Greenlight Planet sought customer feedback through our own customer feedback process. Customer feedback on the quality and utility of the products is then analysed to assess the readiness of the product for launch. Once products are deemed fit for market, our companies continue working collaboratively; Greenlight provides training and marketing support, while Pollinate continues to share subsequent customer feedback.

This shared pilot process for new products works well to ensure strong commercial launches, and it has also led to the development of completely new products. For example, a portable, solar-powered tube light idea came directly from Pollinate Group's customer requests. When Pollinate Group shared how frequently their customers asked for a tube light, Greenlight Planet knew there was a good reason to put the new product idea on its R&D roadmap. Pollinate Group is most often our preferred partner to pilot new products with, due to the quality of this feedback and the quick response times.

WHAT HAPPENS WHEN SUPPLIERS AND DISTRIBUTORS DON'T INVOLVE CUSTOMER FEEDBACK?

When you don't engage a distributor to help source customer feedback, you narrow the quantity and potential quality of inputs to your product.

For Greenlight Planet, an example of this arose when we were developing a product the same size as an existing one, but with more features and a higher price bracket. We discovered that the customer perception was that paying more should mean a bigger product. Our first response was to educate customers on the features, but that failed and the size of the product remained a barrier to sales. The solution was to act on the customer perception: We introduced a larger size product which has resulted in strong sales.

Pollinate Group has also learned from our customers, who live on less than $1.90 per day that aesthetics matter. In India we've found that steel water filters hold much higher appeal than plastic ones, purely due to their appearance.

Our shared lesson is that product ideation should not focus only on price or features, but also on aesthetics. We should always challenge our biases and any assumptions about the customers we serve. For both organisations, product aesthetics are now a consideration in all new initiatives and product development.

Customer feedback can also directly contribute to innovation. For instance, Pollinate Group customers have asked for solar-powered mixer grinders. This has forced Greenlight Planet to think about what other products can be powered without

grid access. Similarly, the development of our solar television and solar fan were driven by customer insights sourced the same way.

BOTH SUPPLIERS AND DISTRIBUTOR SHAVE A RESPONSIBILITY FOR SOCIAL IMPACT

Last-mile distribution, like other distribution approaches, offers unique opportunities. Today, there are many suppliers who want to leverage Pollinate Group as a last-mile distributor. They are trying to understand the social impact space, yet they approach us with price offers, talking up products, and focusing only on reaching new markets – without considering what the customers really need. It's a typical private sector conversation.

However, when we discuss product trials, validation, reporting, training, etc., many suppliers new to working with social impact balk at the expectations. This is a red flag for Pollinate Group, when considering potential partnerships. We don't want suppliers who will just supply us, and not progress in other touch points. Using this philosophy for other suppliers has been great for Pollinate Group; our experience with Greenlight Planet has taught us about the importance of longer-term value when evaluating any supplier. Will they be involved in additional, essential activities, like leadership workshops? Will they put the time in to really understand a last-mile distributor's business drivers? Will they visit the slum communities or rural communities where we distribute their products?

Another responsibility in last-mile distribution is inclusiveness. Women customers have always had a strong say in the purchase of the products Pollinate Group distributes – especially solar lanterns or solar fans. As the household managers, women feel the impact of these products the most. Through the current DFAT project with Greenlight Planet to increase the number of women entrepreneurs in our India markets, we're excited to see how women who live in our target communities 24/7, with a deeper awareness of what these communities need, will influence future product development.

In many supplier-distributor dynamics, you have one partner pressuring the other about margins or units sold. However, rather than focusing only on the bottom line, we recommend going beyond and exploring shared challenges, communicating your goals with honesty and transparency, and getting to know your counterparts in the partnering organisation personally.

Our partnership is so effective because it has grown over time, but also because we continue to nurture it. Together we act in the best interests of our customers, because they are our partners too.

Author(s):
Sahil Khanna
Partnerships Business Leader, Asia, Greenlight Planet.

Murli Padmanabhan
Director of Growth, Pollinate Group

Source: NextBillion
Link: https://nextbillion.net/changing-supplier-distributor-dynamic-for-people-in-poverty/

DESIGN FOR THE TRIPLE TOP LINE: NEW TOOLS FOR SUSTAINABLE COMMERCE

Understanding Values with the Fractal Triangle

In our work with corporate clients such as Ford Motor Company, Nike, Herman Miller and BASF we have found that a visual tool, a fractal triangle, helps us apply triple top line thinking throughout the design process. Typically, meeting the triple bottom line is seen as a balancing act, a series of compromises between competing interests played out in product and process design. The key insights offered by the fractal triangle turn this notion on its head: Intelligent design, rather than balancing economy, ecology and equity can employ their dynamic interplay to generate value (see Figure 1).

The fractal triangle, first of all, reminds us that every product, whether or not it is de- signed with environmental health in mind, is produced and used in an interconnected world. This is the fundamental insight of ecology and the reason why the famous triad of sustainable development is on the table in the first place. But our value systems often obscure that fact; most of us still in some way identify with one of the prevailing ideologies of the 20th century.

Capitalism, even in a social market economy, identifies value almost exclusively in the economic realm. Yet products designed for economic gain have an enormous impact on the social and ecological world as well. The environmental groups and regulatory agencies that have emerged in response to the unintended consequences of industry tend to identify value primarily in preserving environmental health. Social movements that see economic aims as threatening are inclined to value the pursuit of equity most highly.

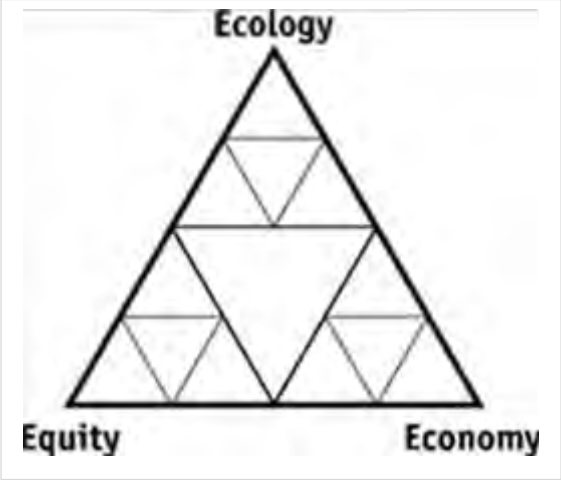


Figure 1

Each of these schools of thought – capitalism, socialism, ecologism – was inspired by a genuine desire to improve the human con- dition. But taken to extremes – reduced to isms – the stances they inspired can neglect factors crucial to long-term success. Even ecological concern, stretched to an ism, can neglect social, cultural, and economic interests to the detriment of the whole system. In short, holding one of these concerns as *the* ultimate goal often puts economy, ecology and equity at cross-purposes. So does measuring your performance by how well you are managing the bottom line liabilities that arise from these seemingly conflicting interests.

Triple top line thinkers, rather than trying to limit the influence of one or the other of these value systems, discover opportunities in honoring the needs of all three. In an infinitely interconnected world, they see rich relation- ships rather than inherent conflicts, much the way an ecologist sees infinitely complex and productive natural communities where others see ‘‘nature, tooth and claw’’.

This concept is embodied in the fractal tri- angle. Representing the ecology of human concerns, it

shows how ecology, economy and equity anchor a spectrum of value, and how, at any level of scrutiny, each design decision has an impact on all three (see Figure 2). As we plan a product or system, we move around the fractal inquiring how a new design can generate value in each category. Again, the goal is not to balance competing perspectives but to optimize and *maximize* value in all areas of the triangle through intelligent design. Often, we discover our most fruitful insights where design decisions create a kind of friction in the zones where values overlap. Returning to the eco-logical metaphor, we might call these areas *ecotones*, the boundaries between natural communities notable for their rich diversity of species. In the fractal, the ecotones are ripe with business opportunities.

When applying the fractal triangle to our own projects, we begin asking questions in the extreme, lower-right corner, which represents the Economy / Economy sector. Here we are in the realm of extremely pure capitalism and the questions we ask would certainly include, Can I make my product or provide my service at a profit? We tell our commercial clients that if the answer is no, don't do it. As we see it, the goal of an effective company is to stay in business as it transforms, providing shareholder value as it discovers ways to generate positive social and environmental effects.

Moving to the Economy/Equity sector, we consider

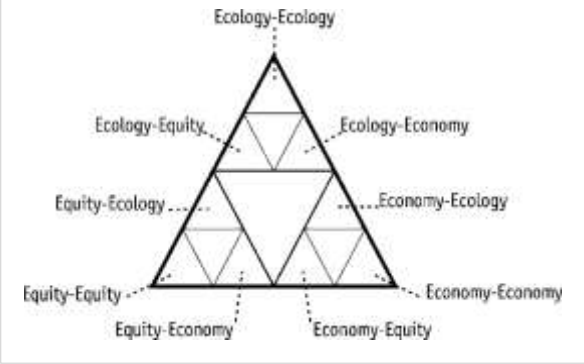


Figure 2

questions of profitability and fair- ness. Are the employees producing a promising product earning a living wage? As we continue on to Equity/ Economy, our focus shifts more towards fairness – we begin to see Economy through the lens of Equity.Here we might ask, Are men and women being paid the same for the same work? Are we finding new ways to honor everyone involved, regardless of race, sex, nationality or religion? In the extreme Equity corner, the questions are purely social: Will the new factory improve the quality of life of all stakeholders?

In the Ecology corner of the Equity sector, the emphasis shifts again; Equity is still in the foreground, but Ecology has entered the picture. The questions arising at this inter- section of values might explore the ways in which a product, such as the ecologically sound upholstery fabric, could enhance the health of employees and customers. Continuing to Ecology/Equity, we consider questions of safety or fairness in relation to the entire ecosystem: Will our product contribute to the health of the watershed?

In the pure Ecology sector: Are we obeying nature's laws? Creating habitat? In this realm we try to imagine how humans can be ''tools for nature''. Shifting to Ecology/Economy, commerce reenters the picture: Is our eco- logical strategy economically viable? Will it enable us to use resources effectively? Finally, we come to Economy/Ecology, where we encounter many questions that relate to the triple bottom line. Here the inquiry tends to focus on efficiency: Will our production process use resources efficiently? Will it reduce waste?

Each of these questions presents an opportunity for creating value. Together, they signal the possibility of acting with positive intentions across a wide spectrum of human concerns. Such intentions introduce a new standard of product quality, performance and success.

A New Design Standard

One of the most refreshing benefits of using the fractal triangle is the way in which it shiftsthe focus of the design process from nega- tive value judgments to questions of quality. It draws attention to the fundamental ques- tion of design: What is my intention?

As we survey the landscape of 21st century industry, we see a system that generates a host of unintended consequences«

As we survey the landscape of 21st century industry, we see a system that generates a host of *unintended* consequences – the pollution, waste, and ecological destruction we are all too familiar with. Most of these conditions are not the result of a grand, carefully conceived plan; they are the signals of flawed design. And they are everywhere. The systems we inherited from the Industrial Revolution are built on a ubiquitous, cradle-to-grave manufacturing model that generates products designed for a one-way trip the landfill. In fact, as much as 90 percent of the materials used to create today's products are cast off as waste, much of it toxic.

Environmentalists and business leaders sensitive to this legacy have tried to limit the consequences of industrial production by retrofitting the systems of industry to reduce their harm. The sustainable development agenda, for example, typically aims to re- duce, re-use and recycle, creating ''more goods and services while using ever less resources and producing less waste and pollution''.

As well-meaning as these goals may be, they don't change the fundamental design of industrial production. They fine-tune the engines of industry, diluting pollution and slowing the loss of natural resources without examining the design flaws at their source. The system remains based on a cradle-to- grave model. In fact, these reforms take for granted – institutionalize, even – the antagonism between nature and industry. The result: business strategies built on restricting industry and curtailing growth, an unappealing compromise based on the limitations of a century-old industrial model. This is a commercial cul de sac, the dead end created by an intention to be less bad.

Cradle-to-Cradle Design can lay the foundation for a transition from products designed for a one-way trip to the landfill«

An entirely different intention, embodied by a strategy we call Cradle to Cradle Design", offers a compelling alternative. Cradle to Cradle Design rejects the assumption that the natural world is inevitably destroyed by human industry, or that excessive demand for goods and services is the ultimate and inevitable cause of environmental ills. Industrial design is flawed because its foundations developed in a world in which few under- stood or appreciated the interconnectedness of people and nature, the relationship be- tween economy and ecology, or the principles of the earth's natural systems.

Today, with our ever-growing knowledge of the living earth – with ecological intelligence – design can reflect a new spirit. Cradle to Cradle Design incorporates this new aware- ness at every level of human endeavor. Its principles are modeled on natural systems, the perpetual flows of energy and nutrients that support the earth's biodiversity. Its intention: to apply the intelligence and effective- ness of these systems to product and process design, so that commerce can grow prosperity, celebrate cultural diversity and enhance the health of all species.

From an industrial design perspective this means developing materials, products, sup- ply chains, and manufacturing processes that replace industry's cradle-to-grave manufacturing model. In its place: systems modeled on nature's cradle-to-cradle cycles, in which one organism's waste becomes food for another. When designers apply this principle – *waste equals food* – to product conception and material flows management, they can to begin to create goods and services that flow effectively within closed-loop systems, pro- viding after each useful life either nourishment for nature or high quality materials for new products. Ultimately, we think Cradle- to-Cradle Design can lay the foundation for a transition from products designed for a one-way trip to the landfill to industrial systems that restore nature, eliminate the concept of waste, and create enduring wealth and social value – human industry as a regenerative force.

The Fractal at Work: Designing New Facilities

This is not just wishful thinking. The Fractal Triangle moves these concerns to the top line in the minds of designers. In projects underway today we have been using the fractal in the design process, looking in each sector for ways to generate positive effects. Inquiries such as these inherently spark an explosion of creativity, yielding projects that produce new value in ways that would never have been imagined when approached from a purely economic perspective.

Consider, for example, the restoration of Ford Motor Company's Rouge River plant in Dear- born, Michigan. Built between 1917 and 1925, the Rouge is one of the world's largest industrial sites. Once an enormously productive complex of blast furnaces, stamping mills, warehouses and assembly buildings capable of producing automobiles from raw materials, the plant fell into disrepair late in the 20th century. The aging facilities were rusting and out of date and decades of manufacturing had taken a toll on the soil and water.

In May 1999, Ford decided to invest $2 billion over 20 years to transform the Rouge into an icon of 21st century industry. Led by then chairman William Clay Ford, Jr., the company committed to not only rebuilding the complex but to restoring it to a healthy, life-supporting place. Here was a blue chip company with a sharp focus on the bottom line taking a step toward something truly new and inspiring. Could inspired innovation and profits co- exist?

Well, yes. Using the Fractal Triangle as a design tool, we worked with Ford's executives, engineers, and designers to begin to explore innovative ways of creating shareholder value. Rather than using economic metrics to try to *reconcile* apparent conflicts between environmental concerns and the bottom line, the company began to ask triple top line questions. Innovations would still need to be good for profits, but Ford's leaders began to explore how profits could be maximized by design decisions that also maximized social and ecological value.

Triple top line thinking energized the company's decision-making process. Ford began to ask revolutionary questions: How can we make the Rouge a place we would allow our children to play? How do we design a manufacturing facility that creates prosperity and health for employees? What innovations will create habitat for native species? How do we create healthy soil? These are all positive, pro-active questions. They ask not how to ''clean up'' but how to create life-support systems.

The systems for storm water management on the site illustrate how designs that support life can create tremendous economic value. Expensive technical controls are a typical response to storm water regulations. Ford estimated that new pipes and treatment plants would cost up to $48 million. If we had approached the flow of water on the Rouge site from a triple bottom line perspective, we might have tried to cut costs by using pipes made with less material, or by finding ways to treat water with fewer harmful chemicals. If we followed this path, we would be trying to meet an environmental responsibility as efficiently as possible.

Instead, we tried to design a manufacturing facility that would create habitat, make oxy- gen, connect employees to their surroundings and invite the return of native species. The result is a day lit factory with 450,000 square-feet of roof covered with healthy top-soil and growing plants – a living roof. In concert with porous paving and a series of constructed wetlands and swales, the living roof will slow and filter storm water run-off, obviating the need for expensive technical controls, and even regulations. All this with first cost savings of up to $35 million, with the landscape thrown in for free.

This is the power of intelligent design

The Fractal at Work: Conceiving New Products

Designers can also apply the fractal triangle and triple top line thinking to the design of a single product – or even product packaging. Imagine that you are the CEO of an ice cream company. You sell an all-natural product you are very proud of. It brings pleasure to your customers while supporting the dairy farmers of your region, and it generates great profits, too. But you have a problem: after a recent outdoor event downtown, hundreds of wrappers from your popular ice cream sandwich littered the city parks. You did the right thing when you sent out a crew to clean up the mess, but clearly, that's not something you want to do for the long-term. You also realize, when forced to face this problem, that your packaging is also dyed with chemicals you'd never put in your ice cream. What to do?

If we were advising you, we'd suggest some triple top line thinking with the fractal triangle to try to generate an innovative solution. We would not ask how to reduce the chemicals in your packaging or how to work with the city on litter control. Instead, we'd wonder what kind of positive affects you hoped to create. Maybe you're interested in continuing to provide the pleasure of a delicious sweet while offering a healthful package that creates new value for your community.

Working with the fractal, we might begin to see that ice cream packaging could be de- signed for biodegradability with new bio- polymers and safe dyes. This light, healthful packaging could be economically produced. You might decide to provide

added value by embedding the seeds of a native wildflower packaging designed to dissolve in a day after use – when children toss it on the ground they'd be planting seeds rather than discarding trash. Suddenly, your problem starts to become an asset: You're supporting the population of native plants; your customers are excited to be young ''Johnny Appleseeds''; the city parks are blooming with colorful flowers; and your sales are through the roof. Not bad for packaging. Who knows, such a product could someday make ''Adopt-a- Highway'' programs obsolete.

Seeing the Future, Today

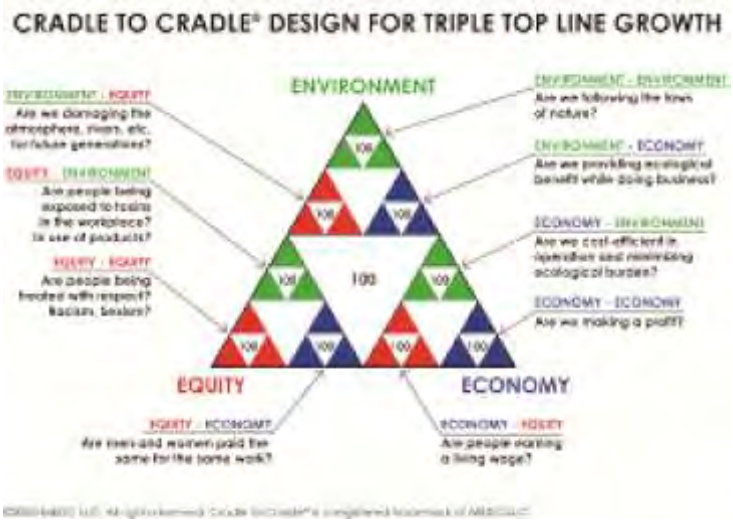
These examples begin to suggest some of the ways in which triple top line thinking and the fractal triangle create business opportunities. Applied throughout the design process, they introduce a new standard of quality, adding ecological intelligence, social justice, and the celebration of creativity to the typical design criteria of cost, performance, and aesthetics. Design driven by these positive aspirations could lay the foundation for a truly inspiring era in which we transform industry by remaking the way we make things.

We will do so, we believe, by engaging in a true partnership with nature. Expressed in designs that resonate with natural systems, this new partnership can take us beyond sustainability – a minimum condition for survival – toward commerce that celebrates our relationship with the living earth. We can build factories that inspire their inhabitants with sunlit spaces, fresh air, copious views of the outdoors, and cultural delights. We can create fabrics that feed the soil, giving us pleasure as garments and as sources of nourishment for our gardens. We can tap into the flows of energy and nutrients in the natural world, designing astonishingly productive systems that create oxygen, accrue energy, filter water, and provide healthy habitats for people and nature.
As we have seen, designs such as these are generators of economic value too. When the principles that guide them are widely applied, at every level of industry, productivity and profits will no longer be at odds with the concerns of the commons. Instead, we will be living in a world of sustaining prosperity, a world in which both nature and commerce can thrive and grow.

Author(s):
William McDonough
Architect, industrial designer, and educator
Founding principal, William McDonough&Partners, Architecture
and Community Design.

Michael Braungart
Chemist, university professor,
Founder, EPEA Internationale
Umweltforschung GmbH, Hamburg, Germany.

Source:
https://www.globalcommunity.org/business/Design%20for%20the%20Triple%20Top%20Line.pdf



BETTER BUSINESS BETTER WORLD

EXHIBIT 1: The Global Goals for Sustainable Development

Achieving the Global Goals would create a world that is comprehensively sustainable: socially fair; environmentally secure; economically prosperous; inclusive; and more predictable. They provide a viable model for long-term growth, as long as businesses move towards them together. The goals are designed to interact, so progress on them all will have much more impact than achieving only some. Of course, the results will not be heaven on earth; there will be many practical challenges. But the world would undoubtedly be on a better, more resilient path. We could be building an economy of abundance.

These are results that business leaders will surely support. However, they are less likely to feel responsible for delivering them: one survey shows that half the business community think this is government territory.

Our research tells a very different story. First, it shows that business really needs the Global Goals: they offer a compelling growth strategy for individual businesses, for business generally and for the world economy. Second, the Global Goals really need business: unless private companies seize the market opportunities they open up and advance progress on the whole Global Goals package, the abundance they offer won't materialise.

Those of us on the Commission who lead companies are choosing to incorporate the Global Goals for Sustainable Development into our core growth strategies, value chain operations and policy positions. This report argues that other business leaders should do the same and soon, whatever the scale of their operations.

"Achieving the Global Goals creates at least US$12 trillion in opportunities."

Achieving the Global Goals opens up US$12 trillion of market opportunities in the four economic systems examined by the Commission. These are food and agriculture, cities, energy and materials, and health and well-being. They represent around 60 percent of the real economy and are critical to delivering the Global Goals. To capture these opportunities in full, businesses need to pursue social and environmental sustainability as avidly as they pursue market share and shareholder value. If a critical mass of companies joins us in doing this now, together we will become an unstoppable force. If they don't, the costs and uncertainty of unsustainable development could swell until there is no viable world in which to do business.

This is new territory. Moving business to a sustainable growth model will be disruptive, with big risks as well as opportunities at stake. It will involve experimenting with new "circular" and more agile business models and digital platforms that can grow exponentially to shape new social and environmental value chains. Knowing how to move first and fast is critical; so is reducing exposure to the risk of assets being stranded by the shift to low-carbon, more automated economies.

The report that follows is a call to action for current and future business leaders. It explains why they should go for growth in line with the Global Goals and how to lead that change, in their own businesses and beyond.

THE BUSINESS CASE FOR THE GLOBAL GOALS

The business case for sustainable development is strong already: it opens up new opportunities and big efficiency gains; it drives innovation; and it enhances reputations. With a reputation for sustainability, companies attract and retain employees, consumers, B2B customers and investors, and they secure their licence to operate. That's why sustainable companies around the globe are thriving and delivering attractive returns to shareholders. That is why over 9,000 companies around the world have already signed up to the 10 principles of the UN Global Compact, a guide to sustainable business behaviour.

The business case for sustainable development as core strategy gets much stronger as the world achieves the Global Goals. Our research shows achieving the Global Goals in just four economic systems could open 60 market "hot spots" worth an estimated US$12 trillion by 2030 in business savings and revenue (Exhibit 2).**9** The total economic prize from implementing the Global Goals could be 2-3 times bigger, assuming that the benefits are captured across the whole economy and accompanied by much higher labour and resource productivity. That's a fair assumption. Consider that achieving the single goal of gender equity could contribute up to US$28 trillion to global GDP by 2025, according to one estimate.**10** The overall prize is enormous.

EXHIBIT 2: 60 biggest market opportunities related to delivering the Global Goals

	Food and Agriculture	Cities	Energy and Materials	Health and Well-Being
1	Reducing food waste in value chain	Affordable housing	Circular models - automotive	Risk pooling
2	Forest ecosystem services	Energy efficiency - buildings	Expansion of renewables	Remote patient monitoring
3	Low-income food markets	Electric and hybrid vehicles	Circular models - appliances	Telehealth
4	Reducing consumer food waste	Public transport in urban areas	Circular models - electronics	Advanced genomics
5	Product reformulation	Car sharing	Energy efficiency - non-energy intensive industries	Activity services
6	Technology in large-scale farms	Road safety equipment	Energy storage systems	Detection of counterfeit drugs
7	Dietary switch	Autonomous vehicles	Resource recovery	Tobacco control
8	Sustainable aquaculture	ICE vehicle fuel efficiency	End-use steel efficiency	Weight management programs
9	Technology in smallholder farms	Building resilient cities	Energy efficiency - energy intensive industries	Better disease management
10	Micro-irrigation	Municipal water leakage	Carbon capture and storage	Electronic medical records
11	Restoring degraded land	Cultural tourism	Energy access	Better maternal and child health
12	Reducing packaging waste	Smart metering	Green chemicals	Healthcare training
13	Cattle intensification	Water and sanitation infrastructure	Additive manufacturing	Low-cost surgery
14	Urban agriculture	Office sharing	Local content in extractives	
15		Timber buildings	Shared infrastructure	
16		Durable and modular buildings	Mine rehabilitation	
17			Grid interconnection	

Leading for sustainable development

The Commission has identified the following six actions you can take as a business leader to capture your share of this prize. All of them need real leadership from the top, to inspire purpose and commitment among everyone in your business and to transform the markets in which you all operate together.

1. Build support for the Global Goals as the right growth strategy in your companies and across the business community. The more business leaders who understand the business case for the Global Goals, the faster progress will be towards better business in a better world.

2. Incorporate the Global Goals into company strategy. That means applying a Global Goals lens to every aspect of strategy: appointing board members and senior executives to prioritise and drive execution; aiming strategic planning and innovation at sustainable solutions; marketing products and services that inspire consumers to make sustainable choices; and using the goals to guide leadership development, women's empowerment at every level, regulatory policy and capital allocation. Achieving the Global Goals will create 380 million new jobs by 2030. You need to make sure your new jobs and any others you generate are decent jobs with a living wage, not only in your immediate operations but across your supply chains and distribution networks. And you need to help investors to understand the scale of value that sustainable business can create.

3. Drive the transformation to sustainable markets with sector peers. Shifting whole sectors onto a sustainable footing in line with the Global Goals will unlock much bigger business opportunities. Consider food and agriculture. A global food and agriculture system in line with the Global Goals would deliver nutritious, affordable food for a growing world population, generate higher incomes – especially for the world's 1.5 billion smallholders – and help restore forests, freshwater resources and vital ecosystems. It would create new economic value of more than US$2 trillion by 2030. And it would be much more resilient to climate risk. "Business as usual" will not achieve this market transformation. Nor will disruptive innovation by a few sustainable pioneers be enough to drive the shift: the whole sector has to move. Forward-looking business leaders are working with sector peers and stakeholders to map their collective route to a sustainable competitive playing field, identifying tipping points, prioritising the key technology and policy levers, developing the new skill profiles and jobs, quantifying the new financing requirements, and laying out the elements of a just transition. Over the next 15 years, driving system change in line with the Global Goals with sector peers will be an essential, differentiating skill for a world-class business leader. It means shaping new opportunities, pre-empting the risks of disruption and renewing businesses' licence to operate.

4. Work with policy-makers to pay the true cost of natural and human resources. Sustainable competition depends on all the competitors facing prices that reflect the true costs of the way they do business – internalising the externalities, to use the jargon. The idea of pricing pollution at its true environmental and social cost has been around for a long time. But the need for strong carbon pricing is becoming ever more urgent to tackle the risk of runaway climate change.

Establishing prices for carbon as well as other environmental resources (especially water in many areas) and sticking to those prices fires the starting gun for a "race to the top". Businesses that choose to pay living wages and the full cost of their resources need to be certain that their competitors will do the same in the not too distant future if they are not to be at a cost disadvantage. Business leaders must therefore work openly with regulators, business and civil society to shape fiscal and regulatory policies that create a level playing field more in line with the Global Goals. This could involve fiscal systems becoming more progressive through putting less tax on labour income and more on pollution and under-priced resources.

5. Push for a financial system oriented towards longer-term sustainable investment. Achieving the Global Goals will likely require an estimated US$2.4 trillion a year of additional investment, especially for infrastructure and other projects with long payback periods. There is enough capital available. But in the world's uncertain circumstances, most investors are looking for liquidity and short-term gains. As soon as companies are paying "full" prices that reflect social and environment externalities, then their financial performance will be the main signal that investors need to understand companies' relative performance on the Global Goals. But achieving full prices across the economy will take time. Until then – and to help bring that day closer – business leaders can strengthen the flow of capital into sustainable investments by pushing for three things: transparent, consistent league tables of sustainability performance linked to the Global Goals; wider and more efficient use of blended finance instruments to share risk and attract much more private finance into sustainable infrastructure; and alignment of regulatory reforms in the financial sector with long-term sustainable investment.

6. Rebuild the Social Contract. Trust in business has eroded so sharply since the global financial crisis, the social fabric is wearing thin. Many see business as reneging on its social contract. Business leaders can regain society's trust and secure their licence to operate by working with governments, consumers, workers and civil society to achieve the whole range of Global Goals, and adopting responsible, open policy advocacy. Rebuilding the social contract requires businesses to pay their taxes transparently like everyone else and to contribute positively to the communities in which they operate. In total, there are over 700 million workers employed directly and indirectly in global supply chains. Treating them with respect and paying them a decent wage would go a long way to building a more inclusive society and expanding consumer markets. Investing in their training, enabling men and women to fulfil their potential, would deliver further returns through higher labour productivity. And ensuring that the social contract extends from the formal into the informal sector, through full implementation of the UN Guiding Principles on Business and Human Rights, should be non-negotiable. There are still between 20-40 million people working in forms of modern slavery and over 150 million children working in the fields, mines, workshops, and rubbish dumps that underpin much of the global economy, unseen and unprotected.

"More than 150 million children are working unseen and unprotected."

This is an unacceptable feature of 21st century capitalism – one that boardrooms, investors and consumers can no longer ignore.

increasingly drastic regulatory responses from governments. First movers who have already aligned their resource use and workforce management with the Global Goals will have a 5-15 year advantage on the sustainable playing field. The faster a critical mass of company leaders decide to line up their business objectives with the Global Goals and make their sectors more sustainable, the more business there will be for everyone in a more predictable, prosperous, peaceful world.

Some of us on the Commission run or serve smaller businesses and all of us have vendor and supply chains that include medium and small enterprises. We recognise that many of the 380 million new jobs that achieving the Global Goals will create will be in businesses of this scale. Their strategies are critical to progress towards sustainable markets and value chains.

Progress could be delayed if they don't get enough support. In particular, they need access to affordable finance to make sustainable investments that make a positive social and environmental impact as well as a decent return.

Over the coming months, members of the Commission plan to give our support to all those business leaders who, like us, want better business in a better world. It is time to change the game.

Source: http://report.businesscommission.org/uploads/BetterBiz-BetterWorld_170215_012417.pdf

BREAKTHROUGH BUSINESS MODELS: EXPONENTIALLY MORE SOCIAL, LEAN, INTEGRATED AND CIRCULAR

Tomorrow's business leaders understand that truly sustainable development is becoming a mainstream priority for a growing number of markets and, in the process, for an ever-extending list of major companies. They sense that this is no longer "simply" a matter of reputation and trust, but of long-term competitive advantage, security and survival.

Some watch in growing trepidation as market insurgents launch new offerings in the sustainable development opportunity space, with the potential to disrupt incumbent companies and value webs. And the best among them now tell their colleagues and their investors that they must learn to think differently— and act accordingly.

There is still much cherry picking, of course, with self-serving tokenism and, among politicians, much kicking of cans down the road. Meanwhile, too many business leaders still claim to have "embedded" the sustainability agenda, when at best they have taken on board elements of the closely linked Corporate Social Responsibility and Shared Value agendas. All good, as far as they go, but with system change now on the agenda they do not go nearly far enough.

Business Case to Business Models

"To change something, build a new model that makes the existing model obsolete."

R. Buckminster Fuller

One reason for the relatively slow progress is that the first-mover advantage in this field has been consistently overrated—with many companies choosing to shelter behind their sector leaders or adopt a moderately fast follower approach.

Iconic companies like **Interface**, **Natura** or **Novo Nordisk** may now make significant percentages of their premium revenues in this space, but these are still extraordinary companies doing extraordinary things. They have brought unusual levels of imagination, ingenuity, courage and stamina to bear where most companies have only begun to scratch the surface.

But if capitalism is to survive and thrive, today's extraordinary must become tomorrow's ordinary. One key question: How quickly will this happen? Our message in this report: Quicker than most of us imagine. Why? Because the sustainability agenda is beginning to push into the commercial mainstream. But, even more importantly, an old economic order is now coming apart at the seams, with a new one struggling to be born.

Business as Usual

Economic historians know that such periods are very tough on incumbents, whether they be companies, industries or even entire economies.

Whichever sectors they may operate in, all businesses now need a much clearer sense of the direction of market travel—followed by

access to the best available people, technologies and above all business models. The old approach of simply signing sustainable business charters or producing annual sustainability reports is a baseline activity, the entry tickets to playing by the new rules. As a result, the spotlight is shifting from the business case for action to the business models needed to deliver against the new market priorities.

A radical growth agenda

Breakthrough Business Models, commissioned by the **Business and Sustainable Development Commission**, concludes that the United Nations' Sustainable Development Goals (SDGs) are a more radical agenda than most business leaders yet realize. They imply a

shift from incremental to exponential mindsets and ambitions; from our current focus on the negative impacts of economic activity to the deliberate generation of positive impacts; and from the business case for action to a reconsideration of business models that ensures industries are fit for tomorrow's very different market and geopolitical realities.

Launched early in 2016, the Commission is probing four key areas:

1 **The size of the economic prize** that will be within reach if the world achieves the SDGs, as well as the sector-level transformations that will be needed.

2 **The new business models** being pioneered by both insurgents and "radical incumbents", and how these are breaking with tradition.

3 **New financial models** that align financial value creation with high environmental and social performance.

4 **A new social contract** between business, government and society.

Think Exponential

Our central argument can be summarized as follows:

1
Think Sustainably
Leaders know that the rules of the game are about to change faster than at any time in their working lives. Simply parroting the latest sustainability jargon won't make the cut—indeed the entire Sustainability Industry must undergo a radical reinvention, involving defragmentation and re-capitalization, if it is to tackle its current weaknesses, including intense siloing, internal competition and a Babel-like confusion of terminologies.

2
Think Exponential
As leaders learn to Think Sustainably, they will also need to learn to Think X, shorthand for Think Exponential. In the same way they once looked to activists and social entrepreneurs for evidence of where markets were headed, they must now engage a very different set of players. These new players are not happy with 1% or even 10% year-on-year improvements, instead pushing towards 10X—or 10-fold—improvements over time. And in Thinking X, business leaders need to think of four key domains where the X agenda is already playing out.

3
Think Social
The first imperative is to Think Social. This is not simply about embracing social media and networks, but positioning business for a world pushing from 7 billion to 10 billion people within a few short decades. This builds on the work of social entrepreneurs and intrapreneurs, and impact investors, moving us all into areas like behavioral and cultural change.

4
Think Lean
The second imperative is to Think Lean. The triple bottom line agenda—now also embraced by the burgeoning global B-Corp movement—expanded the focus from eco-efficiency to new forms of value creation—and destruction. Now there

is a need to pull together movements working on lean production, lean start-ups and frugal innovation, and those aiming to create new forms of efficiency across all major capitals (e.g. physical, financial, human, intellectual, social and natural capital).

5
Think Integrated
The third imperative is to Think Integrated. There is growing interest in Integrated Reporting, with sustainability accounting and disclosures converging with financial accounting and disclosures. But integrated accounting and reporting across multiple forms of capital is only part of the challenge. To break through, we need to evolve solutions that are integrated across—and impact—every level of the system. In tomorrow's capitalism, this will mean seamless data flows from farms, fisheries and factories right out to the biosphere, oceans and atmosphere. The result: new forms of market intelligence that most business leaders do not yet know that they will soon find indispensable.

6
Think Circular
The fourth imperative is to Think Circular. Going—or thinking—in circles used to be seen as a bad thing,
but now concepts like the Circular Economy and Cradle-to-Cradle Design are gaining real traction. This aspect of the Sustainability X agenda runs directly counter to the linear take-make-waste model of capitalism, but the accelerating push towards a low carbon economy—with the new emphasis on carbon productivity—will catalyze closed-loop value webs and business models.

Building the new order

We see emergent examples—though few fully formed—of each of the key characteristics of breakthrough business models outlined above. But the defining element of each case in which we see great promise is the exponential dimension: "The incremental mindset focuses on making something better," as Mark Bonchek of **Shift Thinking** recently explained on the *Harvard Business Review* website, "while the exponential mindset makes something different. Incremental is satisfied with 10%. Exponential is out for 10X."

To succeed in the next economic wave, as the new economic order emerges, businesses must let go of the old ways of doing things—keeping the valuable parts and discarding those that harm wider economic, social and environmental systems.

But the leaders spotlighted in the following pages are not simply letting go. They are playing into—and helping build—the new order. And, in the process, they are evolving new forms of value across our four key domains: Social, Lean, Integrated and Circular.

As we head into the year 2017, which marks the thirtieth anniversary of the Brundtland Commission report, *Our Common Future* 2, we have a timely opportunity to critically reflect on what has worked—and what hasn't.

Achieving exponential progress will require a scale of collective effort rarely seen outside wartime conditions.

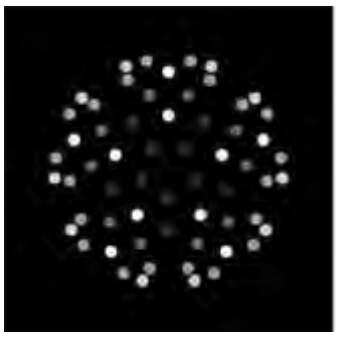
We call on business leaders—and the wider Sustainability Industry—to embrace this agenda. And we outline four recommendations to this end. Among next steps, we must:

— Spur a mindset shift from incrementalism to increasingly exponential, experimental, breakthrough thinking that understands business as part of wider social and natural systems, accepting that many current business models will become obsolete.

— Create market intelligence and forecasts that track progress against the SDGs and next generation value creation, and build supporting platforms that track the performance of sustainability-oriented business models in real time.

— Continuously review the implications and potential applications of emerging technologies, some of which are flagged in Figure 2 (page 10) and develop them so that, at best, they provide powerful solutions to the needs flagged in the SDGs— or, at worst, they do not undermine the SDG process.

— Reboot the Sustainability Industry so that it, too, uses mindsets and business models that help drive and shape the next wave of breakthrough change.



Social X

Breakthrough business models will be social, delivering both financial and extra-financial value through positive impacts for people—in the present and in the future

Lean X

Breakthrough business models will be lean, optimizing the use of all forms of capital, from physical and financial through human and intellectual to social and natural.

Integrated X

Breakthrough business models will be integrated, managing financial and extra-financial value creation across economic, social and environmental systems.

Circular X

Breakthrough business models will be circular, sustaining inputs and outputs at their highest value in both technical and biological cycles.

Critically, the SDGs, with their 2030 milestone, require a new mindset— an exponential mindset— and, in turn, a retooling or abandonment of many current business models

Source:
Extract from
A paper from Volans commissioned by the Business and Sustainable Development Commission, September 2016

KEY TOOLS AND TECHNIQUES FOR PERFORMANCE MANAGEMENT

Performance management helps organisations become more successful and stay ahead of the competition. It essentially involves measuring, reporting and managing progress in order to improve performance, both at an individual level, and at a corporate level. There are many, many performance management tools designed to make the process easier and more effective. Here I look at some of the most common tools.

Key performance indicators (KPIs) and metrics

KPIs and metrics provide a way to measure how well companies, business units projects or individuals are performing in relation to their strategic goals and objectives. But the primary value of KPIs is not in measurement per se, but in enabling rich data-driven performance conversations and better decision making. Measuring everything that moves provides little more than an illusion that performance is being managed. Instead, it's important to ask, "What goal will this KPI help my organisation achieve, or what problem will it resolve?" and "What decisions will the KPI help drive?" Well-designed KPIs should be vital navigational instruments, giving a clear picture of current levels of performance and whether the business is where it needs to be.

Performance appraisals

Alongside KPIs, performance appraisals are probably the most commonly used performance management tool. When used properly, performance appraisals are incredibly powerful for aligning the goals of individuals with the strategic aims of the organisation. To get the most out of this tool, however, employees must feel that the appraisal process is a regular, honest, fair and constructive two-way conversation. If not, appraisals can be a powerful de-motivator, leading to a decline in performance.

360 degree feedback

This tool is all about answering the question, "How well are our people performing in the eyes of those who have a stake in their performance?" It provides individuals with a broad assessment of their performance based on the views of those around them, including their supervisor or manager, direct reports, peers, customers, suppliers, and so on. Results are confidentially tallied and presented to the employee, usually by a manager. The insights from 360 degree feedback are typically used in employee training and development. Done well, 360 degree feedback helps to democratise the review process, by weighing the opinions of many people, instead of just the individual's line manager.

Management by objectives (MBO)

MBO is the process of defining specific objectives and then setting out how to achieve each individual objective. It's particularly powerful for specific work that needs to be done one step at a time, and is a great way to create a culture of working towards common goals. The idea is that, as each objective is achieved, those within the organisation are aware of their achievements, which, in turn, boosts morale and motivation. MBO involves measuring individual performance and comparing it with standards that have been set.

Performance management frameworks

Without a doubt, one of the most popular and best-known management frameworks is the Balanced Scorecard (BSC). Voted one of the most influential business ideas ever presented in the Harvard Business Review, the BSC has been massively popular over the last 20 years. The BSC is a strategy execution tool that helps companies to: 1) clarify their strategy and communicate their business priorities and objectives; 2) monitor progress by measuring to what extent priorities and objectives are being delivered; and 3) define and

manage action plans to ensure initiatives are in place to deliver the business's priorities and strategic objectives.

Reward and recognition programmes

When employees feel that good performance goes unrecognised and unrewarded, motivation plummets, and people disengage from the company's overall mission. Reward and recognition programmes are therefore an important part of any thorough performance management system, creating a method for celebrating those who are high performers. For many companies, this means dishing out financial rewards, such as bonuses, but simple praise and recognition of a job well done is just as important for maintaining morale and continued high performance.

Personal development plans (PDP)

A PDP is effectively a tailored action plan that is based on reflection and awareness of an individual's performance and needs, setting out goals for future performance and actions that will support personal development. PDPs are often used to identify specific training and development needs and create an action plan for meeting those needs (for example, through specific courses or shadowing other employees). It helps individuals set out how they want to grow, and what actions they can take to achieve that growth. This not only helps the individual feel more invested in the company, and the role they play in its success, it also identifies concrete steps that can help drive individual performance in the future.

Investing in or developing performance management tools, techniques and processes like these, is an important part of creating a culture of high performance. And that's exactly what every business, regardless of size, in every industry, should be aiming for – strong performance at every single level of the organisation.

Author:
Bernard Marr
Author, keynote speaker, and advisor to companies and governments

Source:
https://www.bernardmarr.com/default.asp?contentID=772

TECHNICAL SESSION-V

MISSION 5 TRILLION – GLOBAL COST MANAGEMENT PRACTICES

Overview

Not long ago, companies thought cost management was about reducing expenses. The notion then evolved and was viewed as a way to manage costs while also driving growth. Now, cost management is advancing further. Business leaders see it as a strategic initiative that is part of a larger transformation process. Cost management is not a standalone issue. People need to start thinking about it differently. It needs to be part of a larger transformation. With the recent emergence of disruptive innovations such as robotic process automation and cognitive technology, cost management is now morphing into a strategic enabler with the power to disrupt entire industries and fundamentally change how business is done.

In a gradually shrinking world, the process of globalization is creating a world in which businesses are increasingly interdependent and interconnected. Although this allows for greater opportunities for businesses, it also leads to intense competition vying for market share. The use of cost accounting makes a company more effective in fighting these rivals. An effective cost management system is essential in pursuing future growth and maintaining an optimal level of costs. By recognizing the importance of cost accounting in a company's daily operations, management can more easily handle global markets and actually become a standard among other organizations.

It is imperative to understand the costing systems and practices being followed by companies in various countries such as Japan, Germany, China and Korea.

Japanese cost management programs are an integration of six distinct cost management techniques; target costing, value engineering, inter-organizational cost management systems, product costing, operational control, and kaizen.

Literature in Germany suggests that 50%-60% of German companies use some form of GRENZPLANKOSTENRECHNUNG (GPK) which works best when combined with a strong, highly integrated information system and used with other complementary costing practices such as marginal costing, standard costing. Variances are analyzed for each cost center. Plant-wide/departmental allocation methods are widely used in most industries. Planned costs (standard costs) are used for most costing purposes. The cost of idle capacity is identified and computed.

Most Chinese companies follow traditional methods for allocating costs to products, although the use of more accurate costing techniques is emerging. Chinese management styles rely more on managing people and relationships – Chinese management ethos – than on technological systems and management tools. The level of office and accounting computerization and IT-enabled business solutions is not as advanced as those in the west. Product cost is the most important factor in determining product pricing. Other factors, especially competitor pricing, are also very important. As PRC companies grow and face the complexities associated with more diverse products and customers and increased organizational size, they will increasingly face the need for more complex cost management systems.

Cost Accounting Records were made mandatory in Korea after 1998 for select category of companies. The Korean Government issued Cost Accounting Standards in 1990.More than thirty Standards have been issued for adoption and initially manufacturing companies were covered. Subsequently these Standards were made applicable to Non-Manufacturing companies and later to banks and Financial Institutions in 1999. Korea's Cost Accounting Standards have covered all aspects of costing in three sections: General provisions, Actual Cost Accounting System, and Standard Cost Accounting System.

CMAs are expert professionals who are enriched with enough skills to use the various techniques of costing like Marginal Costing, Standard Costing, Budgetary Costing etc. So, they are the best person to be recognized as VALUE ADDERS in your concern.

Topics:

- ✓ Japanese Costing Practices
- ✓ Canadian Costing Practices
- ✓ Chinese Costing Practices
- ✓ Korean Cost Practices

LESSONS FROM CFO TEAMS IN JAPAN

Japan's cultural tone of conformity and preserving reputation— and how it extends to Japanese companies—is a long-established idea by now. Less well-known outside Japan, however, are the differences in how finance organizations are structured within Japanese companies compared to within their American and European counterparts.

In the United States and Europe, CFO organizations integrate management accountants and certified financial professionals into financial planning both at the corporate and business-unit levels. In Japan, CFO organizations are responsible primarily for accounting and treasury activities and are involved in setting strategy but not leading nor owning such activities. Instead, financial planning and management control are delegated to nonfinance departments, and, generally, business units allocate their own staff to manage profit forecasts and conduct analyses with no direct reporting lines to the CFO.

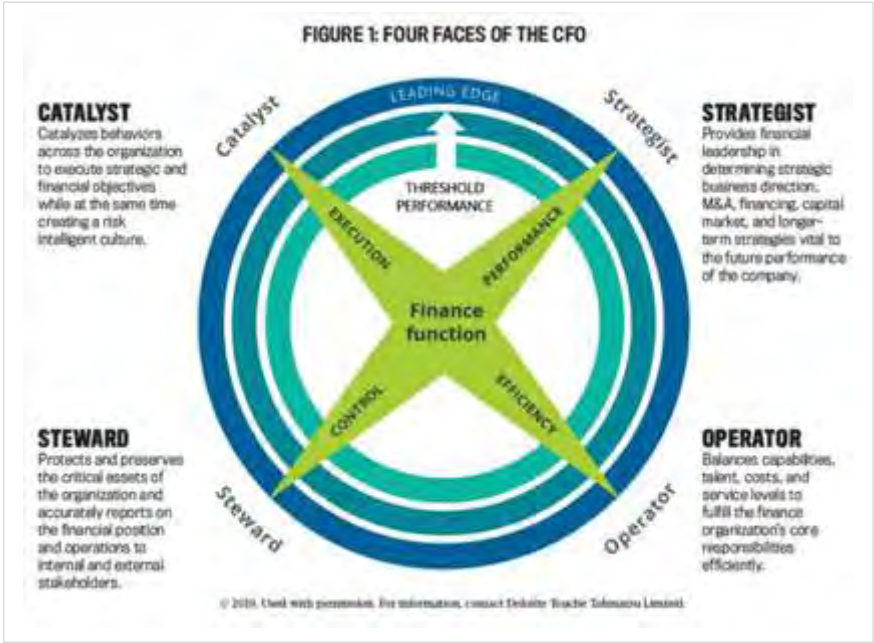
All of this raises some key questions: Has the failure to include qualified financial professionals in planning and strategy contributed to the spate of fraud and ethics cases at Japanese companies? Further, is there any relationship between low profit margins and the structure of the CFO teams in Japanese companies? Can these structural differences provide any insight into the impact that CFO teams have on profitability in companies worldwide?

To help understand the issues, we surveyed members of the Japan Association for Chief Financial Officers (JACFO). Based on the survey, conducted in the fall of 2017, we argue that there's a relationship between profit margin and the structure of CFO organizations. Companies that directly involved CFO teams in management accounting and strategic financial planning saw increased profit margins compared to companies that left financial teams out of strategic roles. Furthermore, we'll suggest three actions that global CFO teams can take to add the most value to their company.

WHO DOES WHAT, WHERE

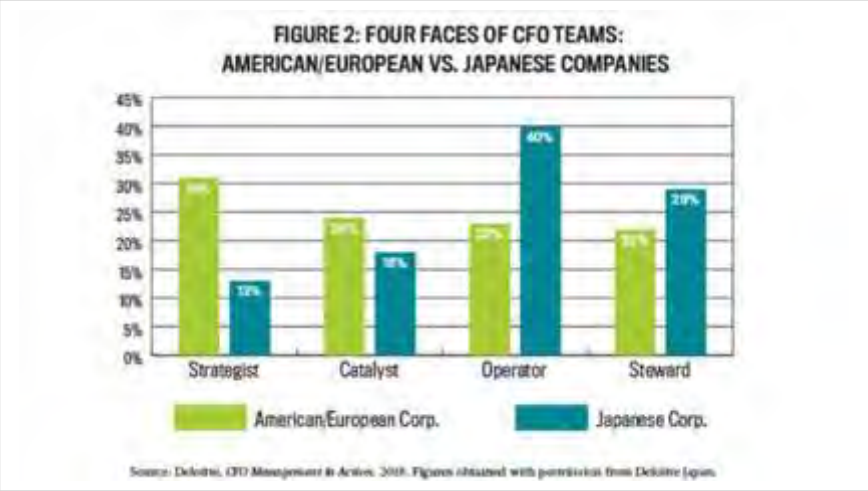
CFO organizations in many Japanese companies tend to focus solely on accounting and treasury roles, leaving other functions—such as "Keiei Kikaku" or corporate planning departments—to oversee mid- and long-term strategy planning as well as the current year's budget setting and forecasting. In comparison, CFO teams in U.S. and European companies generally serve as business partners to the CEO and are increasingly in charge of strategy, financial planning, and budgeting in addition to assuming accounting and treasury roles.

FIGURE 1: FOUR FACES OF THE CFO



In Figure 1, Deloitte sums up the various potential roles of today's CFO. In *CFO Management in Action*, which Deloitte published in Japan in 2018, the professional services firm surveyed CFO teams working for global companies of American and European origin vs. Japanese companies. The results show that CFO organizations of Japanese companies skew toward steward and operator roles (69%) while largely avoiding catalyst and strategist roles (31%).

In contrast, most CFO teams in the U.S. and Europe have evolved to become catalysts and strategists (55%) vs. 45% that see themselves as stewards and operators (see Figure 2).



There's also a difference in how finance and accounting resources are allocated to business units. In American and European companies, finance and accounting team members who report to the corporate CFO are allocated to each business unit, sales team, manufacturing site, and so forth to support business leaders in their mission to grow sales and profitability. Over their careers, these people rotate through different finance roles across business units or organizations so that they can develop additional skills. The most talented of these employees may rise to CFO positions as true business partners in support of CEOs.

By contrast, CFO teams in Japanese companies tend to be located solely at the corporate site, leaving business units—which often don't include certified financial professionals or anyone with any deep finance and accounting knowledge—to make their own financial decisions. Consequently, Japanese CFOs aren't able to ensure the appropriateness of the day-to-day financial decisions made at each business unit, and they only review and approve significant decisions at later stages.

OUR SURVEY

We surveyed members of JACFO between late October and mid-November 2017 and received 220 responses. Nearly nine in 10 CFOs (89%) belonged to either a Japanese holding company/parent company or a subsidiary of a Japanese company; only 11% worked for a subsidiary of a foreign-based company. Therefore, most of the responses were from members who are part of CFO teams at Japanese companies.

For the study, we included 18 kinds of corporate and financial planning functions (see "Key Planning Roles Examined"), which are based on a previous study conducted by the Japan Research Institute in 2016 to examine the roles of corporate planning departments (Keiei Kikaku) of Japanese companies. For each function, we asked CFOs whether they were (A) performing such functions as owners, (B) involved to some extent and supporting other organizations, or (C) not performing these planning functions at all, as in cases where other divisions, such as corporate planning departments or business units, handled such functions.

KEY PLANNING ROLES EXAMINED

1. Set vision/domain area of the company.
2. Set mid- and long-term financial plan.
3. Track mid- and long-term financial plan (how it's being achieved).
4. Set current year budget.
5. Track progress of current year budget.
6. Plan or execute mergers and aquisitions, joint ventures, etc.
7. Plan new business.
8. Set current year budget/tracking for each business unit.
9. Plan, prepare, and run business meetings.
10. Gather and share nonfinancial information, such as economy, market, competition, etc.
11. Analyze profit and loss of each product (SKU), service, store, etc.
12. Propose profitability improvement or termination of specific product (SKU), service, store, etc., based on the profit/loss analysis.
13. Set price or cost for new products and services to achieve profit margins.
14. Lead process for cost reduction.
15. Set and track cost budgets.
16. Decide on capital investments; analyze the results vs. plans.
17. Analyze return on investment and decisions on advertising, promotion, and discounts.
18. Manage general and administrative budgets.

Each of the 18 functions and their relationship to profit margin improvement were examined. Responses were divided into two groups: those who reported that company profit margins had improved in the last three years (55.5% of the total) and those reporting that the profit margin of their companies had stayed the same or decreased in the last three years (44.5% of the total).

THE BENEFITS OF BEING HANDS-ON

To better understand the effect each function had on profitability, we broke down both groups of CFOs to see their level of involvement with each function and ranked each function. Using the t-test, we verified a

statistically significant causal relationship between the involvement of CFO teams in the top-ranked functions in our study and the financial performance of the company.

Consider the differences between the two groups of CFOs when it comes to proposing profitability improvement or termination of specific product (stock keeping unit, or SKU), service, store, etc., based on the profit/loss analysis (function 12). As shown in Table 1, 22.4% of CFOs in Group 1, where profit margin improved, reported owning this role. In contrast, only 7.4% of CFO teams in Group 2, where profit margin stayed the same or decreased, said they own this function.

TABLE 1: HOW CFOs RANK ON A KEY PLANNING ROLE

Propose profitability improvement or termination of specific product (SKU), service, store, etc., based on the profit/loss analysis.

	A. Own the function (perform as the owner)	B. Involved with and support other departments who own the role	C. Not involved at all
Group 1 (Profit margin improved)	22.4%	43.2%	34.4%
Group 2 (Profit margin same or decreased)	7.4%	36.8%	55.8%
Percentage point difference	15.0	6.4	-21.4

Nearly two thirds (65.6%) of the CFO teams in Group 1 companies either own the function or are involved in it (both A and B). For the Group 2 companies, only 44.2% of the CFO teams own or are at least involved in this function. Out of the 18 functions we examined, this difference of 21.4 percentage points was the largest between Groups 1 and 2.

The conclusion to be drawn from this may seem obvious: The operating profit of the total company is the accumulation of profits from many products, services, stores, etc. Therefore, improving product profits would naturally contribute to boosting the company's overall profitability.

Yet many Japanese companies have historically focused on sales goals and market share. Thus, in this type of scenario, little attention was paid to the profitability of each product, service, or store. In addition, product profitability was left to business unit leaders, who tended not to want to terminate laggard products, services, or stores even if doing so would help shift resources to more important, profitable products.

Another key planning role was setting the price or cost for new products or services to achieve profit margins (function 13). In companies where the profit margins improved, the CFO teams were responsible for or at least involved in this function. For those Japanese companies where the profit margin stayed the same or decreased, business unit leaders were responsible for determining pricing and costing of new products or services, and finance personnel weren't involved.

We also found that participation of CFO teams in analyzing return on investment (ROI) and decisions on advertising, promotion, and discounts (function 17) also correlated with improved profit margins. Business units spend significant amounts of money on selling initiatives, such as placing ads or giving promotional discounts. Therefore, it's obvious to expect financial employees to be involved in ROI analyses so that companies make the correct decisions on investments that generate the most returns for the total company.

In many Japanese companies, these functions are implemented by nonfinancial employees located within the business unit. The problem, however, is that these individuals usually don't have sufficient finance and accounting knowledge and could easily become compromised by other interests, such as business unit objectives. Companies will get better results when qualified financial professionals who report to the CFO are involved in these functions and are validating the results.

CFO TEAMS AND PROFIT MARGINS

While our survey results show a strong relationship between the role of CFO organizations and profitability, how do our theories compare with actual successful cases? To get a sense of this, we conducted interviews with a few Japanese CFOs.

The CFO of a consumer goods manufacturing company told us that, through the finance team's support of a corporate-wide major profitability initiative, its operating profit margin increased from 2% to 9%. In addition, after the CEO of the company announced to his management team a new policy of improving profit margins, the CFO team supported the business unit leaders to help calculate profits of each SKU and terminate unprofitable ones. Both sales and profits grew as a result.

Thus, the survey responses and interviews both confirm that there's a relationship between the roles of CFO organizations and improved profit margins. Since Japanese CFO teams generally devote most of their time and effort to functions that don't contribute to profit margins, they have had less influence in positively impacting profit margin growth, compared with American and European companies. This leaves their business units and companies with less-than-stellar profitability and potentially opening the door to fraud.

In light of this new evidence, we hope that CFO organizations in Japanese companies will reexamine their remit and become involved in functions that clearly contribute to greater profitability. Further, by involving certified financial professionals with sound ethical training as strategic business partners at all levels of the company—from the CEO to business unit leaders— Japanese companies may avoid some of the lapses in governance and management oversight.

The takeaway for the management accountant or finance professional remains the same, however: Proactively and strategically partnering with business departments to provide objective analysis for improved decision making will help ensure profitability, growth, and, ultimately, a strong and trusted presence in the marketplace.

CASE STUDY: GREE, INC.

To further illustrate the benefits of finance's involvement in planning functions at Japanese companies, we spoke with Shozo Mizuno of GREE, Inc., a gaming, advertising, media, and live-entertainment company with 1,700 employees. Mizuno joined GREE in October 2013 as executive officer, chief director of Business Administration, responsible for finance, accounting, and controlling.

Before joining GREE, he worked for Panasonic Corporation and oversaw finance, accounting, investor relations, and audit. At Panasonic, the CFO organization was aligned to the American/European model, where the CFO team allocates resources to business units and supports them for business decisions, unlike the protocols at traditional Japanese companies. Therefore, Mizuno gained this strategic mind-set and was accustomed to the CFO team supporting business decisions.

Mizuno joined GREE just when the company's sales and profits started to decline as a result of too-rapid growth after its start-up phase. He discovered that GREE reviewed only top-line growth (total company financial statements) but didn't have a system in place to understand the financial performance of its business units. Together with IT, Mizuno set up a system so that business units can implement the Plan, Do, Check, Act (PDCA) cycle. The result? GREE closed its 2018 financial year with sales of more than JP¥77 billion, enjoying positive growth after a steep decline in sales and profits.

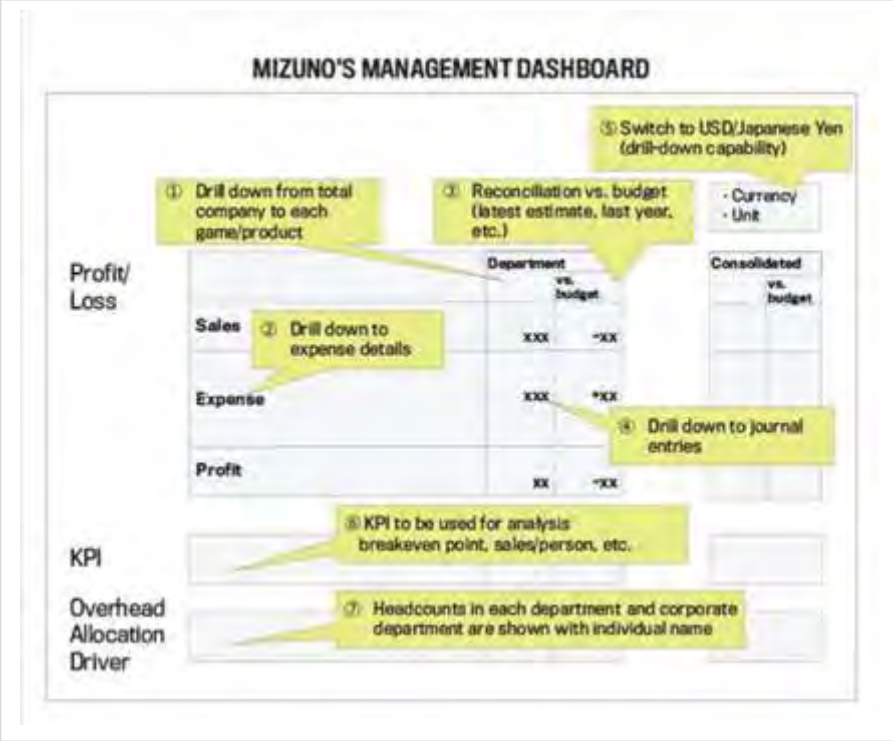
The following interview with Mizuno has been lightly edited for clarity.

SF: Could you briefly describe the project where you oversaw a recent initiative to improve internal management reporting through IT?

Mizuno: The goal of the management dashboard project was to enable each business unit owner to be accountable for the profitability of their own business. With this IT tool, they can easily check sales and expenses by drilling down to the details by themselves, reconciling vs. the original budget, or even reconciling against any other updates, including the current plan or other forecasts. Business units can now update their future plans in a timely manner so that they can quickly take necessary business actions, such as fixing issues, cutting expenses, or investing more to grow sales. Thus, the company can execute the PDCA cycle rapidly and take actions for improvement using the IT tool. Also, the management team can transparently review KPIs [key performance indicators] for each business unit and their achievement.

SF: How else is your management dashboard helping the company improve its overall financial performance?

Mizuno: The management dashboard is improving our speed and quality of management control and helps us to properly estimate, approve, and control investments for creating new games. Thus, we can manage sales and profit of our main game business, which is volatile by nature. The company is now investing profits from the main pillar of its game business in the second pillar (advertising and media) and the third pillar (live entertainment) for the further future growth of the company.



SF: Can you share more in terms of how the finance team at GREE is contributing to the profitability of the company?

Mizuno: When I first joined GREE, the CFO team working at the corporate level was mainly focused on accounting. I spent significant time on training and developing people, guiding them to be able to help business to take actions. Now I've transferred finance resources to each business unit/subsidiary so that such finance resources can directly support the business unit, like the CFO organization that I experienced at Panasonic. Our credo is that the finance and accounting teams exist to support business to take actions for profitability improvement.

Author(s):
CHIE IKEGAWA, CPA
Member, IMA Tokyo Chapter

NINA MICHELS-KIM, CMA, CSCA
Director of business development for Japan and South Korea, IMA

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COST ACCOUNTING STANDARD AND COST ACCOUNTING SYSTEMS IN JAPAN LESSONS FROM THE PAST – RECOVERING LOST TRADITIONS

This paper aims to show two things. The first is how Japanese culture has contributed to the development of Japanese cost accounting history. The second is to reveal the research possibilities of cost accounting history. This paper also reviews the salient features of several important examples of these aspects of cost accounting practice in Japan. It therefore explores, through some practical illustrations, how and why Japanese cost accounting differs from that found in the West.

Introduction

Adopting a historical perspective in research facilitates the study of the myriad of influences which impinge on the development of accounting practice. The longitudinal view allows a chronology of significant factors to be identified. In the case of Japanese costing, this includes the influence of Germany and the UK before the Second World War, and subsequently the USA, on the creation of cost accounting standards. Historically, therefore, Japanese cost practices owe much to Western influence, although this is not easily appreciated from an examination of contemporary practice. Indeed, Japanese costing has been considered quite distinct from that found in the West. This is because, over time, western 'imports' have been moulded and changed by the society in which it has been used. Fitting Western practices to Japanese culture has resulted in transformation of both the techniques and of the way in which they are used. This paper provides some examples of how these processes have occurred.

Japanese cost accounting system for financial statements

Cost accounting standard

The Japanese cost accounting system for financial statements is based on the Cost Accounting Standard, with the current standard having gone through three steps (Ota et al., 1983). As part of the policy to promote rationalization of Japanese industries, the Product Cost Accounting Rule (Seizou genkakeisan junsoku) was established in November 1937 in order to diffuse and enlighten knowledge of cost accounting. This is the first standard to focus on cost accounting in Japan and was considered to be voluntary, enlightening and recommendable to Japanese companies.

Unfortunately the China Incident (Sino-Japanese War) occurred in 1937 and so the Army and Navy set up their own cost accounting rules in 1939 and 1940 respectively. The purpose of these rules was primarily to control the price of munitions. Plurality of rules caused problems not only for the munitions industry but also for the purpose of national product price controls. Therefore, the government really needed an integrated or united cost accounting rule. The Manufacturing Industry Cost Accounting Guideline was introduced in April

1942 to replace the cost accounting rules of the Army and Navy. The purpose of this guideline was to control commodity prices and to increase the efficiency of management because of the Second World War.
After the Second World War, Japan was in a state of economic disorder, so the government used the cost accounting rule to control prices with effect from 2 March 1948. The economy was stabilized little by little and the

government made efforts to improve productivity, and one result of this policy was the introduction of a modern cost accounting standard. The Business Accounting Deliberation Committee of the Ministry of Finance, formerly the Business Accounting Standard Committee of the Economic Stabilization Board, started to develop the Cost Accounting Standard on 16 November 1950 but did not succeed until 8 November 1962. The three key aspects were:

1. Nature and basic structure of the cost accounting standard. The new standard codified best practices based on contemporary generally accepted cost accounting practices. This normative approach merely made the basic cost convention clear. Members of the council studied not only cost accounting systems in the US, UK, Germany and elsewhere but also visited Japanese manufacturing companies and studied practical cost accounting systems by obtaining co-operation from Yahata Steel, Mitsu- bishi Electric, Sumitomo Chemical, Fuji Textile, and others.

   The conception of this standard had more in common with 'Die allgemeinen Grundsatze der Kostenrechnung' (1939) than with 'Report of the Committee on Cost Concepts and Standards by AAA' (1951). In other words, the cost accounting standard was not only intended to make cost accounting principles clear but also to make the standard a foundation of cost accounting as part of an accounting system.

2. The application of the cost accounting standard. The cost accounting standard was not just a standard to enlighten and diffuse knowledge of cost accounting, but to have a social binding power for Japanese companies. The cost accounting standard made the basic framework of cost accounting practice clear in Japan although companies could not be punished by law even if they violated the standard. Therefore, companies could implement their own cost accounting practices under the standard.

   This standard applied to all companies in Japan, but application depended on industry-type, business condition and size of company (Cost Accounting Committee for Small Companies, 1958). Also, some industry groups had their own cost accounting manual or handbook of cost accounting procedures. For example, the military industry had their procurement manual (Defense Equipment Society, 1989), while the preventive maintenance industry had a cost accounting handbook (Govern- ment Buildings Department of Minister's Secretariat in the Ministry of Construction, 1991). These manuals and handbooks were, however, based on the Cost Accounting Standard.
3. The framework of the Cost Accounting Standard. This standard indicated that cost accounting has five purposes:

   1. price setting;
   2. preparing financial statements;
   3. cost management;
   4. budgeting and budgetary control;
   5. setting basic plans and making decisions.

However, this standard does not define or describe the practical methods of cost management, budgeting and budgetary control, or the setting of basic plans and making decisions. The contents of the cost accounting standard are as follows: Chapter 1 The purpose of cost accounting and its general standard; Chapter 2 Actual cost accounting; Chapter 3 Standard cost accounting; Chapter 4 Accounting and analysis of cost variances; and Chapter 5 Accounting for cost variances.

Cost accounting system for financial statements

There are fundamentally two types of conventional cost accounting systems found in Japan, job costing and process costing. Within the latter system, which prevailed (in 88 companies out of 137 in the sample), lot costing is the most popular system variation (48 companies out of 88) (Yoshikawa, 1989). The lot costing system is termed 'mehrstufige sortenkalkulation'. Its origins therefore

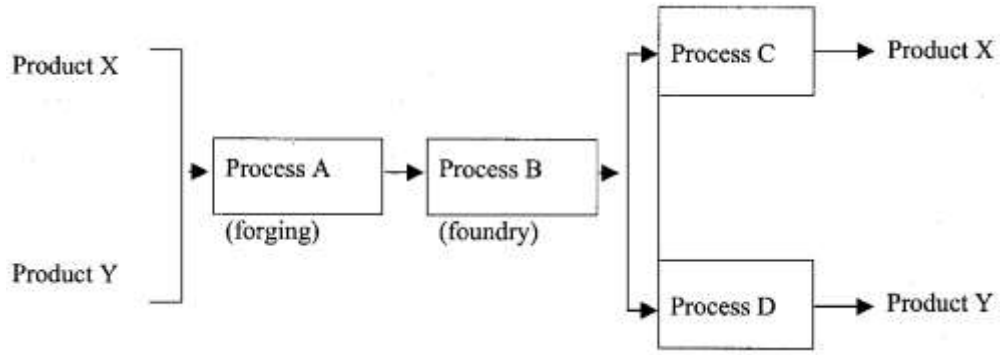


Figure 1 Lot-costing systems

probably lie in Germany (Accounting Study Office of Kobe University, 1984). This cost system is mainly applied in the food, chemical, automobile, electrical and electrical machine sectors. The nature of the lot costing system is illustrated in Figure 1. Here it is assumed that product X is manufactured through process A (forging), B (foundry) and C, and product Y through process A, B and D. Therefore, the product costs of product X determined by a lot costing system are the total direct costs of process C and the allocated common costs of process A and B. The product costs of product Y are the direct costs of process D and allocated costs of common costs of process A and B.

One of the main reasons why lot-costing systems are common in Japan is due to manufacturers' preoccupation with developing economic production systems. Companies do not wish to fund individual production lines for each product and thus they have shared production processes. Production flexibility is therefore a major pursuit of the manufacturer. For example, if it is assumed that 2,000cc engines and 3,000cc engines are being manufactured, there will be many instances in the forging and foundry processes which are shared by both product lines. As a result, cost accounting is complicated because of the need for many cost allocations. If each engine had its separate forging and foundry process many of the allocation problems would disappear, and more accurate cost figures for each product could be determined. This would not happen in Japan as production decisions are not designed to facilitate accounting. Management accounting is the servant of production, not its master.

The cost accounting system for managerial purposes

Cost accounting systems for manufacturing industries

Although cost accounting is taught in Japan in a similar fashion to that found in the West (in fact many Western texts are used), cost accounting records are maintained differently. The cost accounting practices can be explained based on Figure 2.

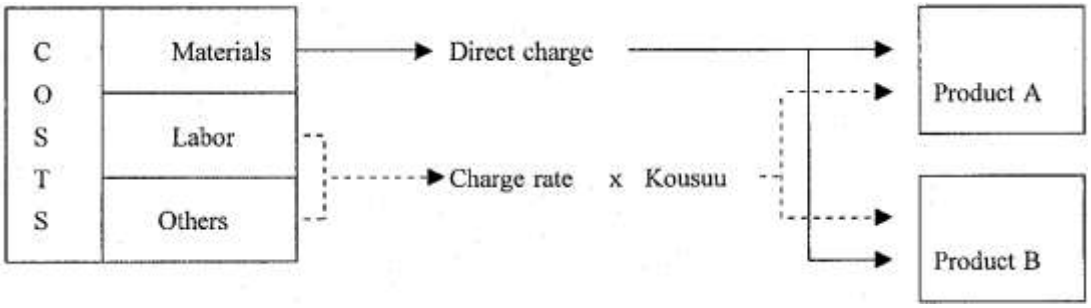


Figure 2 Conventional Japanese cost accounting system

Material costs are charged directly to products by multiplying cost of materials by the amount of consumption. The components which comprise the cost of materials are the invoice price of materials and actual purchase expenses such as freight, insurance, duty and purchase commission. Conversion costs such as labour costs and other costs are charged to products based on multiplying a charge rate by Kousuu. These Kousuu comprise working hours expressed, for example, such as man-day, man-hour and man-minute (Ikenaga, 1984). The working hours needed to manufacture one unit or one lot of product are as Figure 3 (Ikenaga, 1984).

The variety of Kousuu or working hours in force in any firm depends on the nature and types of conversion cost which exist. One example, based on Figure
3, is as follows (Ikenaga, 1984: 6–7).

1. Preparation hours for one lot: working hours for manufacturing preparing or set-up.

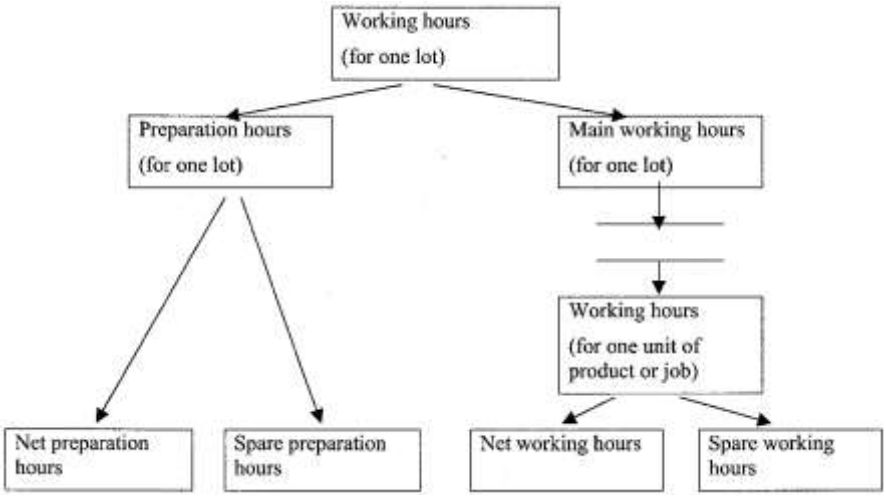


Figure 3 Hierarchy of working hours for manufacturing one lot of products

2. Main working hours for one lot: working hours for manufacturing products.
3. Working hours for one unit of job or for manufacturing one unit of products: essential working hours to carry on one unit of job.
4. Working hours for one lot: preparation hours for one lot + (working hours for one unit of products or job ´ number of products for one lot).
5. Net working hours: working hours for routine works.
6. Spare working hours: essential allowance to carry on routine works.

For the other examples, product labour costs are calculated by multiplying the average wage rate by Kousuu based on labour hours, and product depreciation costs are calculated by multiplying the average depreciation charge rate by Kousuu based on machine hours.

The wages of employees are not simply paid by the type of work done but by the age of workers. For example, younger workers working at an assembly section are more efficient than older workers, but they are still paid lower wages. The wage rates applied are based on the average wage rate for each type of work or the average in a plant. To be more specific would clash with Japanese culture.

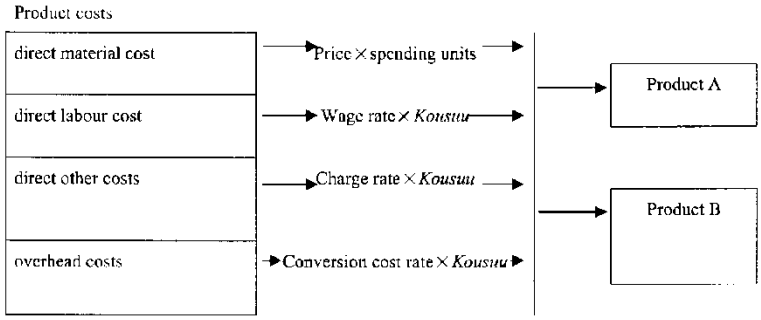
Cost accountants typically calculate expected product costs on the above basis every month and compare them with actual costs. If differences are found, they are isolated in cost variance accounts until the end of the year when they are written off. Also, on a monthly basis, cost accountants predict the expected Kousuu and compare them with their actual values. If differences are established, investigations will commence to ascertain the reasons. Thus, cost accountants have to produce not only financial information on the monetary level of costs but also physical or non-financial information (Kousuu) which indicates the under- lying patterns of real resource consumption.

Cost accounting system for military industries

Figure 4 provides another example of a cost accounting system, this one relating to military industries (Defense Equipment of Construction, 1991).

If it is difficult to apply the above because of using different production equipment or production process or type of production, then one of the following equations can be applied:

1. Overhead costs = direct material costs x (overhead costs for certain period / direct material costs for certain period)
2. Overhead costs = Machine Kousuu x (overhead costs for certain period / machine hours for certain period)
3. Overhead costs = direct labour hours (number of output) x (overhead costs for a certain period / direct labour hours (number of output for certain period))
4. Overhead costs = omission



Direct material costs:

Direct material costs = Price of materials × spending units of materials

Direct labour costs:

Wage rate = direct labour costs for certain period / number of *Kousuu* for certain period

Direct labour costs = Wage rate × *Kousuu*

Direct other costs:

The direct other costs (e.g. design costs, inspection costs) can be calculated as follows:

Design costs = design costs rate × design *Kousuu* (design hours)

Inspection costs = inspection cost rate × inspection *Kousuu* (inspection hours)

Overhead costs:

Overhead costs = overhead costs rate × *Kousuu*

= overhead costs for certain period / *Kousuu* for certain period × *Kousuu*

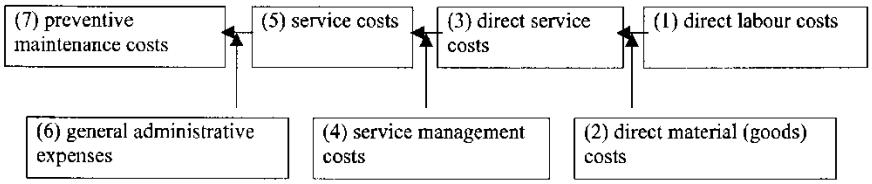
Figure 4 Cost accounting system for the military industry

Cost accounting system for preventive maintenance industries

This example relates to a cost accounting system for preventive maintenance industries (see Figure 5) (Government Buildings Department of Minister's Secretariat in Ministry of Construction, 1991).

The nature and use of the Kousuu system

Kousuu are working hours for manufacturing one unit of product or to carry out one job. They encompass all of the major resource elements of conversion and support cost and typically are measured in terms of either the direct or indirect labour time or machine time of the production factors which constitute the



(1) Direct labour costs = wage rate × *Kousuu* × number of machines

(2) Direct material (goods) costs = Price × spending units

(3) Direct service costs = (1) + (2)

(4) Service management costs = accumulation of actual costs

or = service management costs × direct service costs

(5) Service costs = (3) + (4)

(6) General administration costs = general administration expenses rate × service costs

(7) Preventive maintenance costs = (5) + (6)

Figure 5 Cost accounting system for preventive maintenance industry

organization. A complete set of Kousuu thus represents a detailed inventory of all of the conversion and support activity undertaken in the firm. Thus, Kousuu can be based on production processes, work cells, machines and service functions such as maintenance and materials handling.

This type of information can be usefully presented in various ways. For example, with an input object focus, it can be designed to represent the time distribution of the various work elements comprising a production line, a shift, or a factory for any specified period of time. Alternatively, by focusing on an output object, Kousuu may also be expressed in terms of the various time components of the work required to produce one unit of final product. In this latter form it is known as Gentan-i (Government official document, 1942). A Gentan-i therefore profiles the pattern of non-direct material resource consump- tion by individual product lines. This approach provides one basis for both the derivation and assessment of standard costs, as well as providing a working performance measure in its own right. Finally, to accommodate the financial dimension, a charge rate can be computed for each Kousuu based on the cost of the resources which contribute to the labour and/or equipment input of the relevant activity. This can then be used to convert the Kousuu work times into costs which can be applied to all of the above types of cost object. In Japan, Kousuu are extensively used in the manufacturing

sector and their design and operation are widely referenced in applied texts (e.g. Defense Equipment Society, 1989; Government Buildings Department, 1991).

Kousuu provides the basis for generating a regular flow of highly detailed information on operational performance. This information not only provides timely feedback to management but provides the foundation for three specific areas of cost management.

Operational Management

Figure 6 outlines how the analysis of Gentan-i and Kousuu can provide a wide- ranging input to the management process.

Kousuu information allows a comprehensive monitoring of the conversion cost elements of all in-house products, and enables relevant standards of performance to be established and communicated to all concerned. When multiplied by the appropriate charge rates, Kousuu forms the basis of a cost accounting system for products. Consequently, it provides one of the key decision inputs for the manufacturing company. For example, in Gentan-i form it underlies unit cost levels and is therefore a useful basis for evaluating productivity and establishing future plans and targets.

Kousuu provides insight into product portfolio analysis and planning. Controlling cost is one way of improving profitability and reductions in Kousuu are one means of achieving this aim. Alterations in Kousuu also have implications for pricing policies to be adopted by the firm. Finally, the success of value engineering activity (undertaken to achieve target cost levels) can also be achieved by delivering changes in Kousuu and the work time spent in producing for inventory rather than specific customer orders can be identified.

Kousuu, budget and costs

One important aspect of Kousuu is the key role which it plays in establishing meaningful targets for the production function and in the translation of these

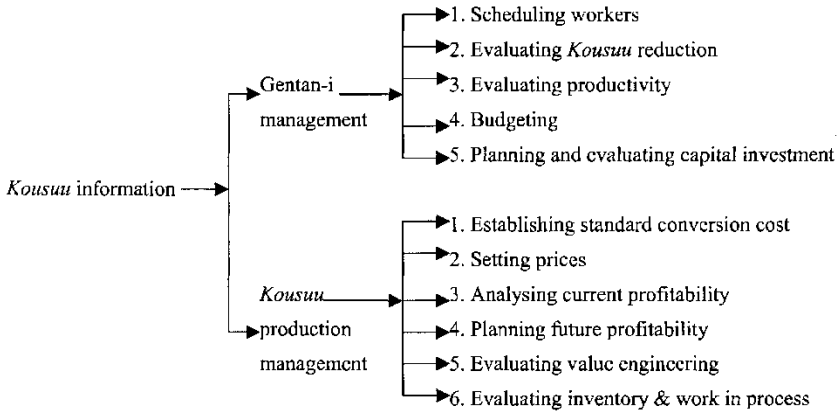


Figure 6 Operational management

targets into budgets. Figure 7 outlines how Kousuu is used for these purposes.

The generation of budgets in Kousuu form underlies the financial budgeting process. Thus the work time implications of budgets are also available and can be used to communicate both the budget and variance feedback to the appropriate areas of responsibility in the firm. The Kousuu thus contributes to the conversion cost budgets and through this element of the master budget to the overall profit plans and budgets of the organization.

Kousuu and value engineering

Kousuu are also an important element in the Japanese firm's value engineering work. Targets are established at divisional level in terms of revenues, costs and profit margins. These are then decomposed to provide guidelines for the production sections in the firm. For conversion cost, these take the form of Kousuu. The production section will use the firm's value engineering section to assist it in modifying its process of manufacturing (and in altering the product design) to achieve the set targets. Where significant cost reductions are required,

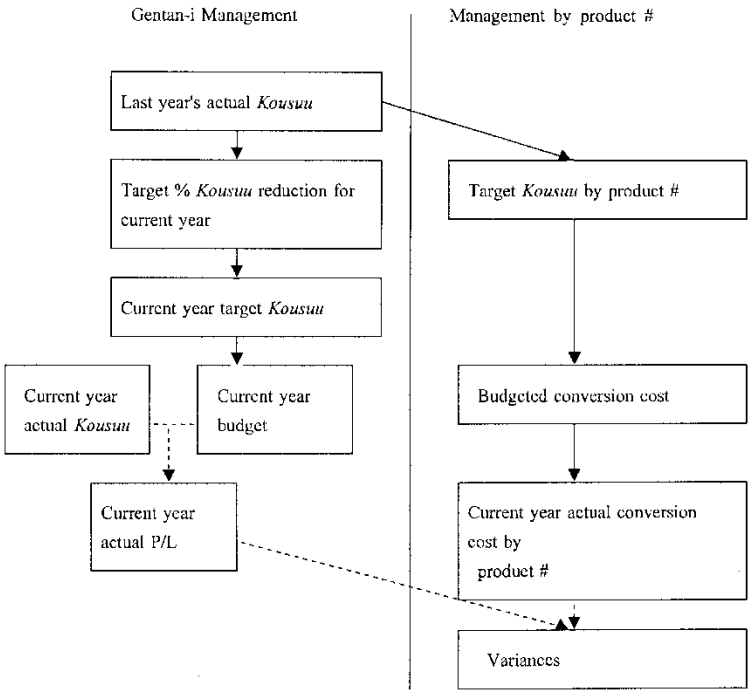


Figure 7 Kousuu, budget and costs

the necessary changes are identified from analysis of past Kousuu and are expressed in the time and work changes profiled by the Kousuu. Thus Kousuu, rather than costing, provides the basic guidance for identifying and managing the continuous process of enhancing productivity and reducing cost (Yoshikawa et al., 1997).

Summary and conclusion

This paper is mainly concerned with the nature and rationale of Japanese cost accounting standard and cost accounting systems. Its primary focus is on the technical considerations that characterize and differentiate Japanese costing practice. These are presented and assessed in the following related stages: the type and purpose of alternate cost accounting systems, cost recording, and cost reporting.

The cost accounting standard in Japan is the foundation for every company. According to this standard, there are five main purposes of cost accounting: price setting; preparing financial statements; cost management; budgeting and setting basic plans. As far as the type of cost accounting is concerned, there are two fundamental types of conventional cost accounting systems recognized, job costing and process costing. One of the interesting Japanese methods is known as lot costing in the process costing. The implications of the standard on the nature of cost accounting systems are considered in this paper. There are two broad types of cost accounting records. First, costing records for making financial reports, and second, costing records for managerial purposes. Costing records for financial reporting are similar to Western methods, but costing records for managerial purposes are different. For example, for managerial purposes, material costs are directly charged to products by multiplying cost of materials and amount of consumption. Conversion costs are charged

to products based on multiplying a financial charge rate by Kousuu. Therefore, the variety of Kousuu to be found by the nature and types of conversion costs. The Kousuu set has become a key factor for Japanese cost accounting.

In Japan, there are a considerable variety of cost reporting methods based on the purposes for which cost information is prepared. One of the interesting variations is to report not only cost figures but also Kousuu for cost management. Cost management in Japan is synonymous with topics such as target costing, functional analysis, value engineering, TQC, and Kaizen activity. However, it is very important to know that if these approaches cannot reduce the number or level of Kousuu, they do not retain credibility for cost management because they will not then reduce the final product cost. Their impact on Kousuu is therefore a key test of their value for cost management.

A lot of research possibilities emerge from cost accounting history. One is to translate the following materials from Japanese to English and analyse them from an historical cost accounting point of views:

1. Product Cost Accounting Rule.
2. The Manufacturing Industry Cost Accounting Guideline for Army and Navy.
3. The summary of essential points for Gentan-i costing implementation, 7 July, 1942.
4. The Cost Accounting Standard by Business Accounting Council of Ministry of Finance, former Business Accounting Standard Council of Ministry of Finance.
5. Explanatory Cost Accounting Standard, 1963.

Author:
Takeo Yoshikawa
Professor of Management Accounting, Graduate School of Business Administration, Yokohama National University, Kanagawa, Japan and Visiting Professor at the University of Edinburgh, UK.
Source: https://www.tandfonline.com/doi/pdf/10.1080/09585200126618?needAccess=true

ACTIVITY BASED COSTING IN CHINA: A CASE STUDY OF Xu Ji ELECTRIC CO. LTD

Findings – Xu Ji's ABC systems

ABC system at the first production division[1]

Prior to the ABC introduction in 2001, Xu Ji operated a traditional Chinese state-enterprise accounting system (see Figure 1). A large amount of manual book keeping work was involved. Accounting was driven predominantly by external financial reporting purposes and inaccuracy of product costs became inevitable.

At this time, Xu Ji underwent a series of flotations (Liu and Pan 2007), following China's introduction of free market competition. Xu Ji, as a former SOE used to produce products based on a state production quota and was forced to face up the market competition. The inaccuracy of the traditional costing information seriously impeded Xu Ji's ability to compete on pricing. Xu Ji urgently needed a better costing system so commissioned ABC implementation. The two main tasks for the ABC system were:

- to trace direct labour costs directly to product and client contracts
- to allocate manufacturing overheads on the basis of up-to-date direct labour hours to contracts.

The ABC system was successfully implemented in 2003 after some teething problems were solved. Some problems included compatibility of information systems and misinterpretation of ABC concepts by IT programmers (see Figure 2).

In 2004, the organisation was restructured into independent companies – i.e. electricity grid, industrial electric and energy. Internal management structures were subsequently changed, which resulted in abandonment of some activity cost drivers. For example, new management of product line testing and engineering design activity cost centres switched to other forms of monitoring front-line performance instead of using respective testing labour hours and design hours (see Table 1). Therefore, testing labour hour and design hour information was not updated and perceived to be 'extra work' by front-line data input staff.

There have been continuous and rapid organisational structural and management changes since 2003. For example, changes to the management structure led to a merger of panel installation, panel wiring and wire labelling activity cost centres, to become one independent profit centre. A fixed value

Figure 1: Xu Ji's traditional costing system

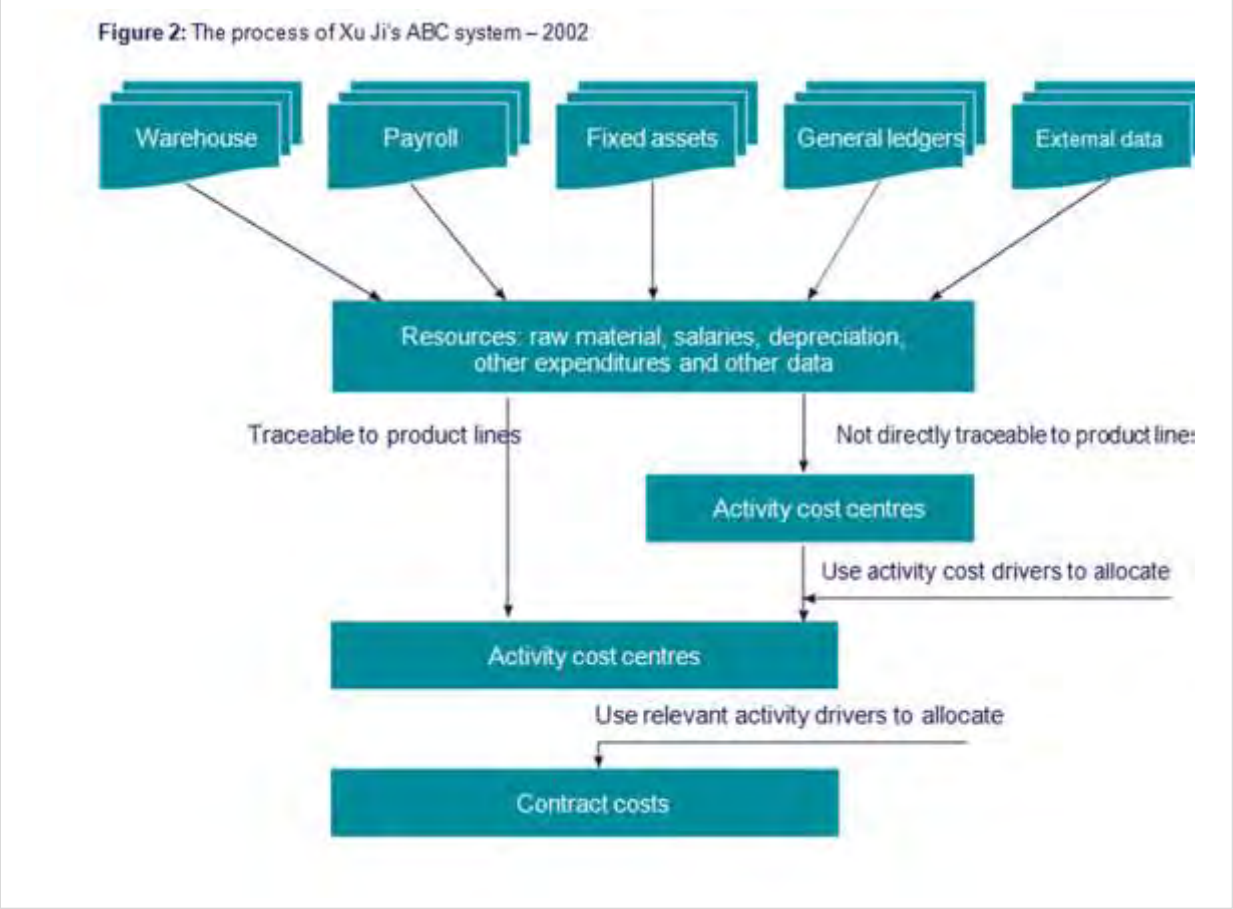
*Note: in Xu Ji, direct labour cost – instead of being charged directly to products – was allocated first to production departments then to finished products. This practice was common in some Chinese manufacturing companies as it was relatively difficulty to track direct labour to individual products without using sophisticated tools such as Manufacturing Resource Planning (MRP) systems or some elaborate recording mechanism within a mass production.

[1] In 2001, Xu Ji's main production departments comprised of the first production department (FPD) and second production department (SPD). FPD manufactures Xu Ji's high yield products such as high-voltage electric equipment. SPD manufactures relatively low yield products such as safety and automation systems.

was decided between top and line managers to assign to each panel, however managers claimed they referred to the original ABC cost to set the value. Nevertheless some quantitative cost drivers – e.g. number of leads – faced threats of being non-recorded or inaccurately recorded. Managers gradually moved to use profit and/or revenue measures to monitor performances. These changes have limited the impact of ABC system and accuracy of ABC information.

ABC system at the Relay subsidiary

Xu Ji Relay company manufactures many different relay products and sells internally to other Xu Ji subsidiaries as well as outsiders. The organisational structure is independent to the rest of the group and has full financial autonomy. Relay operates in a highly competitive and saturated market, so its main aim has been to survive and avoid closure. An urgent need was to get their product costs right, as commented by one of its managers that, *'Our selling prices were all over the place as we did not know exactly how much it cost us to make one relay, would one type of relay cost more or less, to top it all, we were making losses, large unsold stocks…'*



With the lessons learnt from the ABC implementation, Xu Ji's ABC team, together with Relay accountants and the software company – which developed FPD's ABC system – embarked on developing its own ABC system at Relay in late 2004. The cost structure in Relay comprised 85% direct materials and 15% direct labour, variable and fixed overheads. During the implementation, the team realised the main inaccuracy of product costs was not the use of out of date planned material cost information but the lack of standardised working practices and lack of inventory control. Relay still recorded inventory manually. Huge discrepancies between

accounting figures and physical stock were treated as monthly manufacturing overheads. Xu Ji's top management decided to invest in office computerisation at Relay. The first step was to develop a computerised material cost recording system in order to capture the actual material quantity information and stock movements between warehouse and assembly lines. In addition, standardised procedures for recording and inventory control were put in place and enforced by building into employees' personal key performance indicators (KPIs). It took Relay nearly four years between 2005 and 2008 to fully embed these changes.

Table 1: Sample of activity cost centres and cost drivers – 2002

Department	Activity cost centres	Cost drivers
General	Basic research and development	Forecasted product line revenue
	Marketing	Finished contract revenue
	General administration	Number of employees at each product line
Production	Panel installation	Number of panels
	Panel wiring	Number of leads
	Set of terminals	Number of panels
	Wire labelling	Number of leads
	Electric case testing	Test labour hours
	Material management	Finished contract revenue
	Management	Finished contract revenue
	Warehouse management	Finished contract revenue
Department	**Activity cost centres**	**Cost drivers**
Product line	**Customised research & development**	**Contract forecasted revenue**
	Product line testing	Test labour hours
	Engineering design	Design hours
	Marketing research	Finished contract revenue
	Onsite testing and maintenance	Finished contract revenue
	Management	Finished contract revenue

After a trial run in 2009, Relay's ABC system started to produce monthly ABC reports (see Figure 3). The ABC system matched its organisational structure and cost drivers for allocating facility sustaining costs are shown in Table 2.

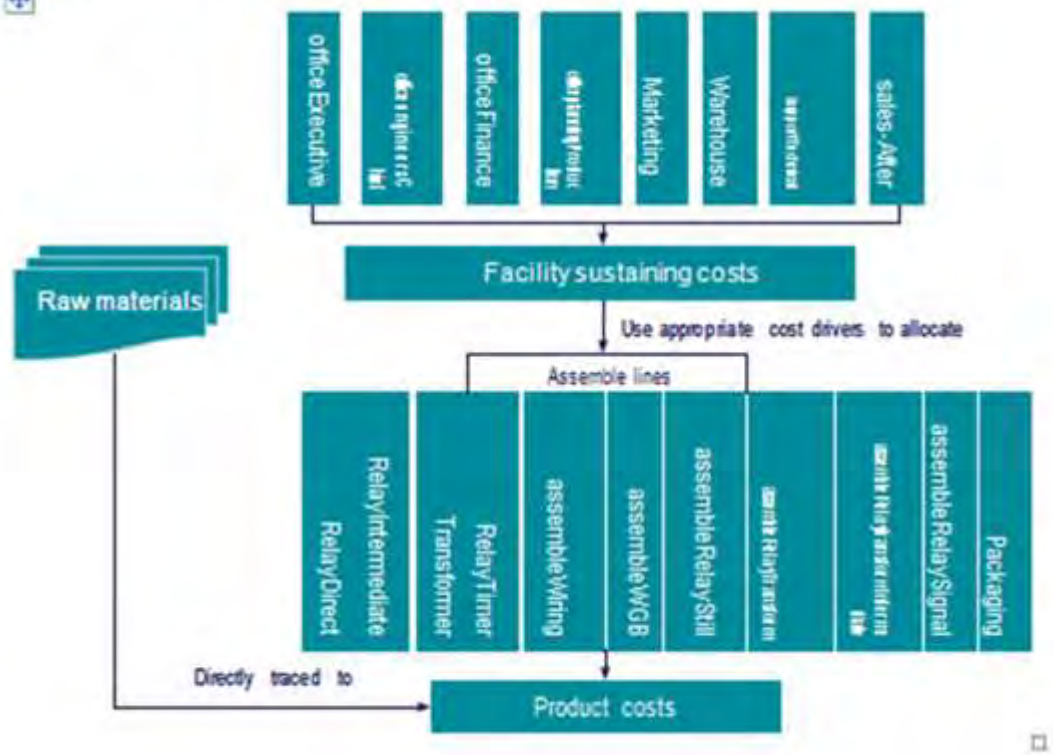
In 2010 Relay achieved a record annual sales increase of 50% higher than 2009 and a net profit margin increase of 13%. Staff members at Relay gained positive experience from the ABC implementation. The Relay accountant commented, *'I am now very confident at our product costs. In turn our marketing people can compete faster and better in our market places.'*

Table 2: Relay's activity cost centres and cost drivers

Departments	Activity cost centres	Cost drivers
Facility sustaining costs		
General	Executive office	Number of assemble line employees
	Finance	Number of assemble line employees
Technical support	Chief engineer office	Proportion of product revenue of assemble lines
	Technical support office	Proportion of product revenue of assemble line
Production	Production	Proportion of product revenue of assemble line
	Warehouse	Proportion of product revenue of assemble line
Marketing	Marketing	Proportion of product revenue of assemble line
	After-sales	Proportion of product revenue of assemble line
Assemble line costs		
Assemble lines	Direct relay	Direct labour hours
	Intermediate relay	Direct labour hours
	Transformer	Direct labour hours
	Timer relay	Direct labour hours
	Wring assemble	Direct labour hours
	WGB assemble	Direct labour hours
	Transform relay	Direct labour hours
	Intermediate transform replay	Direct labour hours
	Signal relay	Direct labour hours
	Packaging	Direct labour hours

Added the manager, *'In our Relay markets, timing is very important. We can now give quotes in a click of button. We do not keep large stock now and produce on order. Our material cost recording system gives us actual cost information. This in turn has made our staff more aware of cost savings. For example they now make full use of one piece material before discarding it...'*

Figure 3: ABC process at Relay

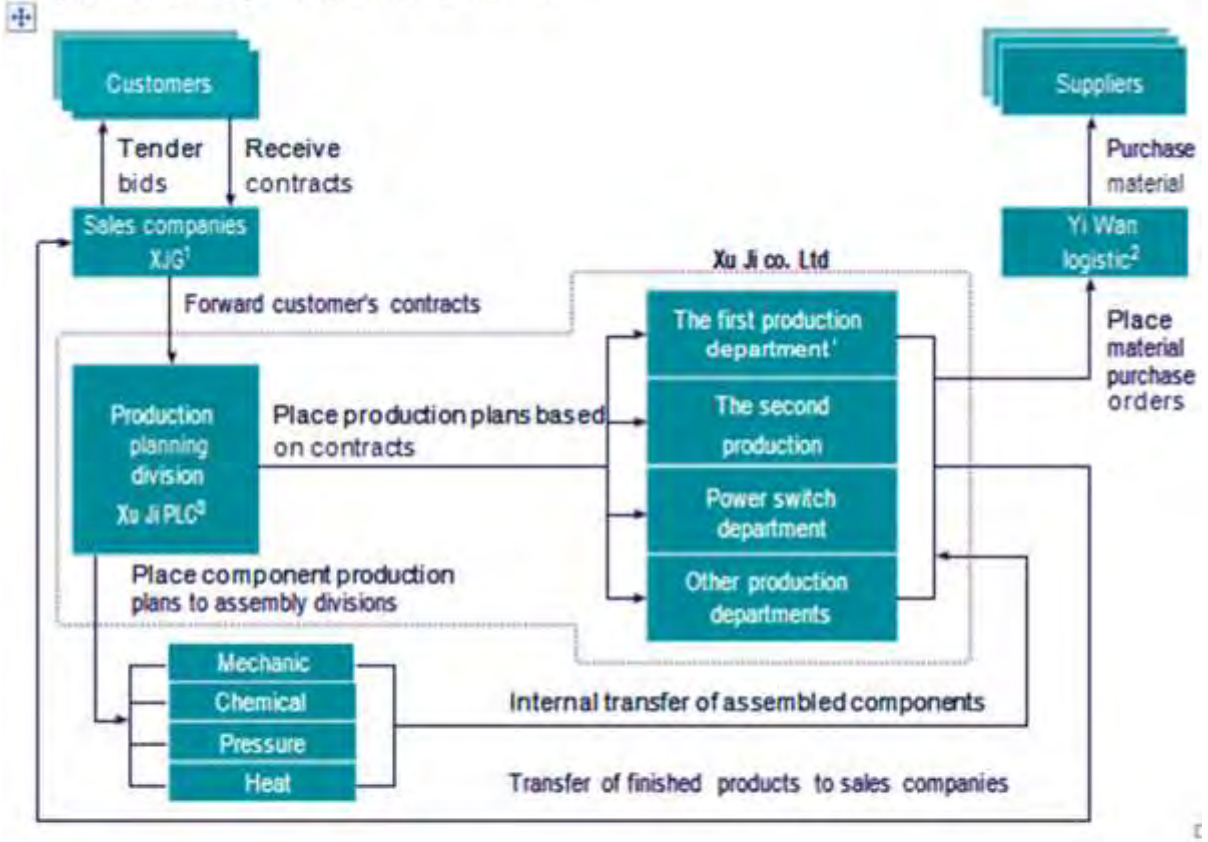


ABC analysis at the sales companies

The sales companies used to be subsidiaries of Xu Ji Group (XJG) – see Figure 4.

Prior to the realignment, Xu Ji had no direct control over the ways in which the sales companies. operated as XJG decided on selling prices of products transferred from Xu Ji to the sales companies. Being a traditional production unit, Xu Ji did not have any marketing and sales expertise. The realignment of some sales functions with the three companies brought Xu Ji much needed sales and marketing expertise. However Xu Ji top management still did not have enough know-how to manage the sales operations, sales people or expenses control. For example, Xu Ji's CFO commented that, *'I wanted to know what the industry norm is in terms of selling expenses over sales revenue… it gets more complicated when you need to spend or invest now to build relationships, in order to get future business or contracts. What is the balance?'*

Figure 4: A schematic diagram of Xu Ji's data flow process – 2001



Notes:

1. The sales companies of XJG is an independent business unit, which deals with all sales orders for the group. The sales companies charges Xu Ji for relevant expenses except the salary costs of its sales staff.
2. Yi Wan Logistic is one of the subsidiaries of the group and the sole authorised purchasing company for the group. The company purchases all raw materials and components which are not manufactured internally. Yi Wan Logistics charges a commission of 0.1% for all purchases.
3. The main functions of the production planning division are to set production plans based on customers' specifications and place production orders to both production departments and component assembly divisions.

Source: Liu and Pan (2007)

The managing director of Electricity Grid stressed that, *'Our ABC system is basically to capture direct costs and manufacturing overheads, over which an average of 80% is the cost of raw materials, determined by the markets. We have done work to streamline our processes as well as to control our costs since [the ABC implementation]. We managed to become very lean. Other costs such as management and sales expenses have been creeping up year on year and are outside of the ABC system. So it is now time to take a closer look at these costs and find ways to control them…'*

The researchers teamed up with the Xu Ji ABC team and set up a project team, aiming at undertaking a detailed analysis of sales activities at the three sales companies. The original objectives were to establish appropriate activity cost drivers which linked sales expenses to contracts and to incorporate the sales expenses into the existing ABC system.

Based on detailed analysis, the sales expenses were analysed into stages based on the nature of sales activities and associated cost drivers were proposed in Table 3.

Table 3: Activity analysis of sales and proposed activity cost drivers

Sales expenses (activity involved)	Activity level	Proposed cost drivers
Front-stage – marketing activities to enter new markets and/or general profile-raising activities	Facility-level	Average or other subject measures – e.g. geographic sales percentage NB: general expenditures with no apparent or specific contracts
Salaries*		
Travelling costs		
Marketing materials		
Mid-stage – contracts-related		
Salaries of sales staff	Sustaining-level	Geographic area – first trace to geographic areas then allocated to contracts value in geographic area
Travelling costs	Sustaining-level	
Corporate entertainment	Sustaining-level	
Material costs of bid pack	Batch-level	Traceable to contracts
Bid cost	Batch-level	Traceable to contracts
Commissions	Batch-level	Traceable to contracts but unattainable – temporary solution is to use contract value
Support costs	Facility-level	Average or other subject measures
Final stage – after sales		
Travelling costs	Batch-level	Traceable to contracts
Salaries	Batch-level	Traceable to contracts
Material costs	Unit-level	Traceable to contracts/clients

* This only includes salaries of sales staff members assisting the marketing activities. It does not include those of chief executives and general managers of sales companies.

However, the project team encountered resistance from the sales companies during the process mapping exercise and activity analysis. This was partly due to the inherited notion that the sales companies were highly regarded by senior management as being the 'bread-winner'. Sales managers and staff members saw this ABC exercise as a 'threat to their autonomous status,' although they became part of the Xu Ji. In addition, non-standardised practices meant that the above proposed traceable costs were unattainable. For example, commissions were highly commercially sensitive and not normally disclosed even in the internal accounting system. There was an implicit and complex link between sales activities and efforts (expenses) and winning contracts (sales). For example, sales people spent some time and money on one client with no success. After a few years, the client gave a contract without Xu Ji needing to spend any money. For the time being, the project team proposed to use contract value to allocate the commission, as some commissions were based on a certain percentage of the contract value.

The project team's analysis of sales activities provided the top management with some useful management ideas, including enforcing some standard procedures – i.e. sales activity plan, identification of contract numbers/activities when submitting expense claims. These procedures have since been in place.

Summary

It is evident that ABC systems can work more effectively in a relatively stable environment though may not work so well in a changing/unstable environment. Further major organisational events including acquisition and ERP implementation, can have profound impacts on management's commitment to further develop the ABC system and may adversely affect the use of ABC information.

Xu Ji's observed ABC systems were unremarkable, in that they only tackled direct costs and variable manufacturing overheads. Given their traditional costing system was not even able to directly match direct labour costs to products, the ABC implementations have made marked improvement and allowed them to obtain some accurate product cost information. The sales activity analysis was a good attempt, in that the ABC information enabled Xu Ji top management to understand sales activities better. This attempt also marked the beginning of ABC being used as a management tool to enable top management to exercise more informed control over sales expenses and sales companies.

ABC as a tool for learning

ABC implementation has provided a unique opportunity to accelerate learning throughout Xu Ji.

It has changed accountants' perception of accounting. The experienced accountants, had previously only performed monthly financial reporting and book keeping. An experienced accountant commented, *'This [ABC] allows me to use accounting information for internal purposes.'*

The group cost accountant/ABC team member commented, *'Our product cost is more accurate than ever, because I do not get questions since [ABC system was implemented].'*

The newly graduated accountants were able to have first-hand experience of a real-ABC system. A junior accountant noted, *'I learnt ABC theory at my western accounting module at the university. I never thought that we would be implementing this system.'*

Operations managers from engineering backgrounds accepted the new system quicker than the accountants. They fully embraced the initial ABC implementation and adapted ABC concepts to improve their operations. The concept of non-value added activities and process mapping were conveyed and led operations managers to look into ways to identify waste in their processes. For example, reorganisation of assembly line layout to reduce the moving time and consciously incorporation of standardised components at product designs.

Top management became more confident of the accuracy of their core direct costs and accepted ABC methodology as an analytical tool for new/re-organised business functions.

Influencing factors on Xu Ji's ABC implementation

Technological factor – ABC as catalyst to advancement of information systems

Xu Ji's initial ABC attempt prompted the company's decision to install a corporate financial accounting system. They used a local IT firm which was specialised in accounting software and new to ABC concepts. After fixing some teething problems, their programmed ABC software worked well with its financial accounting system. This experience paved the way for the ABC implementation at Relay.

Since 2000, Xu Ji has been expanding rapidly to create economies of scale in the face of fierce market competition. The existing financial accounting and ABC systems were no longer able to cope with growing needs for management accounting information. Xu Ji top management realised the bottlenecks that the ABC system faced and decided to implement a corporate-wide ERP system.[2]

[2] Ironically, at the initial ERP briefing meeting in 2010, the ERP programmers did not think the ERP system could either create a data-exchange link to the existing ABC system or incorporate the ABC concepts within the ERP programme. However, this view has changed to incorporate the ABC concepts in ERP's management reporting system.

It is notable that the initial ABC attempt was the catalyst for Xu Ji's computerised accounting system advancement however it is too early to say whether or not the latest ERP advancement will be the catalyst for further ABC enhancement.

Organisational factors – continuous changes adversely impacts ABC

Xu Ji's organisational and management structure has been continuously changing and growing. They produce customised products, dependent on a customer's specified requirements and the production processes are constantly changing. These changes pose one of the biggest challenges on the validity of the ABC system and relevance of the information it produces. The ABC team spent more time on trying to keep up with the changes and keep the ABC models up-to-date, rather than producing some useful ABC information for management purposes. It is not surprising the operations managers' support and zealousness for ABC waned as they did not see any tangible benefits from the ABC information. For example, ABC was not used in divisional performance measures nor included in their KPIs. This was compounded by the fact that ABC was not just implemented in other parts of the value-chain – e.g. the sales company.

On the other hand, Relay's ABC implementation is a different story. The Relay production process and techniques involved are rather stable. As an independent subsidiary, Relay has relative autonomy over its value-chain – i.e. purchase, production and sales. Relay's ABC system is able to account for the entire process. The most benefit Relay has gained from the ABC implementation is that ABC induces standardised procedures and inventory control.

Cultural factor – top-down and malleable

Xu Ji demonstrates a strong sense of top-down organisational culture. The former and current CEOs are keen to trial innovative ideas and Western advanced management techniques such as economics-value added, KPIs, six-sigma and ABC. This top‑down instigation worked quite well in the initial stages of ABC implementation when knowledge was severely lacking. The learning atmosphere at Xu Ji was also induced by forms of training and assessment. For example, middle-line managers were required to present their divisional achievement using these techniques.

The effectiveness of this top-down instigation became malleable when knowledge grew, and production managers demanded the use of ABC in sales and other overhead areas. However the transparency ABC brought posed a threat to the sales companies autonomy and its niche so sales managers strongly resisted extending ABC systems to sales activities.

External factors – market competition

To enable its competitiveness and to some extent survival, Xu Ji embarked on a rapid expansion strategy through mergers and acquisitions during 2003-2007. This helped Xu Ji to win businesses by creating economies of scale, it also caused serious financial strains. The economic downturn in 2007 worsened Xu Ji's working capital position so they sought a capital injection from a large pension fund company in 2008, which later sold 60% of its stake to the national grid in 2010. This quick succession of acquisitions had profound impact on Xu Ji management and staff.

Although top managers still supported the ABC project, it was inevitable their focus was forced to move to more pressing matters. The financial strains also meant that limited financial resources were available to support the role out the ABC to the rest of Xu Ji.

Author(s):
Dr Lana Yan Jun Liu
Newcastle University, UK

Professor Fei Pan
Shanghai University of Finance and Economics, China

Source:
http://www.cimaglobal.com/Documents/Thought_leadership_docs/6Activity-based-costing-China.pdf

TECHNICAL SESSION-VI

MISSION 5 TRILLION – SECTOR SPECIFIC CMA CRYOGENIC ROLES

Overview

A $5 Trillion Economy calls for pulling all the economic growth levers - investment, consumption, exports, and across all the three sectors of agriculture, manufacturing and services. Farmers are being looked at as the exporters and beyond just being producer of food. India has the potential to export food, milk, vegetables, honey or organic products. The government aims to invest widely in agriculture infrastructure and allied areas, and would seek support from private entrepreneurship for value addition in farm sector especially in food processing industry. Government is aiming to reorient policy focus from being production-centric to becoming income-centric.

Infrastructure is significant for the country's growth. The Government is planning to build infrastructure throughout the country as per the requirements of the 21st century with investments in building of infrastructure in all sectors including highways, railways, airways, waterways, Infrastructure for storing produce in village, construction of modern facilities in cities etc. Bharatmala Project is the second largest highways construction project in the country since NHDP, under which almost 50,000 km or highway roads are targeted across the country. It will look to improve connectivity particularly on economic corridors, border areas and far flung areas with an aim of quicker movement of cargo and boosting exports. Smart City Mission - Is an urban renewal and retrofitting program by the Government of India with the mission to develop 100 cities across the country making them citizen friendly and sustainable.

Hon'ble Prime Minister has announced 'Housing for All by 2022' scheme targeting two crore homes to be built across all urban locations over the next five years. In the defence sector, there is a need to identify key components and systems and encourage global companies to set up manufacturing base in India by offering limited period incentives; and ensure incentives result in technology/process transfer.

CMA professionals can play a catalytic role in the nation building in the domains of De-risking economy by ensuring transparency and efficiency in the corporate sector of the economy, Strengthening the execution of national initiatives such as Make in India, Digital India, Skill India, Swacch Bharat and Smart Cities through superior resource allocation and performance tracking , Strengthening government, NGOs, MSMEs and academic institutions by going beyond the traditional accounting focus on big corporates, Inculcating the accounting and financial literacy of common men including farmers & small entrepreneurs. A $5 Trillion Economy calls for pulling all the economic growth levers - investment, consumption, exports, and across all the three sectors of agriculture, manufacturing and services. Farmers are being looked at as the exporters.

Topics:

- ✓ Agriculture
- ✓ Infrastructure – Housing for All
- ✓ Defence

THE FOURTH INDUSTRIAL REVOLUTION IN AGRICULTURE

For agribusinesses, implementing new technologies requires focusing on four critical capabilities.

Do all cows' faces look the same to you? They don't to systems powered by artificial intelligence (AI). Bovine facial recognition technology, developed through a strategic partnership between Cargill and an Irish technology company called Cainthus, equips barns and fields with smart cameras that can identify each cow in a herd in seconds based on facial features and hide patterns. Linked to machine learning software, the system determines whether a cow isn't eating or drinking enough, or if she's sick, and can alert the farmer via smartphone app. It can also look at the whole herd's behavior to identify how best to distribute feed or schedule cows' stints in a specific pen or in the field. Over time, the platform learns from what it sees and begins to automate more of the daily care for each animal.

The fourth industrial revolution (4IR) is starting to change how every agricultural player, from a family farmer to a global conglomerate, produces food and related products. The spread of the so-called essential eight technologies — including AI, blockchain, drones, and the Internet of Things (IoT) — to agriculture is leading to increased yields, lower costs, and reduced environmental impact. These tools are also empowering farms to unlock new plant-based innovations and increasing their resilience to extreme weather events and climate change.

Significant money is at stake. In 2018, agritech startups raised US$16.9 billion, a 43 percent increase over the year before. As compatible technology and high-speed wireless networks spread more quickly — telecom operators are planning to invest as much as $1 trillion on 5G infrastructure by 2025 — the adoption of agriculture-related technology will accelerate.

However, this revolution in agriculture imposes new demands on producers and the organizations that serve them. To thrive in 2030 and beyond, agricultural companies must choose carefully among the new technologies, to avoid wasting time and money or — worse — missing out on critical opportunities. Many companies will also need to change how they organize themselves and their business lines to best use these technologies.

The right approach to all these challenges requires that companies define their place in the digitized world of agriculture, then identify and develop the right capabilities system to succeed in it.

Digital platforms for farm animals and robot swarms

We cannot know exactly how the world will look in 2030, but existing megatrends indicate the likelihood of more people, more of whom will live in cities; more extreme weather shocks and natural disasters; greater pressure on fresh water, arable land, and other natural resources; and overfished, overheating, and rising oceans. That may sound bleak, but with the right approach, agriculture companies can feed this near-future planet better than ever, while *reducing* pressure on resources.

A tremendous variety of technologies are currently in development. One Brazilian company, for example, offers a system that uses drones and IoT sensors to gather data on pigs and their environment. It enables swine farmers to enter further information, such as the pigs' weight or births, into the system by simply speaking into their phones. Analytics, synchronized across the swine farmer's entire operation, provide visuals on every stage of production. Farmers can share the information with suppliers of feed and medicines, or establish key performance indicators for

supervisors and managers. Other companies have similar solutions on the market for other types of livestock.

Some 4IR agriculture technologies seem to come straight out of science fiction. One firm is developing a swarm of miniature autonomous robots that can plant seeds. Controlled by a farmer's handheld tablet, which is operated with the help of satellites and cloud-based software, the swarm will be able to put each seed in the right place with greater precision than current approaches can. Not incidentally, the technology will eliminate the need for planter bars, tractors, and tractor operators. Because the swarm can adjust seed locations for changing conditions, it will increase yield, with lower costs, faster planting speeds, and a reduced impact on the environment.

So many new technologies, products, and services are appearing that the entire sector will soon be unrecognizable to participants of a generation ago. To prepare for this future, agricultural companies must take the right steps right now.

Don't simply digitize existing business models

The most common response among companies has been to plug new technology into old business models, with the hope of enhancing those models with smarter tools and more data. But that tactic is flawed. Making old models work better isn't enough — not when technologies are enabling all-new models that can render the old ones obsolete.

So many new technologies, products, and services are appearing that the entire agricultural sector will soon be unrecognizable to participants of a generation ago. To prepare for this future, agricultural companies must take the right steps right now

Many pesticide and fertilizer companies, for example, are using 4IR technologies to provide better products and roll them out faster than before. That might sound like a success story, but precision farming — which uses IoT sensors, high-resolution 3D aerial imagery from drones, and AI-powered analytics to analyze the characteristics of soil and the behavior of crops down to the square inch — may soon significantly reduce the need for fertilizers and pesticides altogether.

A better approach for those manufacturing companies is to discover and develop these new business models, creating new markets along the way. Instead of looking for a better product, companies should look for better *solutions* for the problems that their customers face, whether those customers are farmers, agricultural suppliers, or end consumers. Many successful solutions will bring together products and services from multiple companies, rather than just using products manufactured by the solution provider.

To determine which solutions to offer and how to offer them, companies need to fully understand their current competitive position, including its strengths and vulnerabilities. Leaders can then determine where they want to compete in the agriculture ecosystem of the future. In whichever competitive position they choose, they will need the right capabilities to win. Organic innovation, joint ventures, incubators, and acquisitions should all be considered to get an organization learning and evolving.

Four capabilities for winning in 2030 and beyond

Companies will need many different capabilities, depending on their chosen competitive position. But for nearly every agricultural player, four key capabilities will serve as a foundation of success.

Generating a "so what" from data through digitized operations and advanced analytics

Digitization is perhaps the clearest example of how 4IR technologies can, and should, go beyond simply making traditional business models work better. New technologies are leading an all-new agriculture value chain, with digital businesses at each link of that chain tapping into new revenue streams.

These forward-looking agricultural companies don't just capture and harness data. They help clients figure out what data they need and how they will get it; they also help standardize and analyze data to recognize patterns and formulate recommendations. In other words, they generate a

"so what" from the reams of data in which so many organizations are currently drowning.

In practice, producing this "so what" usually means applying analytics in order to operate equipment more efficiently; determine more accurate feed formulations; manage animal well-being; create marketplaces; and better manage logistics, pricing, customer performance, and more.

John Deere, for example, is increasingly selling data management services in addition to farm equipment. The company's Operations Center system enables farmers to collect data from equipment (whether or not that equipment was manufactured by Deere), see and analyze that data on dashboards, share data with partners (including a suite of third-party, software-as-a-service providers), and operate machines remotely.

For Deere and other companies like it, data analytics is no longer a cost center, targeted for cuts. It is a strategic capability that can create new business models.

Participating in — and leading — new collaboration ecosystems

It's impossible for any single company to gather, manage, develop, and use all the sources of data and all the new technologies that emerging agricultural business models depend on. The autonomous superfarms and biofactories that may soon provide much of humanity's food? Those will require multiple stakeholders, from conglomerates to startups to farmers in the field, working together.

Leading agricultural companies will be skilled at partnering with other companies, large and small, and with universities and other sources of innovation to identify trends and capitalize on external knowledge. They will be "extroverted," outward-looking organizations, with the vision to orchestrate new agriculture ecosystems. And they'll use mergers and acquisitions to fill gaps in 4IR-based business models.

Collaboration should always be grounded in a company's objective assessment of its own strengths and where it will be better off capitalizing on the strengths of an external partner. For example, one company may be strong in food processing but need partners for food formulation insights. Another may have exciting R&D but need partners to get its inventions into the marketplace. The key is to understand one's role in the agricultural value chain of tomorrow, then build the partnerships and make the deals to strengthen that role.

Consider how McDonald's (at the end of the agriculture value chain) recently acquired an Israeli AI startup called Dynamic Yield, which has strong capabilities in using analytics to personalize customer options. McDonald's will use the new asset's tools to vary digital drive-through menus based on the time of day, the weather, how busy the restaurant is, and trending menu items. When a customer places an order, the AI system will instantly suggest other items to complement it. Using the data it gathers, the system will improve its own performance over time.

Innovating business models based on core strengths

Every company, inside and outside agriculture, wants to be more innovative. But the winners will be those that base their efforts on a sound understanding of their existing corporate strengths and culture.

Cargill, for example, helped to develop an open source blockchain solution to provide reusable digital tools for supply chain use cases, including food safety and traceability. Because the system is open source, it does not exclusively sell Cargill's products. But the company is putting itself in the middle of global innovation, connecting with potential suppliers and clients, and giving itself the potential to help shape blockchain to its benefit.

Whatever their specialty, agricultural companies will need procedures to systematically screen, evaluate, and prioritize emerging technologies. They will also need cross-functional collaboration to better identify and more quickly develop and implement the best ideas; internal R&D and technology units capable of rapidly building pilots; and an agile approach to get the most promising ideas into the market quickly, based on continuous feedback loops that take advantage of real-world customer input. It's critical for companies to test a wide array of solutions, "fail fast" on less-promising ideas, and reallocate capital and other resources to the winners.

Monetizing the business opportunities from sustainability

Sustainability isn't just a good idea. It's also one of the largest profit opportunities for the agricultural sector. A U.N.-backed study put the potential value of business opportunities related to food and sustainability at $2.3 trillion by 2030.

Such opportunities go far beyond marketing. They're based on reducing food waste; reformulating products and packaging; developing new fertilizers and more precise ways to improve plant characteristics; managing farms, forests, and oceans with a smaller footprint; promoting micro-irrigation; and increasing composting and energy capture, for example.

To succeed with these and other opportunities, companies must understand the societal expectations, ecological changes, and technological advances behind them. They must be able to quantify the sustainability of their products and activities and integrate sustainability in all their investment and business decisions.

Coca-Cola and Unilever, for example, have both set ambitious and measurable sustainability goals: Coca-Cola will collect and recycle the equivalent of every bottle or can it sells globally by 2030, and Unilever will reduce its environmental footprint (as quantified in sectors such as greenhouse gases, water use, and packaging) by half, also by 2030. Quantifying targets in this way requires integrating nonfinancial metrics into business models and long-range strategic planning.

Notably, sustainability requires all three of the other foundational capabilities: top-notch data and analytics, collaboration across the value chain, and in-house innovation.

How to get started

Preparing for a new world is a daunting task, but many agricultural companies — as well as the technology, industrial, and logistics companies they work with — are already moving quickly.

Whether a company is already in the midst of a full-on effort to implement 4IR solutions, or is just beginning to understand the need, four steps can help set a company on the right path, course-correct along the way, and arrive quickly at the desired future state:

1. Find your place in the future 4IR agriculture ecosystem: the spot where you will be best able to compete and win.

2. Assess current gaps in the four key capabilities and other more sector-specific capabilities.

3. Set a path to close those gaps as needed to win in your future ecosystem role, with a specific investment agenda, whether through organic growth, joint ventures, or tuck-in acquisitions.

4. Evolve the culture, building on existing strengths where possible, to align the entire organization around the new and better capabilities.

By choosing the right place to compete in the agricultural ecosystem of the future — and building the right capabilities to win — agricultural leaders can keep growing into 2030 and beyond, while helping to feed and sustain the world's communities as they do so.

Author(s):
Sebastiaan N huis
Leading practitioner working in PwC's U.S. agribusiness advisory group. Based in Minneapolis, Director with PwC US.

Iris Herrmann
Advisor to executives in the chemicals industry for Strategy&, PwC's strategy consulting group. Based in Munich
Partner at PwC Strategy& Germany

Source:
https://www.strategy-business.com/article/The-fourth-industrial-revolution-in-agriculture?gko=75733

MAHINDRA RURAL FINANCE – A CASE STUDY

Mahindra has created a financial product that helps base of the pyramid borrows get access to housing loans.

Kunj Bihari recalls the terror of life without reliable shelter. Pushed to the limit by insecure rental accommodation and an aggressive landlord, the resident of rural Rajasthan saved hard to buy a piece of land. But when he achieved that dream, another nightmare followed: out of savings and rejected by a string of lenders, he had no money left to build a house.

Relief eventually came when a team from Mahindra Rural Housing Finance visited Bihari's village and assessed his capacity for repayment. Within five days of applying, he had secured a loan. Finally, Bihari's family had a secure roof over their heads.

Rural India is desperately short of homes, with as many as 62 million households lacking decent shelter in 2012. The consequences are awful: poor housing often means poor sanitation too, as well as greater vulnerability to crime. But despite this clear need, millions of rural Indians are unable to access finance to build or improve their homes. Mahindra, one of India's largest family-owned conglomerates, is striving to change that. Its mortgages for rural customers are transforming lives and making healthy profits, tapping into India's long tradition of philanthropic but business-savvy family-owned firms.

The company's fixed-rate packages are specially designed for the target group. Rather than rely on formal credit histories, for instance, Mahindra makes loan decisions based on 'observable' assets and lifestyle. And it lets farmers link repayments to harvests, allowing six-monthly installments and doing away with early payment penalties – meaning a bumper crop can be used to save interest. Crucially, it is closely attentive to individual needs, helping clients in everything from understanding the basics of home finance to getting hold of the documents needed to secure a loan.

The company is on track to hit 500,000 customers by 2017, with a loan portfolio worth US$500 million.By 2020, it aims to double both these figures. The benefits to society are broad. A quarter of clients have switched to modern sanitation facilities, for instance, while loans are helping to empower women, who made up 75% of co-applicants in 2014-15. Mahindra has also created thousands of jobs.

The company has made healthy profits since 2009, and puts its success partly down to being the first mover in an untapped market. But by building on India's history of socially minded family firms, it is also bringing life to the concept of 'shared value', showing that truly serving the community is the key to a thriving, modern business. For Mahindra's chairman, Anand Mahindra, India's social challenges – and opportunities – make it a natural "playground" for this approach. "We are seeing that creating shared value is a powerful business strategy that can deliver both profit and social impact," he says.

Source: http://report.businesscommission.org/case-studies/mahindra-rural-finance-case-study

DEFENCE FOR THE 5 TRILLION INDIAN ECONOMY

The "challenging but realizable" desire/ target/goal/ambition of India becoming a USD 5 trillion economy by 2024-25 from the existing USD 2.69 trillion economy, as articulated by our finance minister[i], is a worthy thought. Whether, how, and in what configuration (equitable or much more skewed wealth distribution that the existing data shows this journey will be performed, designed, muddled through or evolved, is not this article is about. What will it take to secure and defend a USD 5 trillion economy is what we would like to discuss? To get a sense of the journey ahead, lets us see what has been the journey of the past for Indian economy and effort and resources spent on defending the economy.

2009 to 2019 – Security and Defence of Indian Economy

In 2009, India already was a more than USD 1 Trillion economy (1.078 trillion) for a population of 1.148 billion people. We were defending our economy by an annual defence budget of around USD 25 billion with 1.281 million active soldiers, according to IISS Military Balance. Table below shows how these 4 numbers changed by 2019 with one set shown for the year 2014. The 2009, USD 1 trillion Indian economy almost doubled to USD 1.97 trillion economy by 2014 with a defence budget of around USD 36 billion with an active armed force of1.325 million soldiers. By 2019, these numbers have increased to USD 2.69 trillion, USD 58 billion and an active armed force of 1.45 million.

S. No.	Year	GDP (USD Billion)	Population (million)	Defence Budget (USD) (Billion)	Active Soldiers (thousands)
1	2009	1078.00	1148.00	25.30	1281.00
2	2014	1970.00	1221.00	36.30	1325.00
3	2019	2690.00	1297.00	57.90	1444.50

The way India is defending its evolving economy seems to be by adding more soldiers and of course increasing the defence budget. In 10 years from 2009 till 2019 Indian Defence Budget has increased by 128% while number of active soldiers have increased by just 12%.

The world that is emerging in the period from now through 2024-25 is undergoing a multi-dimensional repolarization. For securing economic growth in the emerging world along with defending Indian rights, interests and sovereignty, will require us to not only put in more resources for defence but also rethink the security and defence architecture that we have been following. The repolarizing world is also undergoing a creative destruction to pave way for the sixth wave of innovation. Further, the character of war is not only changing but also increasing into new dimensions that will require new thinking, novel and innovative solutions to design and architect the security and defence of the USD 5 Trillion Indian economy. What could be our options for year 2024-25 USD 5 trillion economy security and defence architecture? Before we try to answer this question, let us look at how the world economy evolved from 2009 to 2019 and how major countries have designed their defence and national security architecture in this period.

National Security Architecture and Design - 2009-2019

Various nations have taken different routes to their defence and security architecture and design as their economy has evolved. A look at 20 key countries including India in years 2009, 2014 and 2019 on 4 national level metrics available and published in open literature (IISS Military balance 2009, 2014 and 2019) gives a view of key approaches to defence and security architecture followed.

The four key metrics that we have considered are – (a) GDP in Billions of USD, (b) Population in Millions of citizens, (c) Defence budget in Billions of USD and (d) number of active soldiers as part of the defence force in thousands.

S. No.	Country	GDP (USD Billion)	Population (million)	Defence Budget (USD) (Billion)	Active Soldiers (thousands)
1	USA	14500.00	303.82	693.00	1539.89
2	China	4220.00	1330.00	61.10	2185.00
3	Russia	2450.00	140.70	36.35	1027.00
4	India	1078.00	1148.00	25.30	1281.00
5	Japan	5180.00	127.29	47.30	230.30
6	UK	2560.00	60.94	59.70	180.28
7	France	2670.00	64.06	41.10	352.77
8	Germany	3350.00	82.37	39.06	244.32
9	Pakistan	126.00	167.76	3.56	617.00
10	Israel	195.00	7.11	9.26	176.50
11	Iran	306.00	65.88	7.45	523.00
12	Turkey	652.00	71.89	9.84	510.60
13	Egypt	163.00	81.71	3.16	468.50
14	South Korea	710.00	49.23	28.60	687.00
15	Indonesia	484.00	237.50	3.12	302.00
16	Saudi Arabia	446.00	28.16	38.20	221.50
17	Brazil	1330.00	191.91	20.15	326.40
18	Australia	810.00	20.60	15.70	54.75
19	Ukraine	177.00	45.99	3.03	129.93
20	Sweden	423.00	9.05	5.26	16.90

In 2009, China had active armed force of 2.185 Million soldiers and their defence budget was USD 61.10 Billion for the GDP of USD 4.2 Trillion. USA with close to 3.5 times GDP of USD 14.5 Trillion was spending USD 693 Billion for a force of 1.54 Million soldiers.

Russian GDP was close to what Indian GDP is today (2019 India is USD 2.69 Trillion). Russia was a USD 2.45 Trillion GDP country with an active force of about a million strong. Russia was however spending USD 36.35 Billion on defence. Japan, 10 years back, was more than a USD 5 Trillion GDP and was spending USD 47 Billion on defence for an active defence force of just a quarter million soldiers.

By 2014, these economies evolved and US became USD 16 Trillion economy while China galloped to become a USD 9 Trillion GDP. US defence budget however went down from USD 693 Billion to USD 600. China increased its defence budget and number of active soldiers to USD 112 Billion and 2.33 million soldiers, respectively. Russia had a reduction in GDP from USD 2.45 Trillion to USD 2.2 Trillion. Yet, its defence budget increased to USD 81 Billion from USD 36 Billion in 2009. However, number of active soldiers reduced.

S. No.	Country	GDP (USD Billion)	Population (million)	Defence Budget (USD) (Billion)	Active Soldiers (thousands)
1	USA	16200.00	318.67	600.00	1492.20
2	China	9020.00	1357.00	112.00	2333.00
3	Russia	2210.00	142.50	81.40	845.00
4	India	1970.00	1221.00	36.30	1325.00
5	Japan	5150.00	127.25	51.00	247.15
6	UK	2420.00	63.40	57.00	169.15
7	France	2740.00	65.95	52.40	222.20
8	Germany	3600.00	81.15	44.20	186.45
9	Pakistan	239.00	193.23	5.89	643.80
10	Israel	254.00	7.71	15.20	176.50
11	Iran	429.00	79.85	17.70	523.00
12	Turkey	952.00	80.69	10.70	510.60
13	Egypt	265.00	85.30	5.29	479.00
14	South Korea	1260.00	48.96	31.80	655.00
15	Indonesia	946.00	251.16	8.37	395.50
16	Saudi Arabia	748.00	26.94	59.60	233.50
17	Brazil	2460.00	201.00	34.70	318.50
18	Australia	1590.00	22.26	26.00	58.20
19	Ukraine	182.00	44.57	2.42	129.95
20	Sweden	576.00	9.12	6.63	15.30

At this point, let us look at Pakistan and Israel as two closer GDPs although not closer population sizes. In 2009 Pakistan had an active force of 0.617 Million soldiers with a defence budget of USD 3.56 Billion. These numbers increased in 2014 to 0.643 Million soldiers and a budget of USD 5.89 Billion. Pakistan's GDP increased from USD 168 Billion to USD 193 Billion in the same period. Israel was a USD 195 Billion GDP on a base of just 7 Million population that became a USD 254 Billion GDP in 2014. Israeli defence budget increased from around USD 9 Billion in 2009 to about 15 Billion in 2014. However, the number of active soldiers in Israeli armed forces have not increased, remained at 0.176 Million only.

There is an interesting trend in 2009 to 2014 data on the 4 metrics that we have chosen to understand the defence and economy interplay if one may. Countries like France and Germany have actually reduced the number of active soldiers in their armed forces while increasing their defence spending slightly in 5 years from 2009 to 2014. Although UK has increased its active soldiers but given the general nature of these countries – UK, France and Germany have a reduced focused on defence spending – although their economies have also not grown to substantial extent. That is indeed true for Japan as well.

The 2019 data indicates a changed picture on these metrics for the 20 nations that we have chosen for our study. USA is now a USD 20.5 Trillion GDP. However, the defence budget has increased to USD 643 Billion but has not touched the high of 2009 when it was

USD 693 Billion. The number of active soldiers have been reducing since consistently though. That indicates a rethink on how army is organized. The move from division-based army/US marines to

S. No.	Country	GDP (USD Billion)	Population (million)	Defence Budget (USD) (Billion)	Active Soldiers (Thousands)
1	USA	20500.00	329.00	643.00	1359.00
2	China	13500.00	1392.00	168.00	2035.00
3	Russia	1580.00	142.00	45.30	900.00
4	India	2890.00	1297.00	57.90	1444.50
5	Japan	5070.00	126.00	47.30	247.00
6	UK	2910.00	65.00	56.10	148.00
7	France	2790.00	67.00	50.70	204.00
8	Germany	4030.00	80.00	45.70	179.00
9	Pakistan	307.00	207.00	11.20	653.80
10	Israel	366.00	8.40	18.50	169.50
11	Iran	430.00	83.00	19.60	523.00
12	Turkey	714.00	81.25	40.50	355.00
13	Egypt	249.00	99.00	2.90	438.50
14	South Korea	1860.00	51.40	39.20	625.00
15	Indonesia	1010.00	262.78	7.32	395.50
16	Saudi Arabia	770.00	33.00	62.90	227.00
17	Brazil	1910.00	208.00	28.00	334.50
18	Australia	1430.00	23.47	26.60	57.00
19	Ukraine	126.00	43.95	3.27	209.00
20	Sweden	555.00	10.00	6.22	29.75

integrated brigade-based organization that started in year 2003 might have some role to play in this reduction.

Interesting China in 2019 has also reduced its active soldiers to close to 2 Million with further reduction in pipeline if the announcements and Chinese new thought is to be believed. However, for a USD 13.5 Trillion GDP which is similar scale to what US was in 2009, Chinese defence budget still hovers around USD 168 Billion unlike US that has been between USD 600-700 Billion. Russian GDP has reduced substantially to USD.

1.58 Trillion and their defence budget has reduced to USD 45 Billion. The number of active soldiers however, have increased from 2014.

Pakistan has seen a peculiar case of slight increase in GDP from USD 193 Billion to USD 207 Billion but almost doubling of defence Budget in 2019 compared to year 2014. UK, France and Germany have not only reduced their number of active soldiers, but also capped their defence budgets to 2014 levels. Israel with a tremendous increase in GDP to USD 366 Billion has increased its defence budget to USD 18 Billion but reduced its active armed forces.

2019 from 2009 indicates that defence architecture and design on an evolving economy is gravitating towards a new architecture that is evolving definitely not by increasing the number of active soldiers.

Indian Defence for a 5 Trillion Economy

We need a much deeper analysis to understand and find out what should be the key tenets of our security and defence architecture as we move towards a target of USD 5 Trillion GDP. If we compare ourselves with China in 2009 when it was a USD 4.2 Trillion economy it was maintaining a USD 61 Billion defence budget but with more than 2 Million soldiers. Are we also moving towards an architecture like China in 2009? This would mean that we would have a defence budget of close to USD 100 Billion for 5 Trillion GDP and also need to maintain an active army of 2 million soldiers.

If, however, we can learn from China since 2009, it is clear that a new architecture needs to be thought through. Analysis of evolution of Chinese defence white papers [v] indicate that India need to learn to move quickly to the “intelligent” warfare as China is calling the future. Further, we need to understand the phygital nature of warfare (amalgamation of physical and digital warfare of the future). Chief of Army Staff, in a recent interview, has mentioned that our Army will not increase its number of soldiers further and will optimize its strength from within its existing manpower. If that is so, we need to see what are the ways that will lead to higher and deeper security and defence levels for India without increasing the number of active soldiers.

It is clear, as we grow to the USD 5 Trillion economy, we will need to invest more in capital intensive systems with high technology components in Space, Cyber and above all in Maritime capabilities. It will not increase the number of active soldiers but will require new type of soldiers for maritime, space, cyber and special forces. If we maintain the active soldiers to the current levels and say a maximum of 1.5 million active armed force and given the need to modernize our defence and security architecture, we need to reach the defence expenditure of USD 150-200 Billion by 2024-25 for the USD 5 Trillion economy. The challenge is to define, design and develop such a security architecture for 2024-25, today.

Author:
Navneet Bhushan
Defence Scientist (1990-2000)
Founder director of CRAFITTI CONSULTING
Source: www.indiandefencereview.com/news/defence-for-the-5-trillion-indian-economy/

Notes

About the Institute

The Institute of Cost Accountants of India (ICAI) is a statutory body set up under an Act of Parliament in the year 1959. The Institute as a part of its obligation, regulates the profession of Cost and Management Accountancy, enrols students for its courses, provides coaching facilities to the students, organizes professional development programmes for the members and undertakes research programmes in the field of Cost and Management Accountancy. The Institute pursues the vision of cost competitiveness, cost management, efficient use of resources and structured approach to cost accounting as the key drivers of the profession. In today's world, the profession of conventional accounting and auditing has taken a back seat and cost and management accountants increasingly contributing towards the management of scarce resources like funds, land and apply strategic decisions. This has opened up further scope and tremendous opportunities for cost accountants in India and abroad.

After an amendment passed by Parliament of India, the Institute is now renamed as "The Institute of Cost Accountants of India" from "The Institute of Cost and Works Accountants of India". This step is aimed towards synergizing with the global management accounting bodies, sharing the best practices and it will be useful to large number of trans-national Indian companies operating from India and abroad to remain competitive. With the current emphasis on management of resources, the specialized knowledge of evaluating operating efficiency and strategic management the professionals are known as "Cost and Management Accountants (CMAs)". The Institute is the 2nd largest Cost & Management Accounting body in the world and the largest in Asia, having more than 5,00,000 students and 85,000 members all over the globe. The Institution operates through four regional councils at Kolkata, Delhi, Mumbai and Chennai and 101 Chapters situated at important cities in the country as well as 10 Overseas Centre headquartered at Kolkata. It is under the administrative control of Ministry of Corporate Affairs, Government of India.

Our Institute apart from being a member of International Federation of Accountants (IFAC), South-Asian Federation of Accountants (SAFA), Confederation of Asian & Pacific Accountants (CAPA), National Advisory Committee on Accounting Standards (NACAS), and National Foundation for Corporate Governance (NFCG) is also a member of Government Accounting Standards Advisory Board (GASAB).

In today's globally competitive business environment, all the constituents of economy have to work in sync with each other and play an active and cryogenic role to propel various engines of the economy and generate sustainable momentum for the progressively faster economic growth of the country to achieve the goal –to make India USD 5 Trillion Economy by 2024 set by Hon'ble Prime Minister of India. While several fundamental and path-breaking reforms have been undertaken in the form of Insolvency and Bankruptcy Code and GST, continuous opening up and liberalisation of foreign direct investment have resulted in unprecedented inflows of FDI into the country and a number of initiatives and positive steps need to be taken in this regard. Digital technology has led to positive disruption in both governance and businesses. The Institute of Cost Accountants of India and its members have been wholeheartedly supporting the Government in implementing these national programs successfully. CMAs act as a cryogenic force that are very highly productive and show super performance even in extremely cold and stagnant situations so as to generate adequate force that is required to give a big push to the economy. They have a key role in implementation of strategies for achieving 5 Trillion Dollar economy through participation in management decision making, devising planning and performance management systems, and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

www.icmai.in

Headquarters
CMA Bhawan, 12, Sudder Street
Kolkata - 700016
Ph: +91 33 2252 1031 - 35

Delhi Office
CMA Bhawan, 3 Institutional Area, Lodhi Road
New Delhi - 110003
Ph: + 91 11 24666100/124/129

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