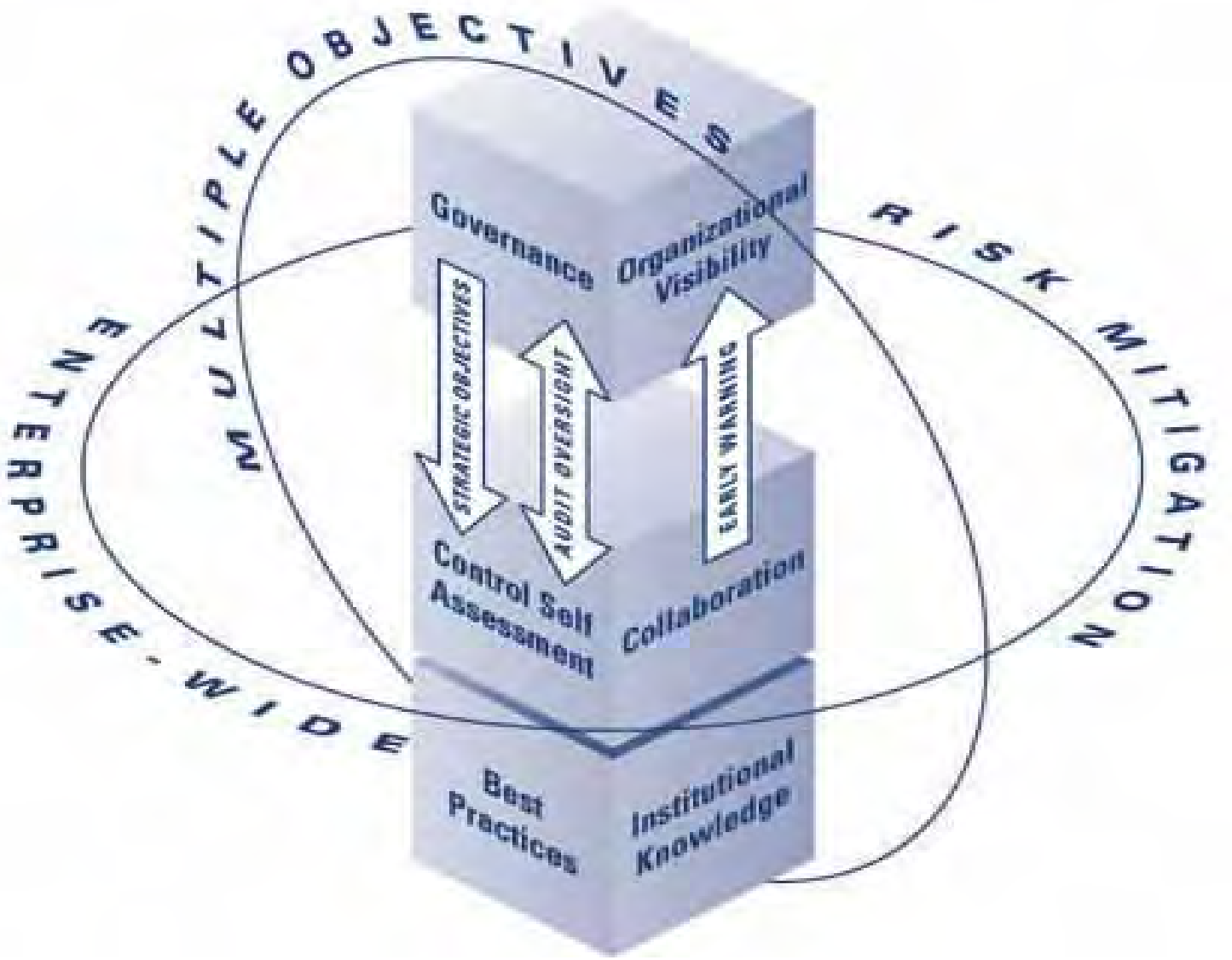
- 6 charters, 8 Subsidiaries across 10 states, 53 billion $ assets
- ERM system covering operational & other risks
- Integrate a variety of risk tools
- Deliver intuitive screen designs
- Produce flexible & robust reporting
- Create automatic alerts to enhance comm.
- Web-based, scalable, multi-operable
- Data feeds from multiple systems
- Small vendor – Providus Software Solutions Inc. (4 years back)
- The Project was spearheaded by the Risk Mgt.
- 100 Risk Managers
- 20% costs savings due to QRM


MULTIPLE OBJECTIVES
RISK MITIGATION
ENTERPRISE-WIDE
Governance
Organizational Visibility
STRATEGIC OBJECTIVES
AUDIT OVERSIGHT
EARLY WARNING
Control Self Assessment
Collaboration
Best Practices
Institutional Knowledge

RSA Adaptive Authentication

- Desk Top based– Second Factor of Authentication
- Identification based on device and Network forensics
- Behavioral Analysis and Parameters
- Quick and transparent scores for transactions according to perceived level of risks management and
- Automatic addition of security measures if all with minimal impact to online environment – i.e. impact to online banking customer
- Also Site-to-user authentication with a shared secret image and text using multiple devices
- Protection against Phishing, Pharming and other spoofing attacks
- Layered approach to security
- Deployment of RSA FraudAction and member of eFraudNetwork community
- Good boost to consumer confidence and reputation

Agenda

- Risk Management Techniques
- Risk Types and Risk Management Process
- Qualitative Risk Management and Quantitative Risk Management
- Tools and techniques used to perform Quantitative Risk Analysis
- Use of Technology for Risk Analysis
- Merits of Quantitative Risk Management
- Case Study
- Road Map
- Questions

- Investments Risk

  Market Risk

  - Volatility denting reputation
  - ***Persistency / lapse ratio*** (high elasticity – unit linked products)
  - ***Credit Risk (currently being managed by Investments dept.)***
  - Issuer Risk

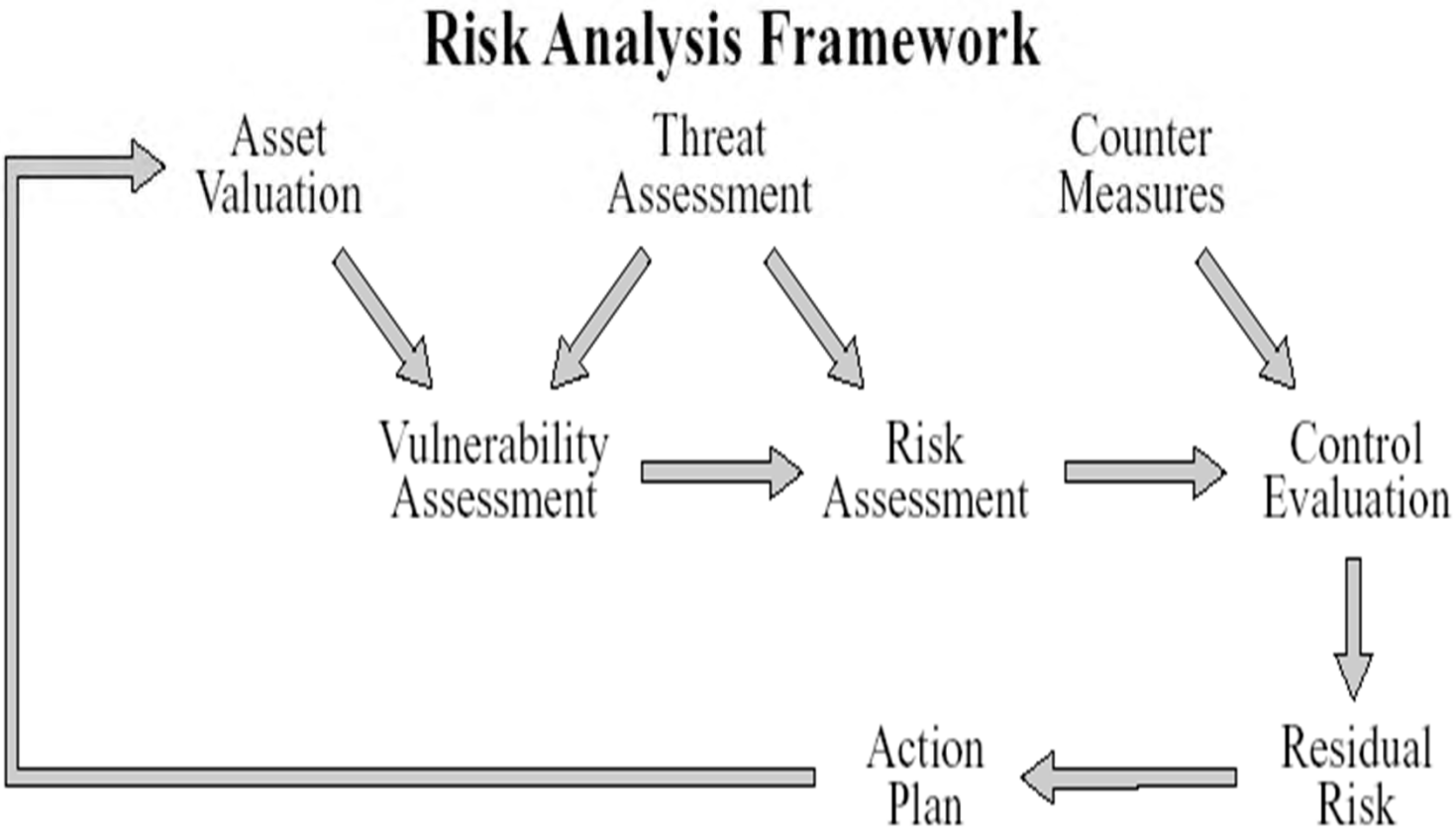
- Operational risk
  - the risk that there is inadequate infrastructure in place – technology, processes, and people to meet ***new business*** / existing business requirements
  - People risk (not trained), Process risk (absence / inadequate) and Technology
  - **Information Technology risk**
  - Infrastructure related issues
  - ***Strategy process*** issues
  - ***Distribution / channel*** mix issues

- Legal / regulatory / Compliance / ethics and fraud
  - Non compliance with the IRDA guidelines
  - Non compliance with other regulations

- **Reputation risk**
  - The risk that we offer poor / inadequate / no customer service to the customers
  - The risk that poor return is offered to policy holders for policies wherein the investment risk vests with the policy holders
- **Financial / reporting reliability**
  - Costs / expenses – not: budgeted / authorized / approved
  - ***Solvency*** management
  - ***Persistency*** impacting cash flows
  - Financial reporting – misreporting
  - ***Funding / Liquidity risk***
  - the risk that funds are not available to back the investments / expenses
  - the risk that there is a liquidity crunch
- **Insurance Risk**
  - ***Mortality & Morbidity risk (miscalculations)***
  - ***Underwriting risk (wrong estimations)***

- ***Banks could have 8 baskets***

Overview of Risk Management process

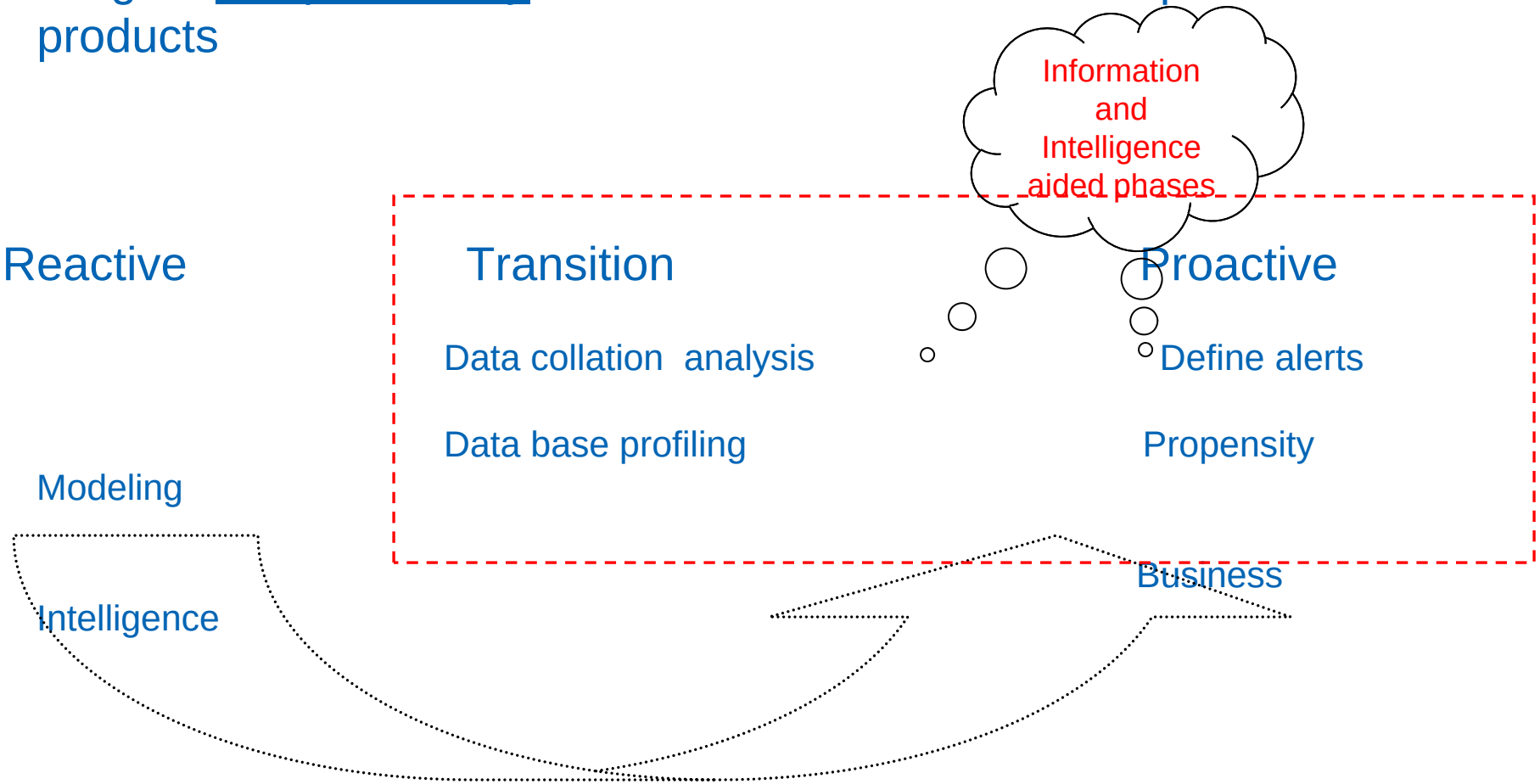


Steps in the Risk Management process

- Establishing context
- Identification
- Assessment
- Treatment
  - Avoid
  - Reduce (mitigate)
    - Re-insure risks (risk transfer)
    - Risk allocation or transfer – through SLA
    - Processes assurance through ISO and other certifications
    - Quality Control & Quality assurance practices
      - Six Sigma practices
    - Oversight
      - Governance / Committees / Policies & Procedures
      - Risk Management Committee, Audit Committee, Management Committee…..
      - Reviews by risk, compliance and audit
  - Retain
  - Transfer
- Risk Management plan
- Implementation
- Review and Evaluation

Cycle in Risk Management

- **Active Risk Management** addresses the burgeoning capability to mitigate risk proactively in addition to classic reactive protection products



Reporting Changes in Risk

Reporting significant changes in risk to appropriate levels of management on both a periodic and event-driven basis

- Risk assessment should:
  - Be updated as the organization changes
  - Consider any significant changes to the organization's risk profile – (Risks is dynamic – Quarter updating)
  - Include a process whereby a significant risk breach or event will trigger a report to upper management
- The risk manager should have defined processes whereby the event can be evaluated based on its impact to the organization

Risk Management

Three ways of thinking about risk

Quantitative risk

- Mathematical and statistical calculations

  e.g. Monte Carlo Method
- Can be used in deterministic decision making

  e.g. decision trees

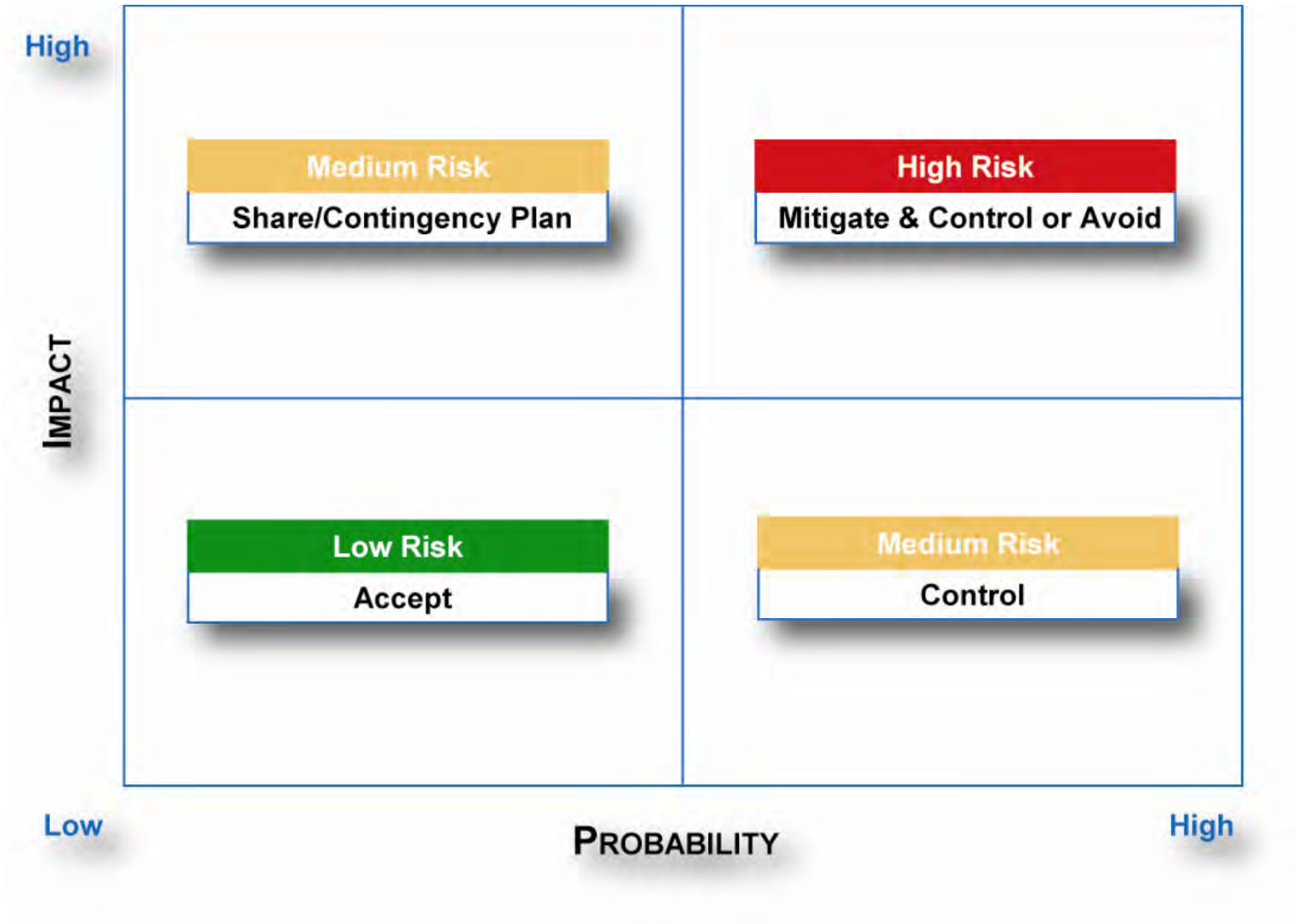
Socially constructed risk

- People's *perception* of risk is quite different from the mathematical/statistical calculation
- Engineer's perceptions affect their calculations

Qualitative risk

- A compromise between the quantitative and social schools
- Useful for prioritizing risk mitigation tactics

Qualitative Risk



Socially Constructed Risk

Two problems with qualitative risk

- People will believe some things are risk, even when the statistics indicate they aren't (and *vice versa*). We are "risk illiterate"
- Who says what the probabilities are? How do we calculate the risk exposures objectively?

Socially constructed risk says

- When seeking to put people's minds at rest, qualitative risk assessment may not be enough
- When assessing risk "objectively", we are in fact using subjective judgements

RISK PERCEPTION
RISK ASSESSMENT
RISK MANAGEMENT
www.ScienceCartoonsPlus.com
Iney Harris

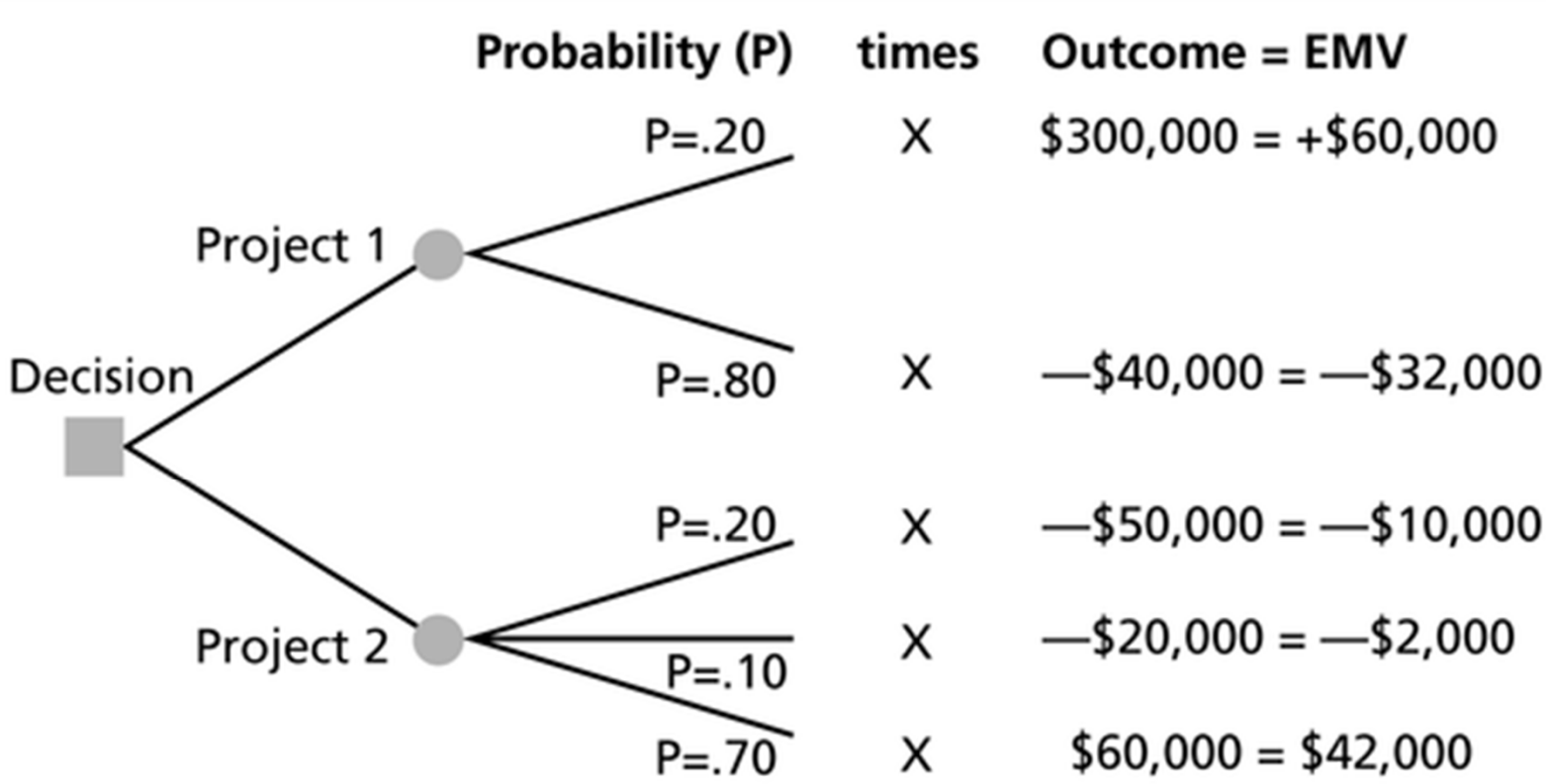
Quantitative Risk Analysis

- Often follows qualitative risk analysis, but both can be done together or separately
- Large, complex projects involving leading edge technologies often require extensive quantitative risk analysis
- Main techniques include
  - decision tree analysis
  - Simulation
- Use of Technology
  - Analysis tools
  - ACL, IDEA etc. – audit tools
  - Utility Software
  - SQL Commands
  - Third-Part access control software – Kane Test
  - Application Systems – ODS and Analytics
  - Options, reports built in the system

Decision Trees and Expected Monetary Value (EMV)

- A decision tree is a diagramming method used to help you select the best course of action in situations in which future outcomes are uncertain
- EMV is a type of decision tree where you calculate the expected monetary value of a decision based on its risk event probability and monetary value

Figure 11-4. Expected Monetary Value (EMV) Example



Project 1's EMV = $60,000 —32,000 = $28,000

Project 2's EMV = —$10,000 —2,000 + 42,000 = $30,000

Simulation

- Simulation uses a representation or model of a system to analyze the expected behavior or performance of the system
- Monte Carlo analysis simulates a model's outcome many times to provide a statistical distribution of the calculated results
- To use a Monte Carlo simulation, you must have three estimates (most likely, pessimistic, and optimistic) plus an estimate of the likelihood of the estimate being between the optimistic and most likely values

Tools and techniques used to perform Quantitative Risk Analysis

- **Interviewing** – Interviewing is employed to assess the probabilities of achieving specific project objectives based on input from relevant stakeholders and subject matter experts. In the interview it is a good mix to obtain the optimistic, pessimistic, and most likely scenario for a given objective. The end result is to have a bought into, agreed to, realistic and formal gage of probability. There are three methods commonly employed:
  - **Direct** – Direct interviewing is when a subject matter expert is accountable for providing the optimistic, pessimistic, and most likely values.
  - **Diagrammatic** – Diagrammatic method utilizes diagrams for subject matter experts to determine subjective possibilities.
  - **Delphi** – The Delphi technique lets a group of experts anonymously contribute their assessment.
- **Probability Distribution** – A probability distributions describes how probabilities are distributed upon events. It is used to graphically illustrate risk probability representing the probability density function. The vertical axis indicates the probability of the risk even, and the horizontal axis depicts the impact of the risk event.

Tools and techniques used to perform Quantitative Risk Analysis

- **Sensitivity Analysis** – Sensitivity analysis measures the impact of one risk with all other variables at a level plane. The risk currently being analyzed is given variable values based upon the possible outcomes. This is a great method to ascertain the impact of a single risk, however the method does not yield a combine effect for risk analysis.

- **Expected Monetary Value** – Expected monetary value analysis calculates the average outcome when the future is not set in stone. In order to calculate EMV multiply the monetary value of a possible outcome by the probability it will occur. EMV analysis is commonly used in conjunction with decision tree analysis.

Tools and techniques used to perform Quantitative Risk Analysis

- **Decision Tree Analysis** – Decision tree analysis is a detailed review of the information available to evaluate different outcomes. Decision trees enable the consideration of probability and impact for every branch of the decision under analysis. Solutions are based on alternatives which provide the greatest expected value when every implication, costs, rewards, and subsequent decisions are considered.

- Example – next slide

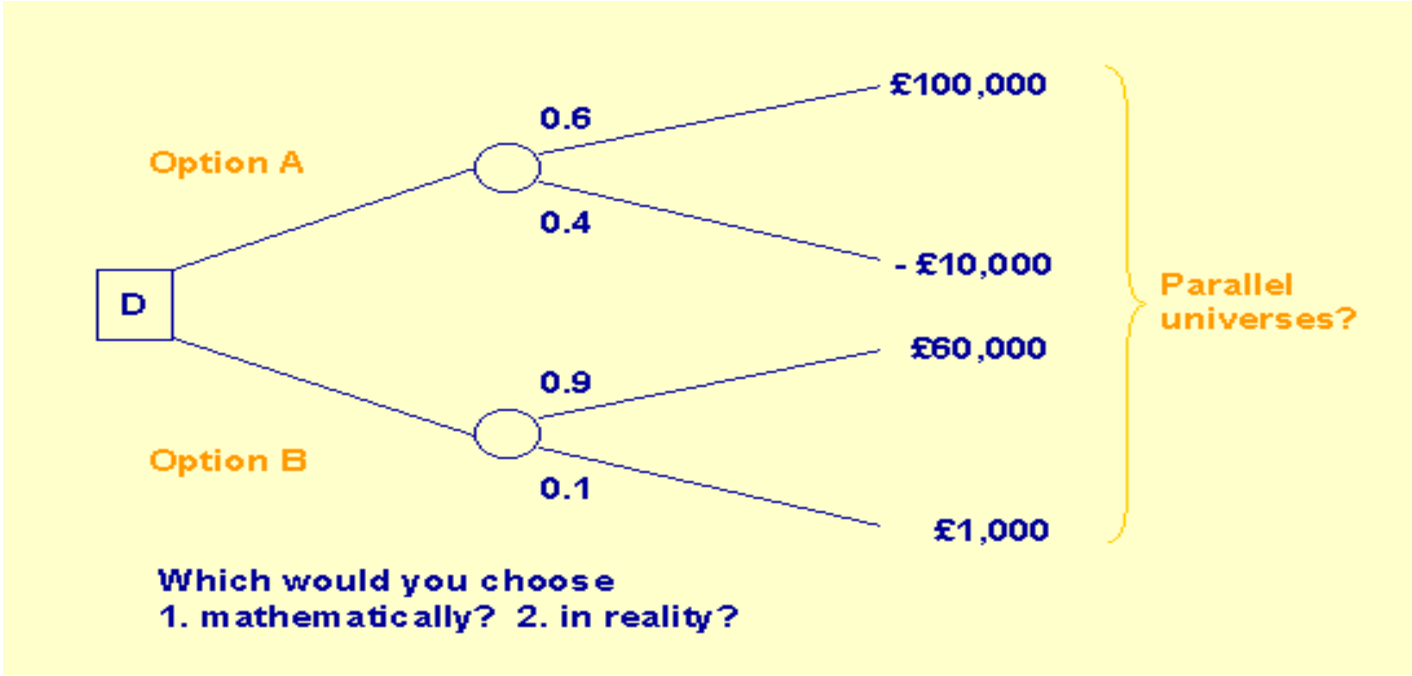
Decision Tree

Question:

You are a manager in a cost-conscious organisation. Which option would you choose?

A. Save £100,000, but 40% probability of losing £10,000

B. Save £60,000, but 10% probability of saving only £1,000



Tools and techniques used to perform Quantitative Risk Analysis

- **Modeling and Simulation** – A model is mock-uup of a system or problem. A simulation imitates functionality. A common model and simulation is the Monte Carlo Analysis. It illustrates how processes can occur under different conditions, without risk to the production systems and data. The steps to perform a Monte Carlo Analysis are:
  - Establish a Range of Values for Each Task
  - Determine the Probability Distribution for Each Task
  - Choose Random Values for the Simulation
  - Perform the Simulation
  - Analyze the Data

Tools and techniques used to perform Quantitative Risk Analysis

- **Prioritized list of quantified risks –** The prioritized list of quantified risks clearly identifies which risks pose the greatest threat or opportunity to the project by requiring a large risk contingency or by influencing the critical path.

- **Trends in quantitative risk analysis** - When project managers examine quantitative analysis results over time, they often spot trends. Observing and responding to trends can help you identify and eliminate root causes of risk, reduce risk probability, or control risk impact. Managing trends contributes to making you a successful risk manager.

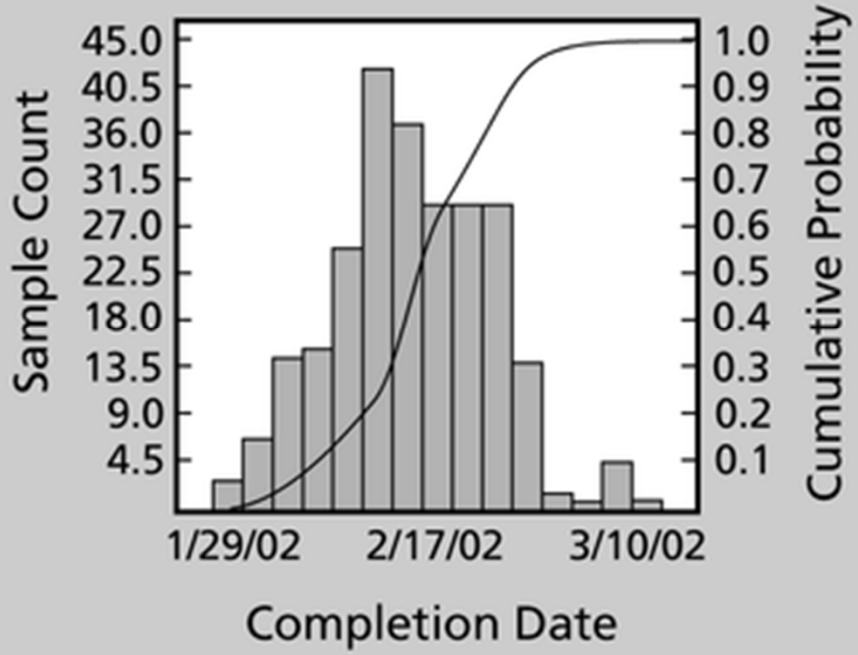
Using Software to Assist in Project Risk Management

- Databases can keep track of risks. Many IT departments have issue tracking databases
- Spreadsheets can aid in tracking and quantifying risks
- More sophisticated risk management software, such as Monte Carlo simulation tools, help in analyzing project risks

Figure 11-5. Sample Monte Carlo Simulation Results for Project Schedule

Date: 4/14/02 11:13:56 AM
Number of Samples: 250
Unique ID: 1
Name: Widget

Completion Std Deviation: 5.2d
95% Confidence Interval: 0.6d
Each bar represents 2d



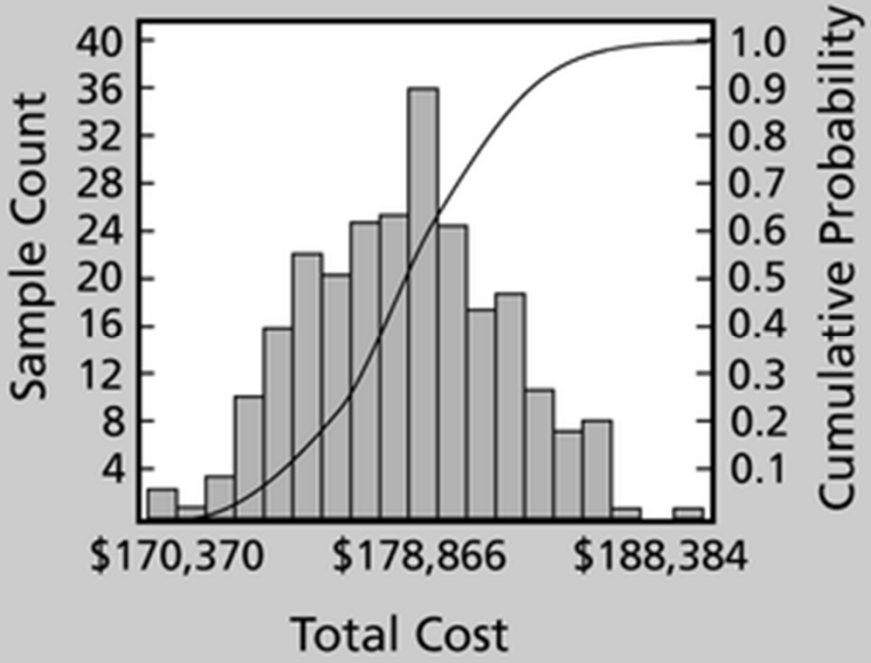
Completion Probability Table

Prob	Date	Prob	Date
0.05	2/4/02	0.55	2/17/02
0.10	2/8/02	0.60	2/18/02
0.15	2/9/02	0.65	2/19/02
0.20	2/10/02	0.70	2/22/02
0.25	2/11/02	0.75	2/22/02
0.30	2/12/02	0.80	2/23/02
0.35	2/15/02	0.85	2/24/02
0.40	2/15/02	0.90	2/25/02
0.45	2/16/02	0.95	2/26/02
0.50	2/17/02	1.00	3/10/02

Figure 11-6. Sample Monte Carlo Simulations Results for Project Costs

Date: 4/14/02 11:44:56 AM
Number of Samples: 250
Unique ID: 1
Name: Widget

Cost Std Deviation: $3,290
95% Confidence Interval: $408
Each bar represents $1,000



Completion Probability Table

Prob	Cost	Prob	Cost
0.05	$173,748	0.55	$179,327
0.10	$174,472	0.60	$179,556
0.15	$175,266	0.65	$180,015
0.20	$175,693	0.70	$180,518
0.25	$176,362	0.75	$180,984
0.30	$176,940	0.80	$181,611
0.35	$177,597	0.85	$182,387
0.40	$177,963	0.90	$183,208
0.45	$178,508	0.95	$184,528
0.50	$178,973	1.00	$188,384

Results of Good Project Risk Management

- Unlike crisis management, good project risk management often goes unnoticed
- Well-run projects appear to be almost effortless, but a lot of work goes into running a project well
- Project managers should strive to make their jobs look easy to reflect the results of well-run projects

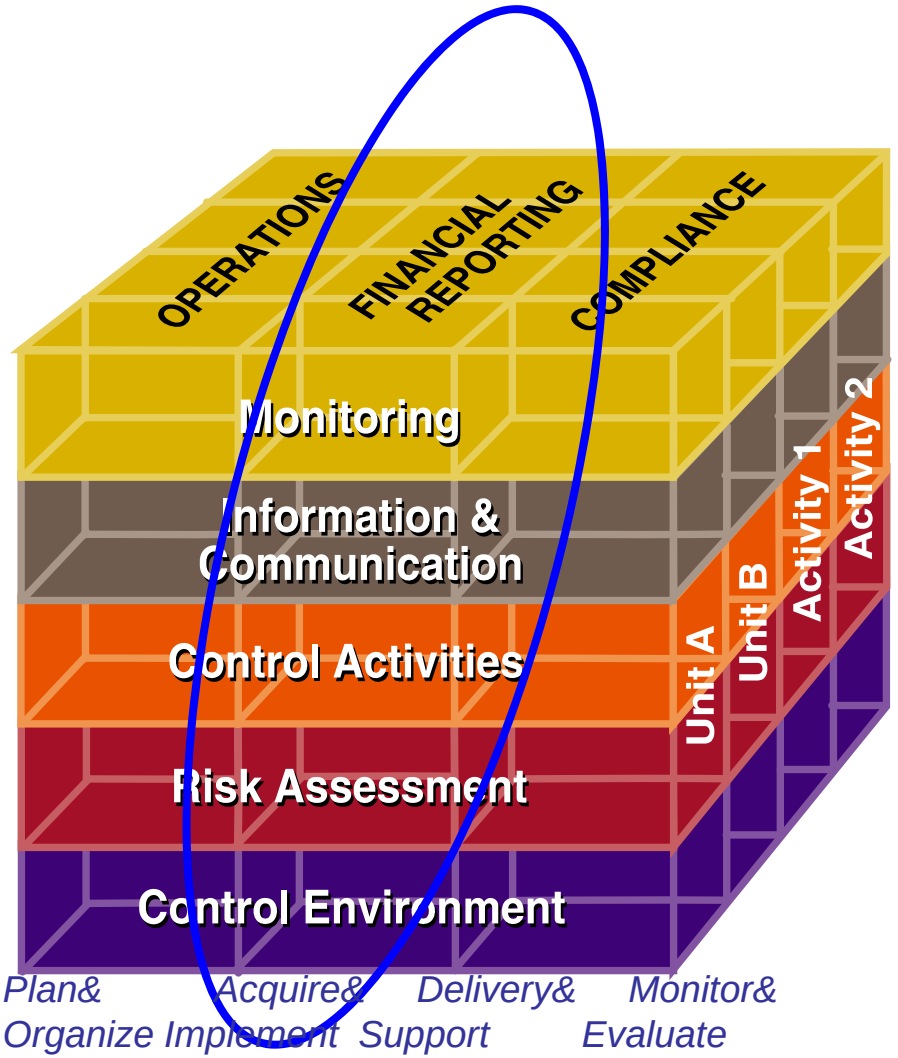
BI derived out of Use of Technology - example

- Determine patterns of overpayment of premiums
- Review payments from highly suspect banks or countries
- Test if customer is from a non-cooperative country or territory as identified by the international Financial Action Task Force (FATF)
- Review transaction payments comprised of more that one payment instrument type
- Report multiple accounts to collect funds or payment to beneficiaries
- Report purchase of multiple products in a short period of time
- Analyze beneficiaries with multiple policies
- Analyze employees that are beneficiaries
- Determine agents/brokers with high numbers of death claims
- Calculate benefit payments paid for lapsed policies
- Find policy loans that are greater than face value
- Report unauthorized policy changes

BI derived out of technology (contd.)

- Analyze and audit monthly transactions by specific or random selection
- Calculate and verify important ratios (premiums/claims, reserves/payments)
- Compare commissions paid based on recalculation and paid amount
- Generate reports on paid-up additions, dividends on deposit, policy loans, etc.
- Re-compute commissions based on ratios, premium percents, and detail/summary
- Select samples for reserve factors to trace to published tables
- Summarize monthly transactions by new business, death, endowments, etc.
- Compare actual claims to predicted claims
- Analyze claim experience to products
- Analyze regional experience
- Statistically analyze consumer behaviour
- Predictive analysis

1. **Control Environment -** The control environment sets the tone of an organization, influencing the control consciousness of its people
   - **Use of Assurance Tools**
2. **Risk Assessment -** Every entity faces a variety of risks from external and internal sources that must be assessed both at the entity and the activity level
   - **Use of Quantitative tools / processes**
3. **Control Activities -** These policies and procedures help ensure management directives are carried out
   - **Measurement of Adherence**
4. **Information and Communication -** Pertinent information must be identified, captured and communicated in a form and timeframe that supports all other control components
   - **Alerts, Simulation, Dashboards**
5. **Monitoring -** Internal control systems need to be monitored – a process that assesses the quality of the system's performance over time
   - **Danger Levels – alerts, RAG analysis, Control Committee**



Section 404 SOX Act addresses internal control of financial reporting (ICFR)

Merits of Quantitative Risk Management

- Quantitative Risk Management helps to assess the probability of meeting time and cost objectives.
- Prioritizing high-threat risks allows one to respond proactively before the iceberg has hit.
- Monitoring trends enables you to adjust risk management activities over time.
- Taken together, all of these outputs help you to be a successful risk manager.

Limitations to Quantitative Risk Analysis

- There are no boundaries to probabilistic risk analysis as the worst conceivable accident case is only limited by the imagination of the person doing the assessment.

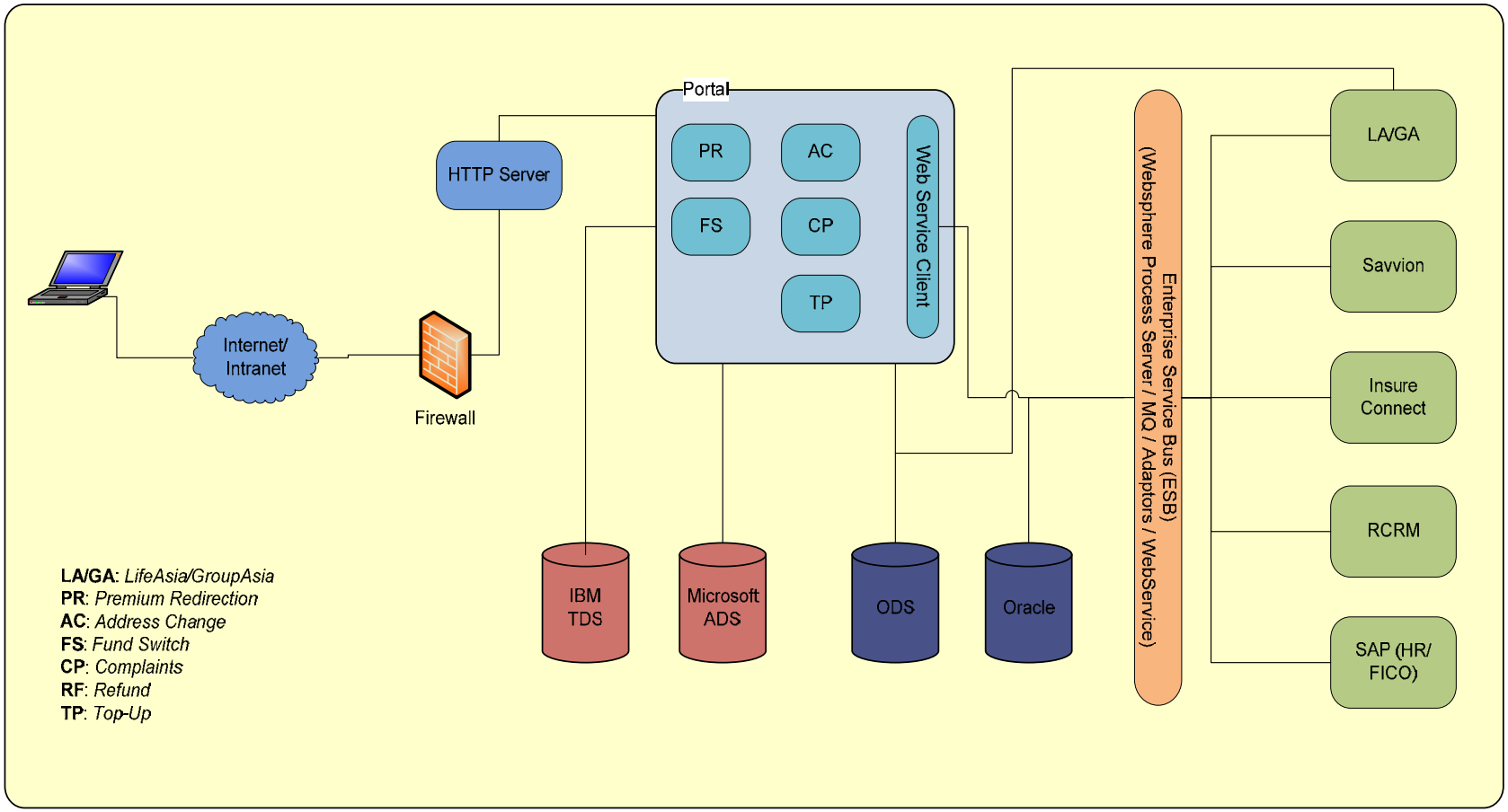
Managing Risk in my organization- Case Study

Objective

- Provide management system for controlling, monitoring, and deploying the best Practices in Life Insurance Industry

- Facilitation of Automation of processes of Risk, Compliance and Audit to enable an integrated overview

Overall SOA Architecture at RLIC



Life Asia (LA) = Back end system ; Savvion = work flow system ; Insure Connect = Auto Underwriting and channel management ;
RCRM – Reliance CRM ; SAP = HR and accounting package ; ODS = Online Data Store; TDS and ADS = Authentication servers

Technology - Project RISKMATE

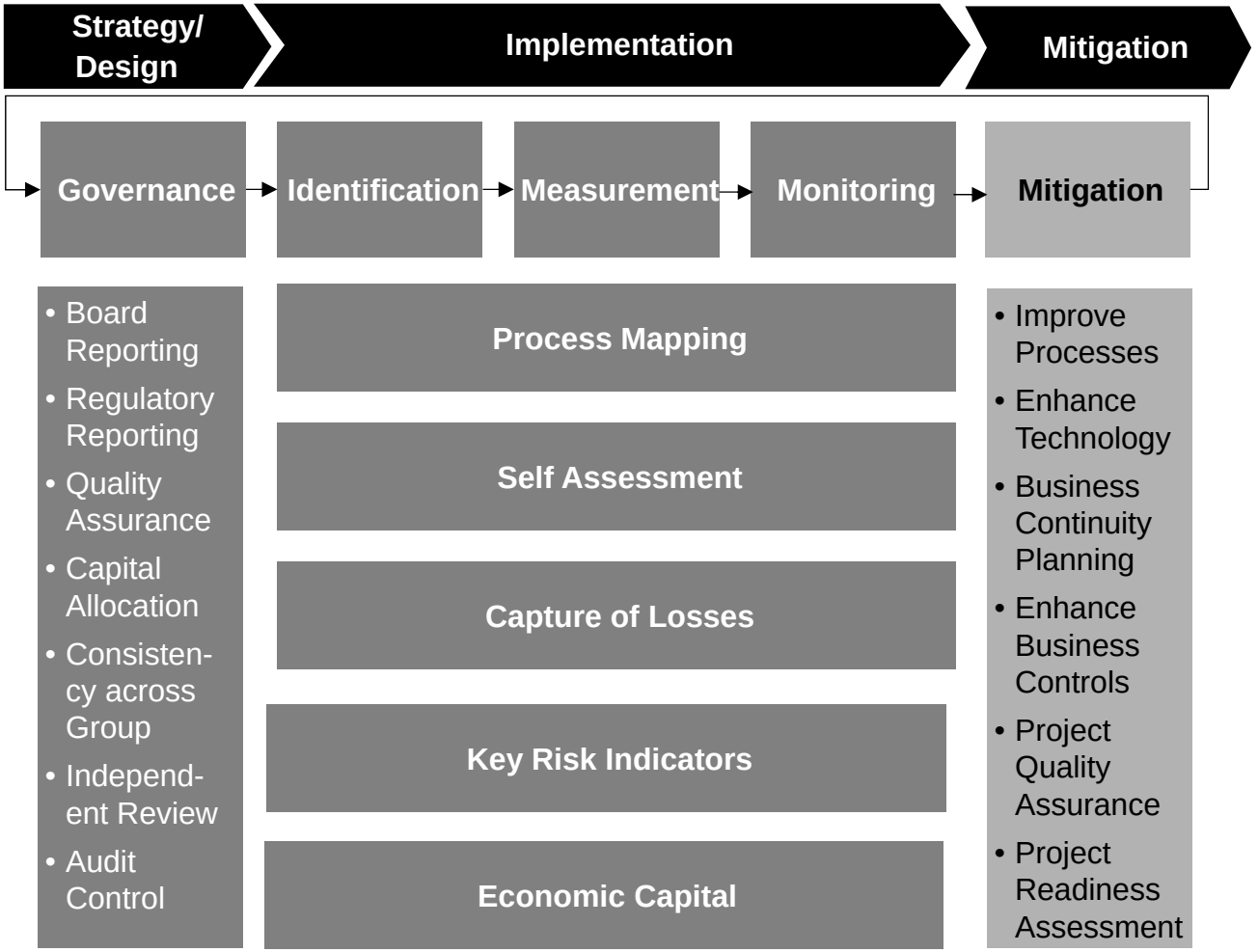
- Risk and Growth goes hands in hand. It is critical to have risk focused growth (Balance Business and Growth)
- Key objective of Project RISKMATE to automate processes related to management of Risk Based Internal Audit functions, Risk Management Functions and Compliance Functions
- Early stage automation will help in following processes in expansion phase of RLIC

The building blocks

A look at some typical building blocks that are required through out the value lifecycle

Risk Management consists of :

- Governance: Establishment of policies and the definition of the framework to implement these policies
- Identification: Stipulation and documentation of risk exposure along process and project lines
- Measurement: Qualification and quantification of risk and loss in financial value and quality
- Monitoring: Identification, tracking and control of risk events and resolution thereof
- Mitigation: Proactive mgmt. of risk exposure



High Level Requirements

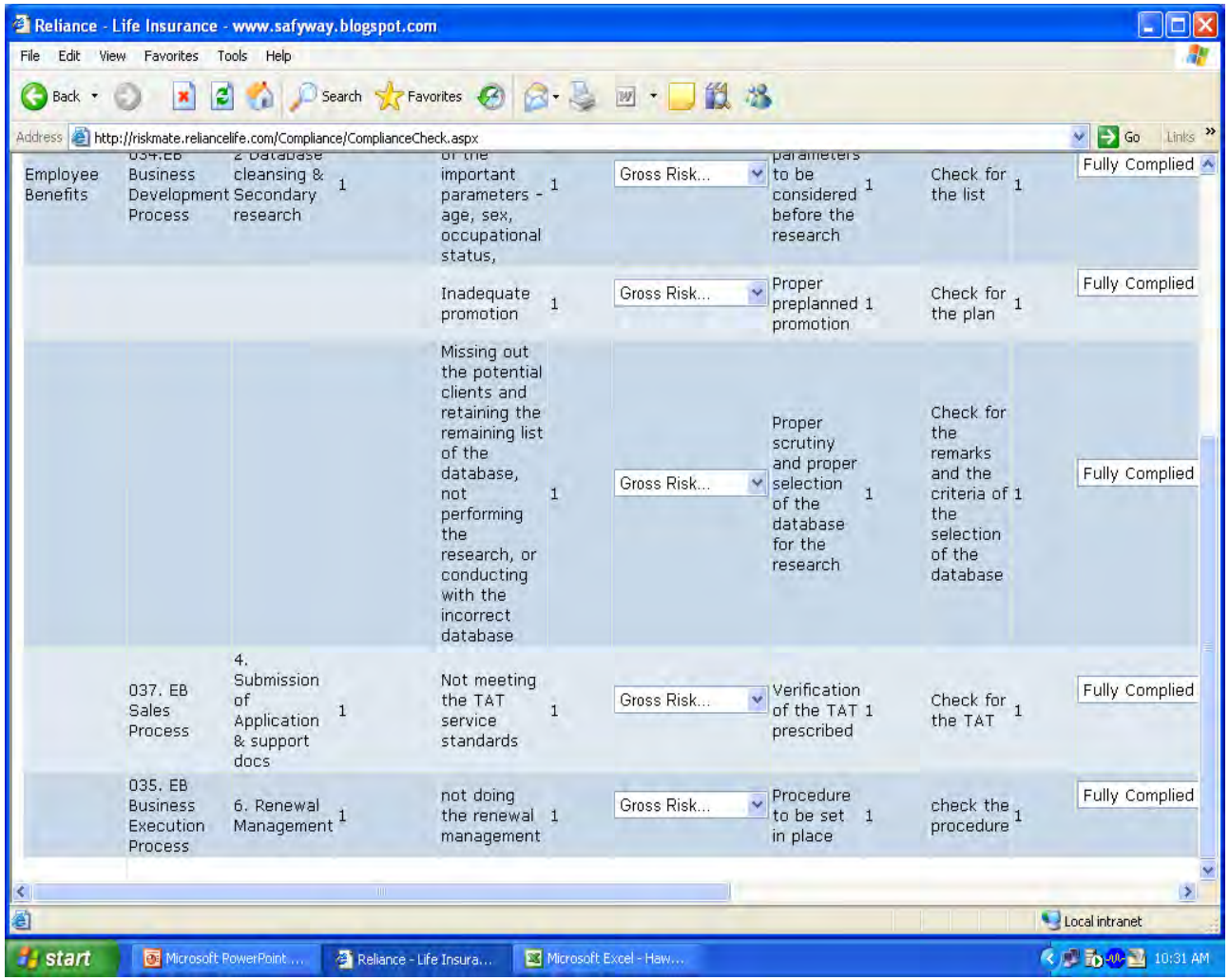
- Risk Management Module – to automate risk management processes
  - ***Risk and Control Self Assessment (SPOC involvement)***
  - ***Key Risk Indicators (SPOC Involvement)***
  - ***Incident Tracking (SPOC involvement)***
  - Analytics and business intelligence for risk measurement and quantification
  - provision for judgment validation - qualitative risk assessment
  - An Integrated database
  - Work flow to analyze information retrieved from processing systems
  - Analytics and integrators to retrieve, massage and report information from various processing and reporting systems
  - ***IT risk analysis including BCP – Business Impact Analysis (SPOC role)***

Compliance

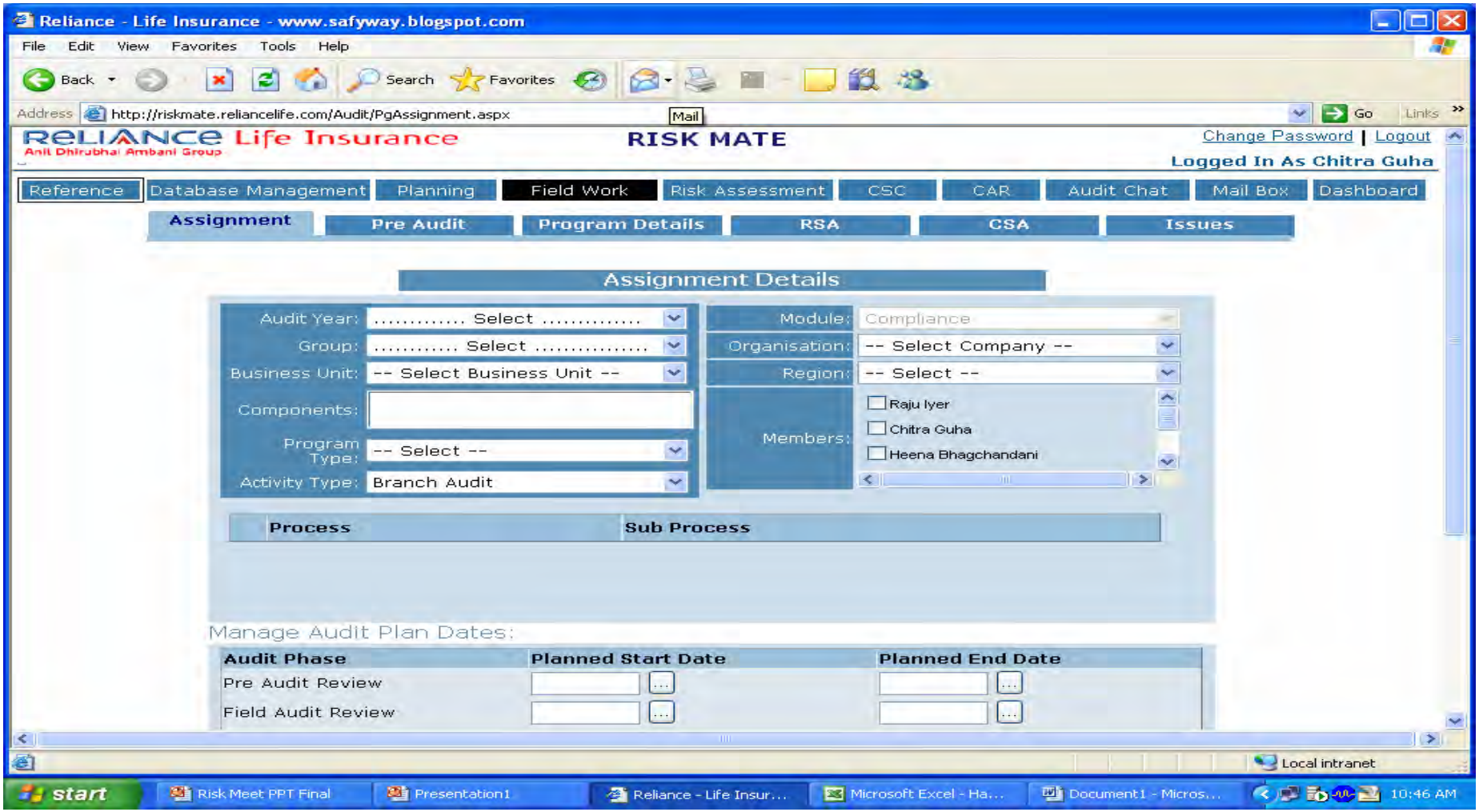
- Compliance Self Check
- Risk Assessment
- Compliance Review

Risk Assessment (Compliance)

Compliance Self Check



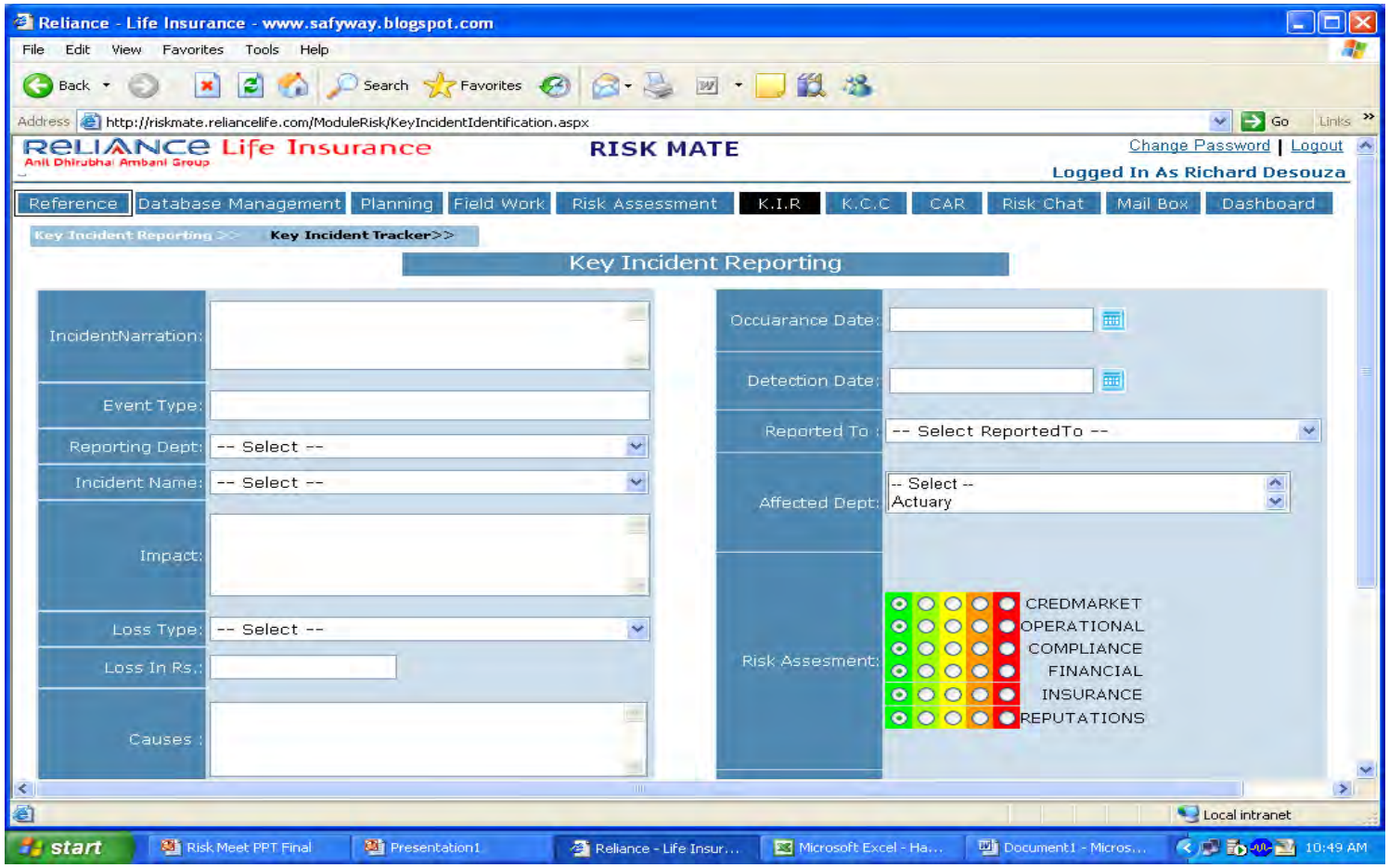
Compliance Review



Risk

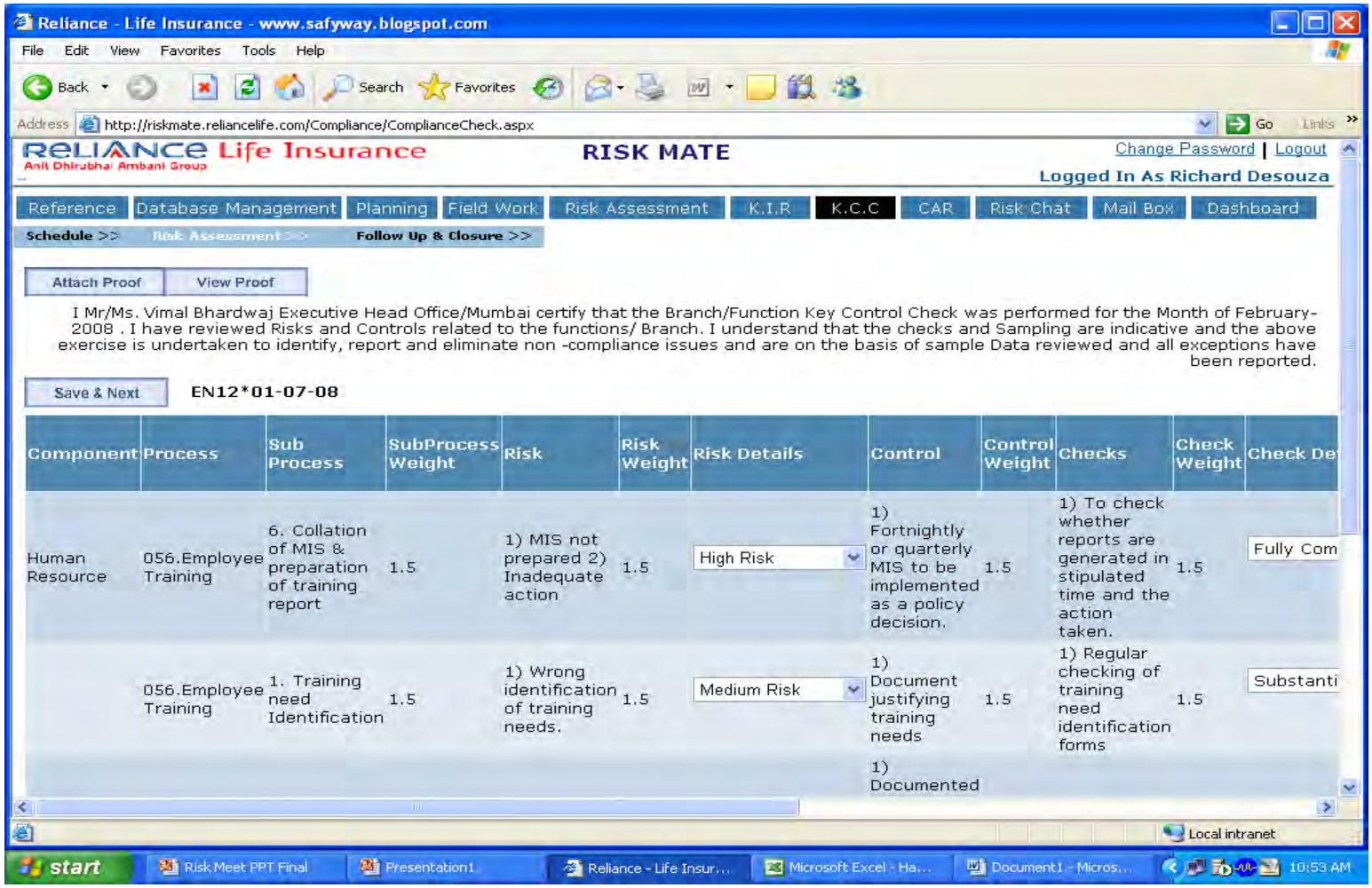
- Key Incident Reporting
- Risk Assessment
- Key Control Check
- Risk Review

Key Incident Reporting

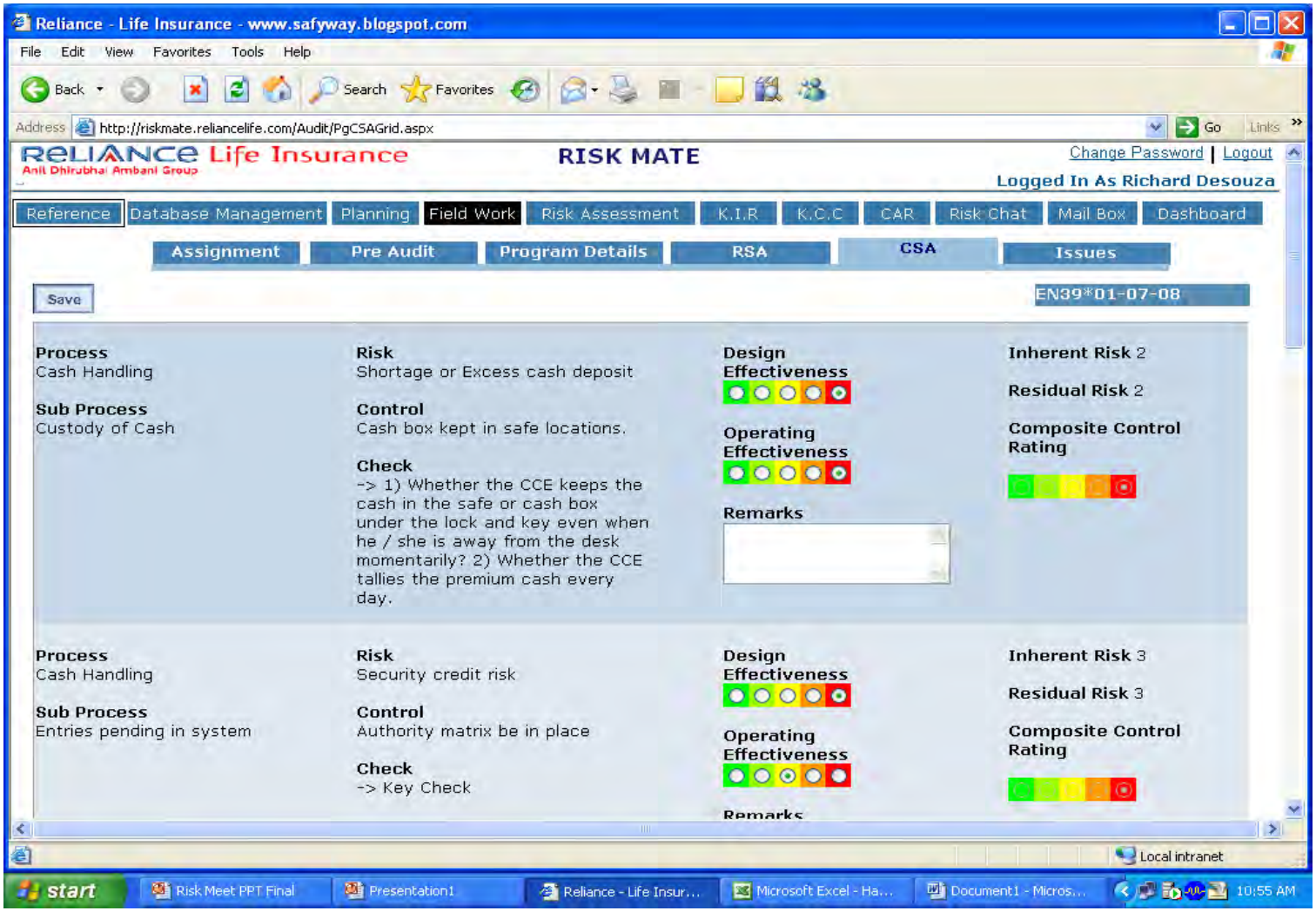


Risk Assessment

Key Control Check



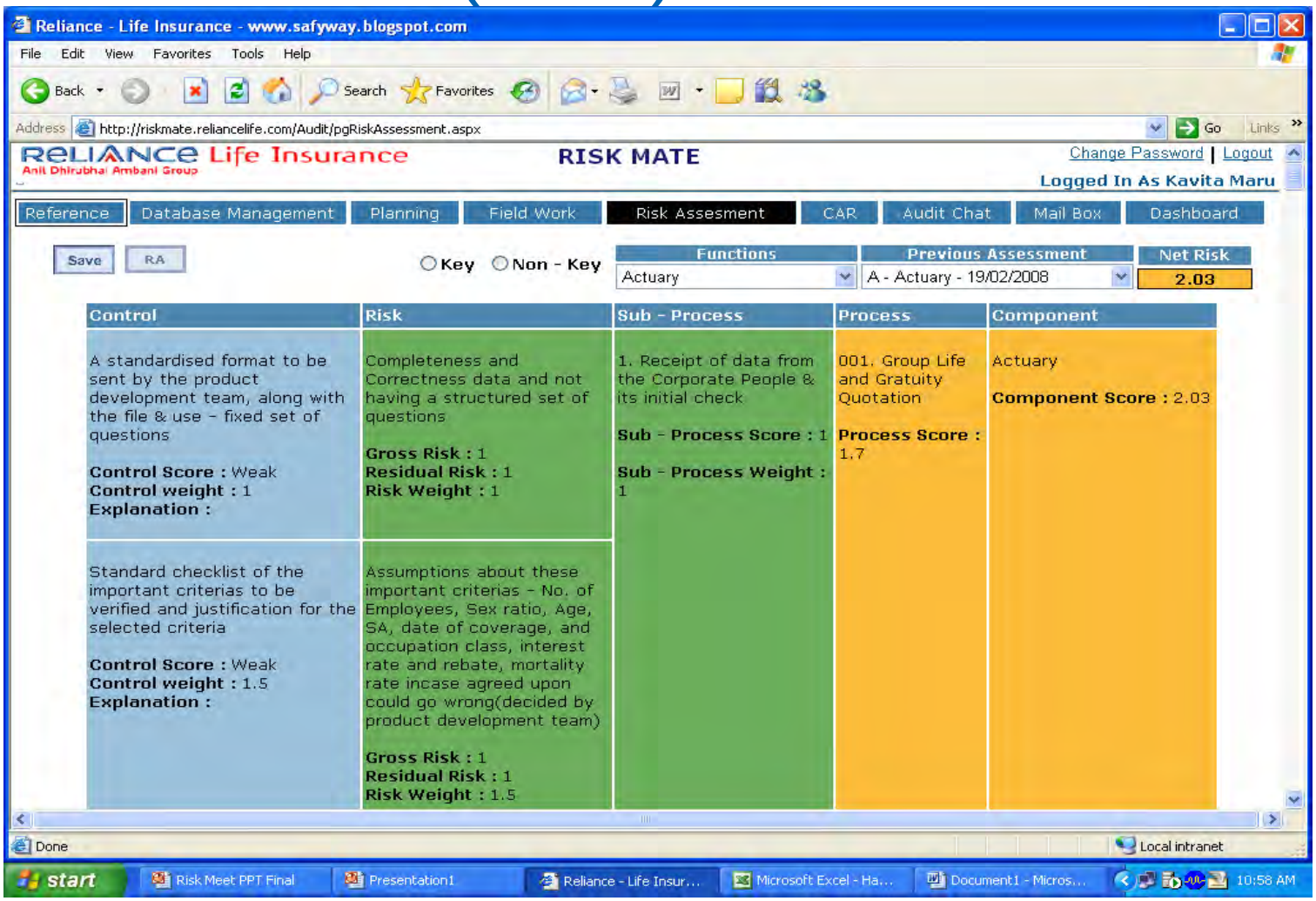
Risk Review


Reliance - Life Insurance - www.safyway.blogspot.com
File Edit View Favorites Tools Help
Back Search Favorites
Address http://riskmate.reliancelife.com/Audit/PgCSAGrid.aspx
Go Links
RELIANCE Life Insurance
Anil Dhirubhai Ambani Group
RISK MATE
Change Password | Logout
Logged In As Richard Desouza
Reference Database Management Planning Field Work Risk Assessment K.I.R K.C.C CAR Risk Chat Mail Box Dashboard
Assignment Pre Audit Program Details RSA CSA Issues
Save
EN39*01-07-08
Process
Cash Handling
Sub Process
Custody of Cash
Risk
Shortage or Excess cash deposit
Control
Cash box kept in safe locations.
Check
-> 1) Whether the CCE keeps the cash in the safe or cash box under the lock and key even when he / she is away from the desk momentarily? 2) Whether the CCE tallies the premium cash every day.
Design Effectiveness
Operating Effectiveness
Remarks
Inherent Risk 2
Residual Risk 2
Composite Control Rating
Process
Cash Handling
Sub Process
Entries pending in system
Risk
Security credit risk
Control
Authority matrix be in place
Check
-> Key Check
Design Effectiveness
Operating Effectiveness
Remarks
Inherent Risk 3
Residual Risk 3
Composite Control Rating
Local intranet
start
Risk Meet PPT Final
Presentation1
Reliance - Life Insur...
Microsoft Excel - Ha...
Document1 - Micros...
10:55 AM

Audit

- Risk Assessment

Risk Assessment (Audit)



Key Risk Indicators

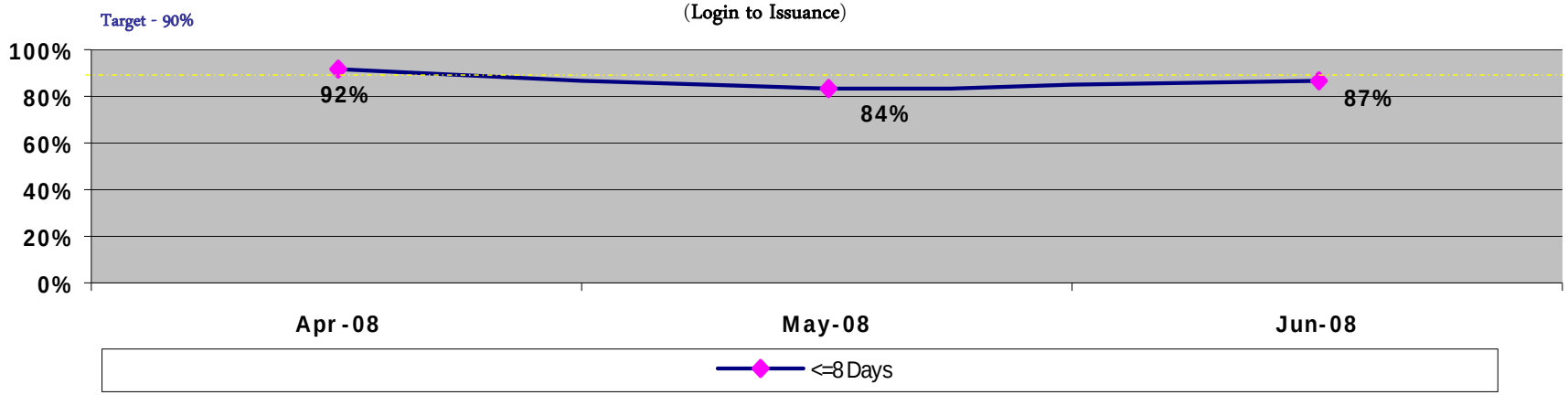
- Analytics within systems
- ODS – On Line Data Store – Click View
- Dash Boards
  - Feeds from various systems
  - 14th of every month dash board meeting held
  - Manual efforts or collation till ODS receives reports

Process Name : Operations

Process Owner Name : Rahul Belwalkar

Policy Issuance TAT

(Login to Issuance)



Defect Definition : TAT > 8 days

Opportunity : Each Proposal form is 1 opportunity

Month	TAT Adherence	Opportunities	% Adherence	% Defects	DPMO	Sigma Level
Apr 08	102,836	112,355	91.5%	8.5%	84,723	2.9
May 08	63,875	76,532	83.5%	16.5%	165,382	2.5
Jun 08	73,126	84,059	87.0%	13.0%	130,063	2.6

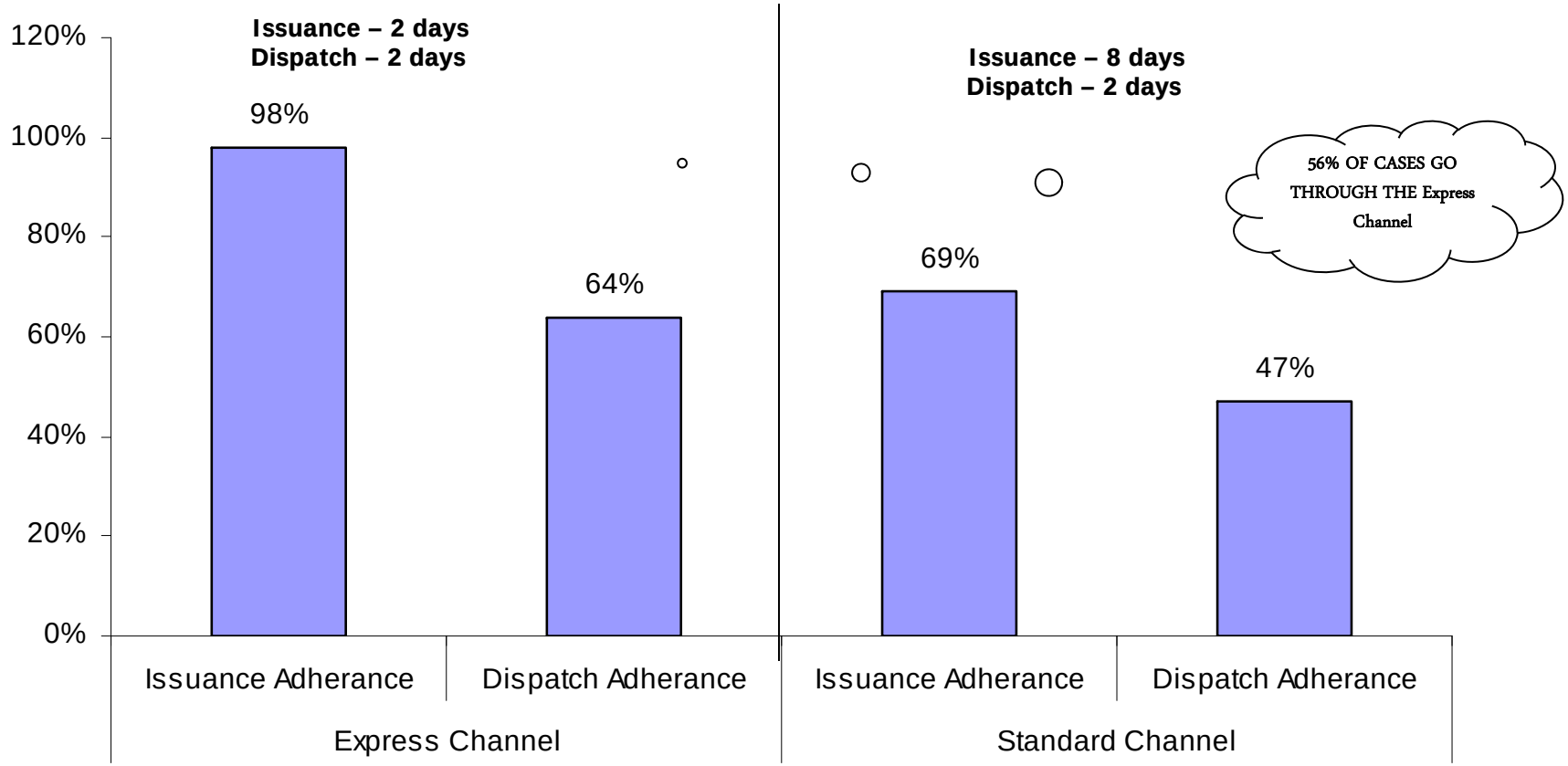
****TAT: Non Med <= 8 Days, Only Non Med Cases**

NOTE : Six Sigma = 3.4 DPMO, *Source: Life Asia

Process Name : Operations

Process Owner Name : Rahul Belwalkar

Policy Issuance (Express / Standard Channel)

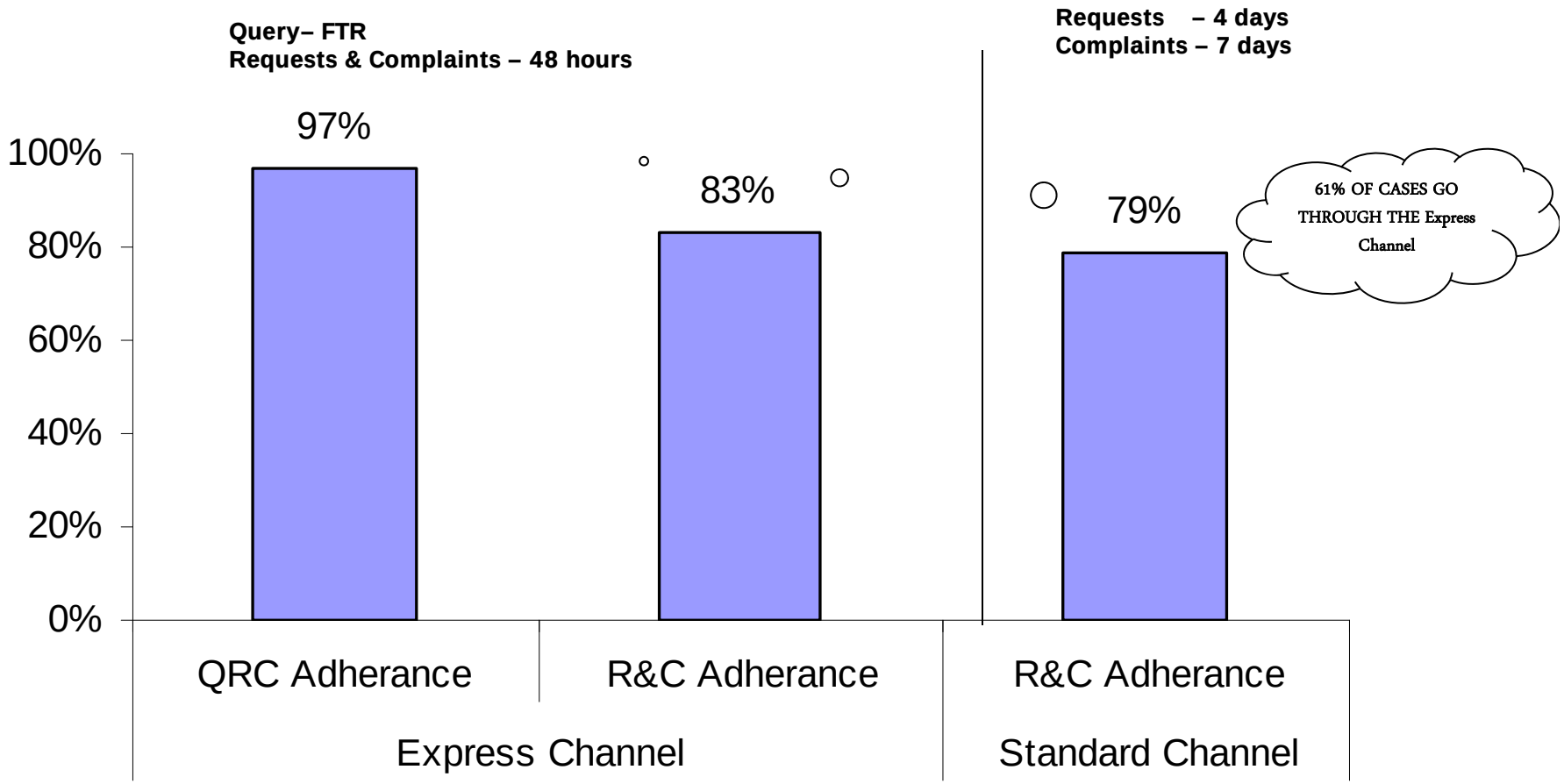


Express Channel Classification – Non-medical upto SA 5 lacs, Age – 18-45 years, Standard Occupation, No health adversity

Process Name : Operations

Process Owner Name : Rahul Belwalkar

QRC (Express / Standard Channel)

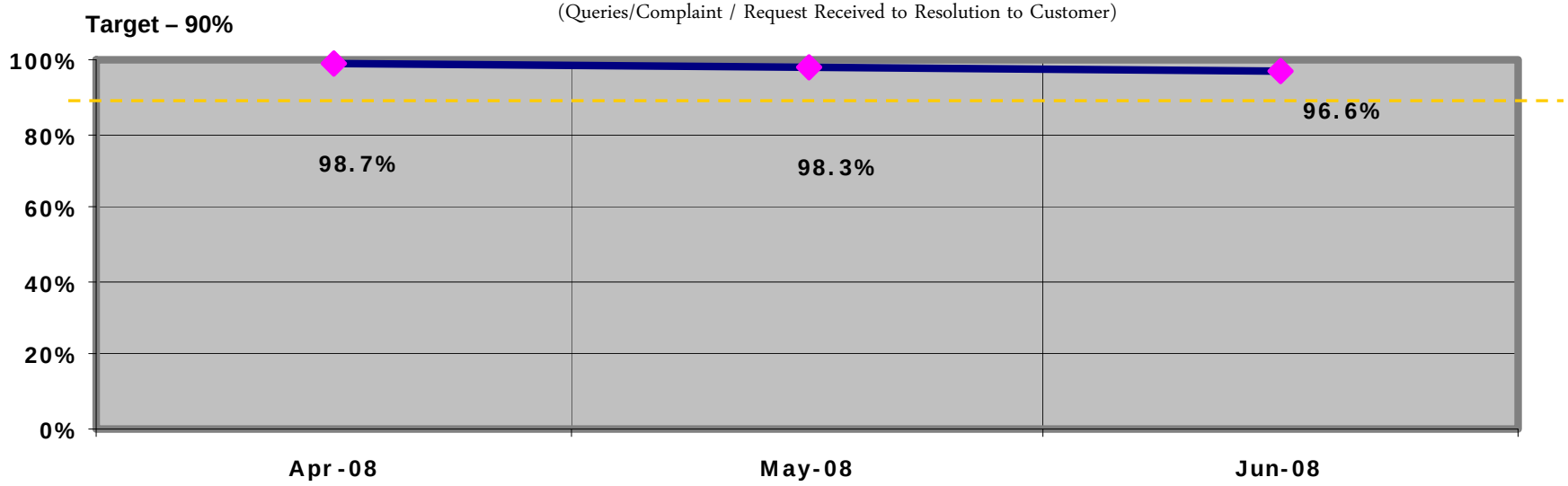


Process Name : Customer Service

Process Owner Name : Amitabh Aich

QRC Settlement - Express Channel

(Queries/Complaint / Request Received to Resolution to Customer)



Defect Definition : > Prescribed TAT

Opportunity : Each Customer QRC received

	Adherence	Opportunities	% Adherence	% Defects	DPMO	Sigma Level
Apr 08	60,248	61,027	98.7%	1.3%	12,765	3.7
May 08	49,962	50,843	98.3%	1.7%	17,328	3.6
Jun 08	50,893	52,668	96.6%	3.4%	33,702	3.3

**TAT: Query,Request & Complaint Green Channel <=2 Days

NOTE : Six Sigma = 3.4 DPMO, Source: RCRM Queries-42385, Requests 30144, Complaints 13673

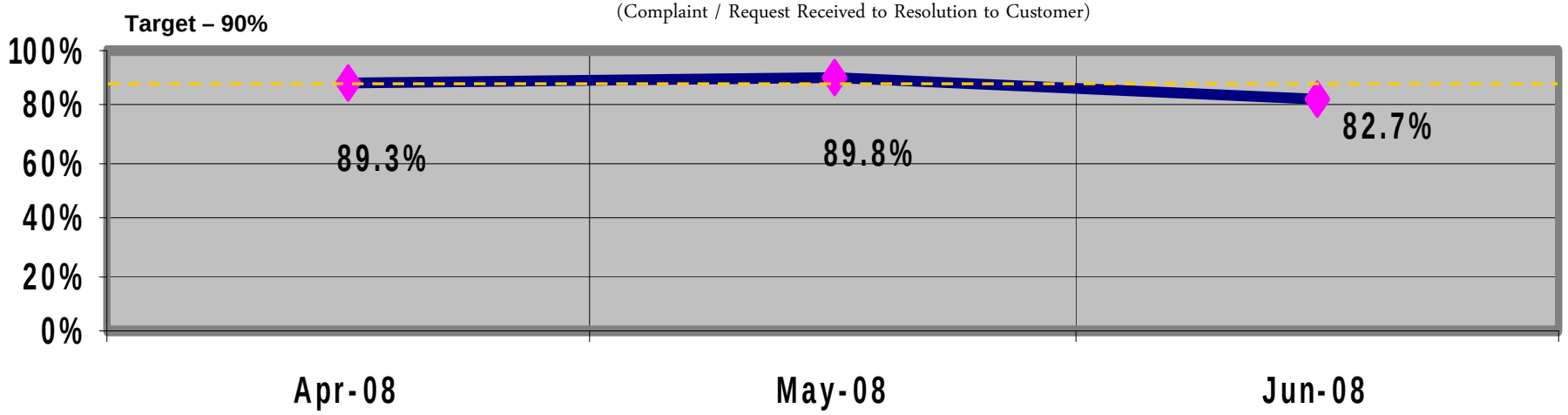
Includes Complaints logged in Mumbai & Call Center escalations

Process Name : Customer Service

Process Owner Name : Amitabh Aich

Request & Complaint Settlement - Express Channel

(Complaint / Request Received to Resolution to Customer)



Defect Definition : > Prescribed TAT

Opportunity : Each Customer Complaint / Request received

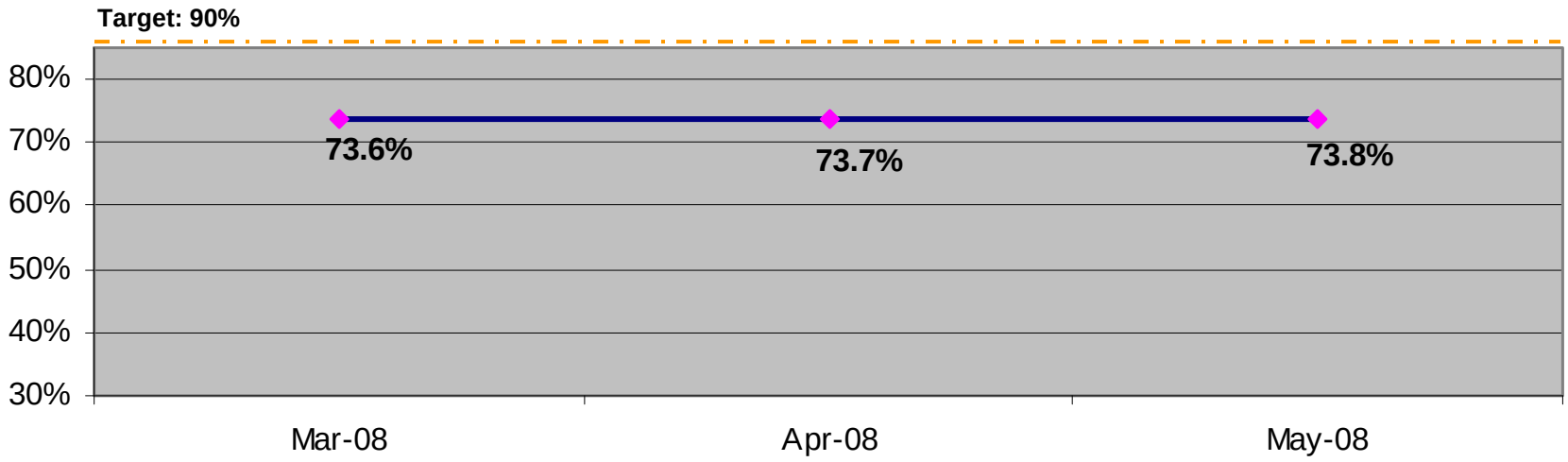
	Adherence	Opportunities	% Adherence	% Defects	DPMO	Sigma Level
Apr 08	6,493	7,272	89.3%	10.7%	107,123	2.7
May 08	7,741	8,622	89.8%	10.2%	102,180	2.8
Jun 08	8,508	10,283	82.7%	17.3%	172,625	2.4

**TAT: Request & Complaint Express Channel <=2 Days

NOTE : Six Sigma = 3.4 DPMO, Source: RCRM

Includes Complaints logged in Mumbai & Call Center escalations

LIMRA 13 months persistency – Annualised Premium



	Adherence	Opportunities	% Adherence	% Defects	DPMO	Sigma Level
Mar 08	535.3	727.6	73.6%	26.4%	264,294	2.1
Apr 08	547.5	742.8	73.7%	26.3%	262,294	2.1
May 08	523.8	709.8	73.8%	26.2%	262,046	2.1

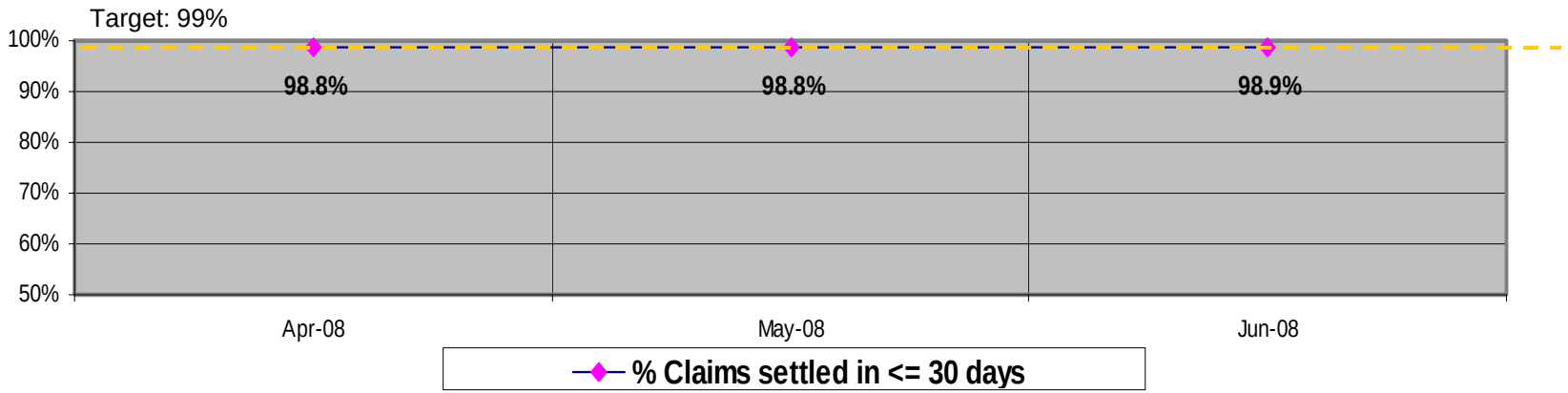
Definition : Inforce policies at the end of 13 months from the last date of the period under consideration / (total policies issued under the period minus policies with CF, NC,PO, PS, UW status)
(CF- cancel from inception, NC- No cash, PO- Postpone, PS- Pending proposal,UW- Underwriting)

Process Name : Claims Settlement Process

Process Owner Name : Hemalapathi

TAT for Claims (Death & Critical Illness Claims)

(From Claimant handing over claim to dispatch of cheque/letter)



Defect Definition : Claim settled in > 30 days

Opportunity : Each Death &CI Claim received is 1 opportunity

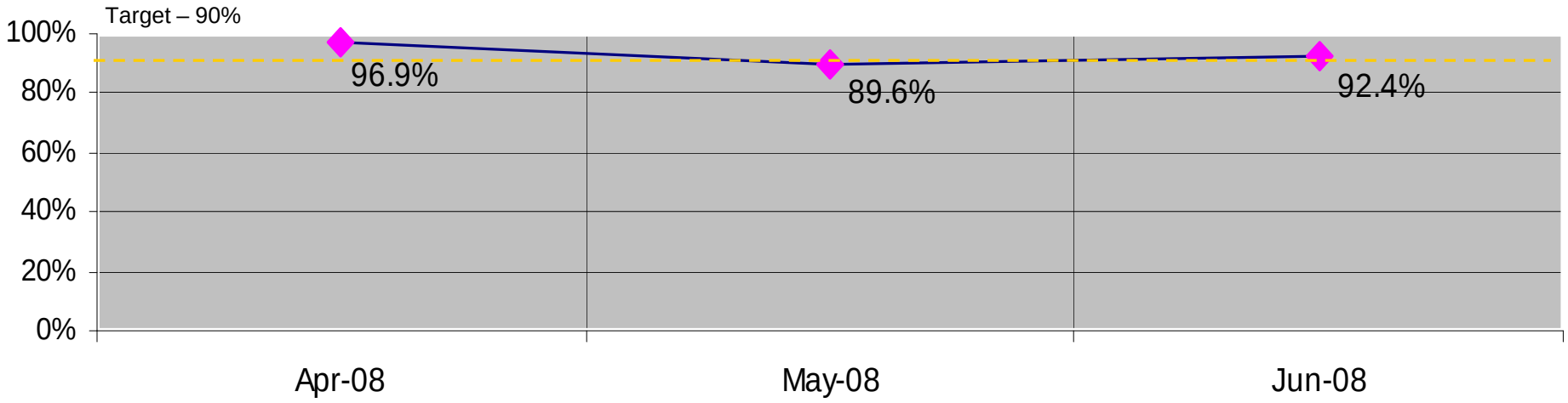
Month	TAT Adherence	Opportunities	% Adherence	% Defects	DPMO	Sigma Level
Apr 08	166	168	98.8%	1.20%	11,905	3.8
May 08	159	161	98.8%	1.20%	12,422	3.7
June 08	190	192	98.9%	1.10%	10,417	3.8

NOTE : Six Sigma = 3.4 DPMO, * Source: Claims Register

Process Name : Sales Process

Process Owner Name : Sales Head / Sunder Krishnan

Quality of Sales



Defect Definition : Sales with following defects *

Opportunity : Each login is 1 Opportunity

Month	TAT Adherence	Opportunities	% Adherence	% Defects	DPMO	Sigma Level
Apr 08	1,951	62,321	96.9%	3.1%	31,306	3.4
May 08	8,374	80,524	89.6%	10.4%	103,994	2.8
Jun 08	9,142	120,138	92.4%	7.6%	76,096	2.9

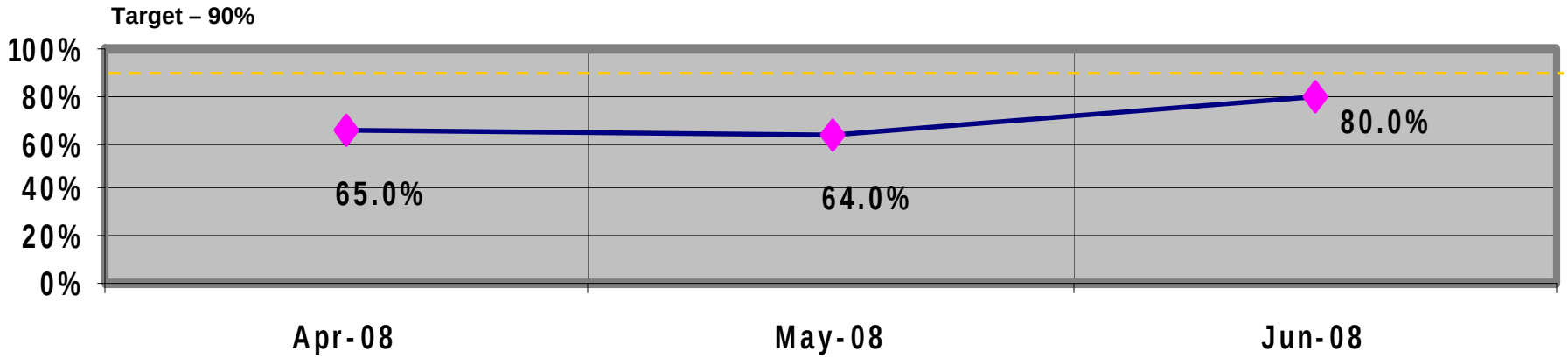
NOTE : Six Sigma = 3.4 DPMO, * Source: Claims Register
*** AML CFR, Chq Bounce, Mis-Selling Complaints, Non-Disclosure, Mis-representation**

Process Name : Customer Service

Process Owner Name : Amitabh Aich

Complaint Settlement

(Complaint Received to Resolution to Customer)



Defect Definition : > Prescribed TAT

Opportunity : Each Customer Complaint / Request received is 1 Opportunity

	Adherence	Opportunities	% Adherence	% Defects	DPMO	Sigma Level
Apr 08	13,661	21,062	65%	35%	351,391	1.9
May 08	12,957	20,120	64%	36%	356,014	1.9
Jun 08	10,925	13,673	80%	20%	200,980	2.3

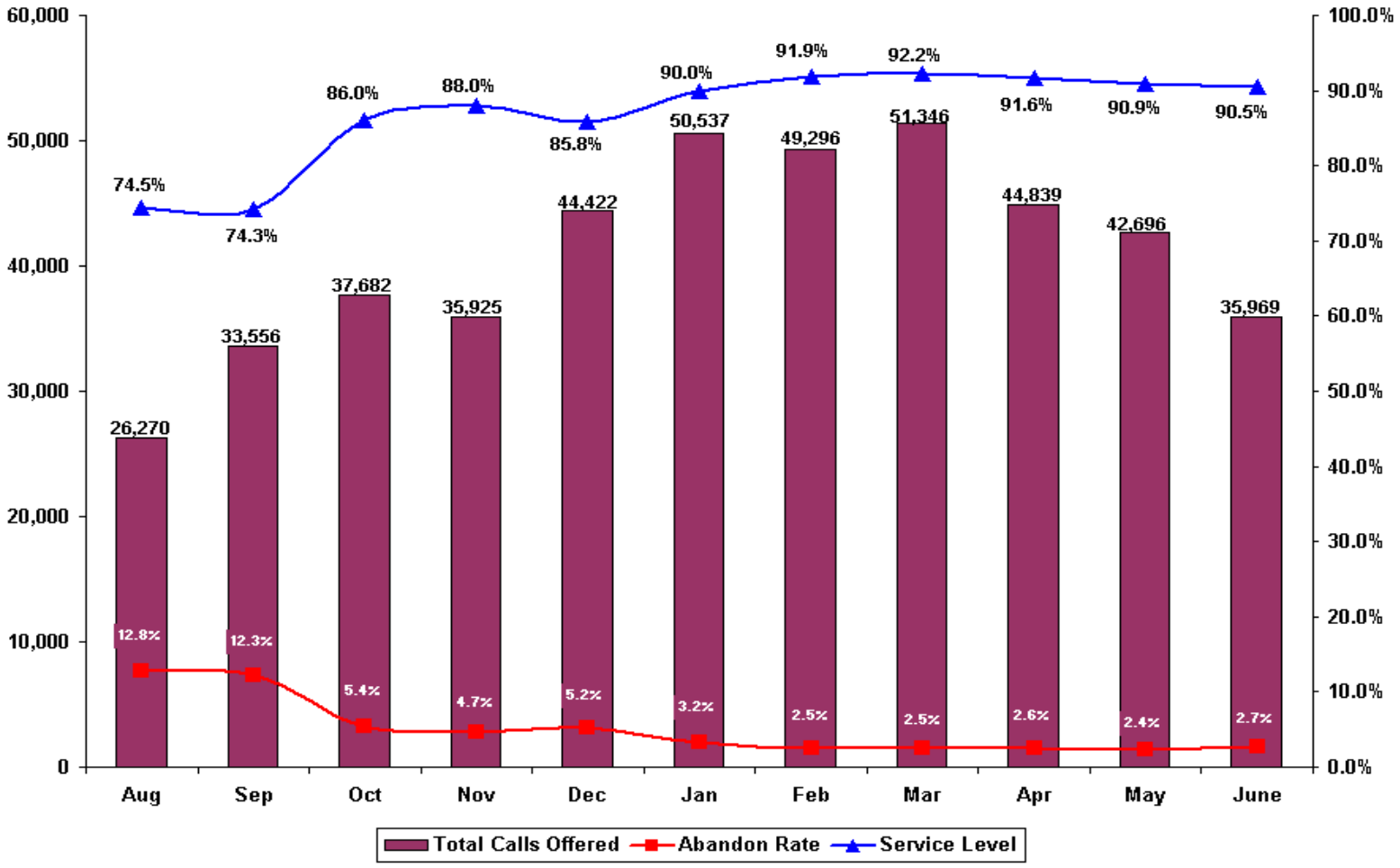
.**TAT: Complaint <= 7 Days

NOTE : Six Sigma = 3.4 DPMO, Source: RCRM

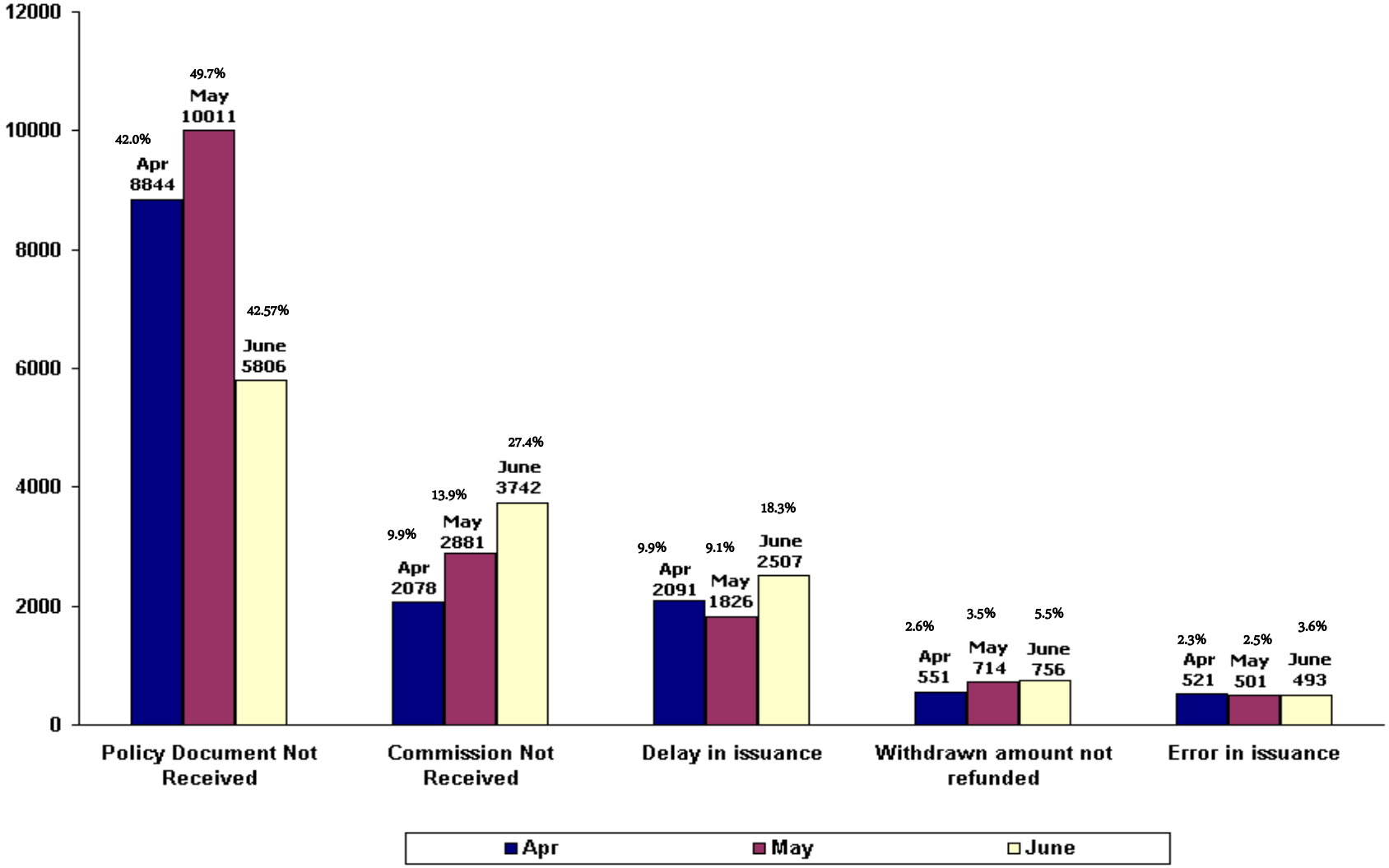
Includes Complaints logged in Mumbai & Call Center escalations

Call Centre Operations – Key Metrics

	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08
Total Calls Offered	26,270	33,556	37,682	35,925	44,422	50,537	49,296	51,346	44,839	42,696	35,969
Abandon Rate	12.8%	12.3%	5.4%	4.7%	5.2%	3.2%	2.5%	2.5%	2.6%	2.4%	2.7%
Service Level	74.5%	74.3%	86.0%	88.0%	85.8%	90.0%	91.9%	92.2%	91.6%	90.9%	90.5%
Avg Abdn Time	01:18	01:05	00:50	00:42	00:55	00:46	0:41	0:35	0:32	0:34	0:32
Avg. Hold Time (mm	01:07	00:45	00:31	00:34	00:42	00:38	0:03	0:39	0:37	0:36	0:36
Avg Talk Time	05:03	04:30	03:59	03:59	03:35	04:00	3:57	3:46	3:54	3:44	3:50

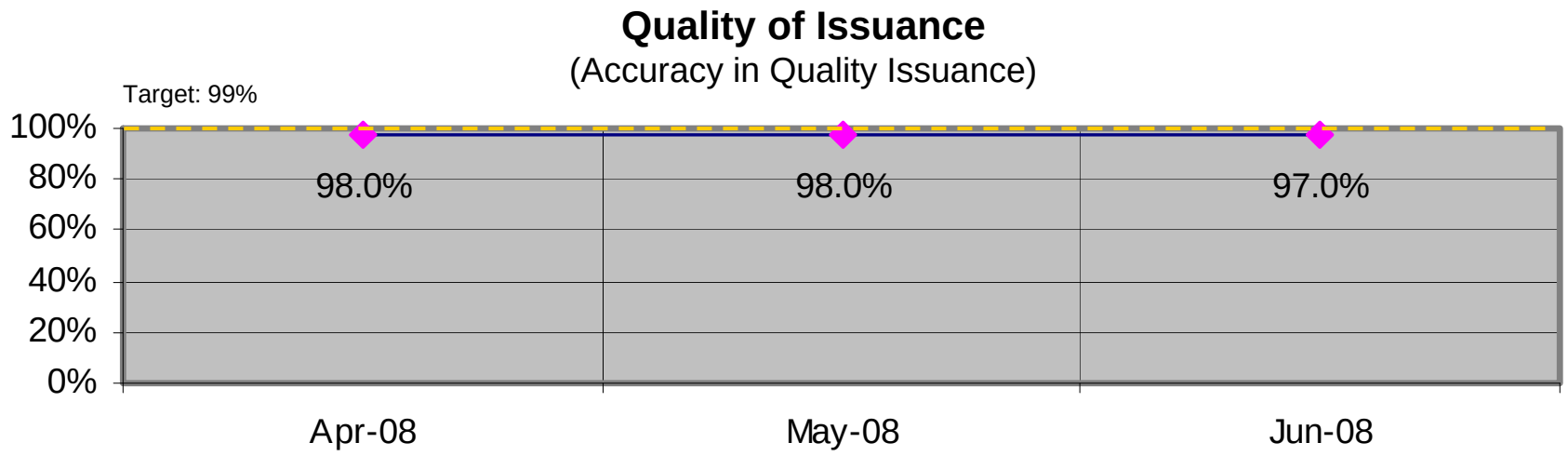


Top 5 Complaints



Process Name : Quality of Issuance

Process Owner Name : Santosh Ranade



Defect Definition : Every issuance with Error

Opportunity : Each issuance in is 1 Opportunity

Month	Adherence	Opportunities	% Adherence	% Defects	DPMO	Sigma Level
Apr 08	167675	170748	98%	2%	17,997	3.6
May 08	81985	83546	98%	2%	18,684	3.6
Jun08	109934	113121	97%	3%	35,023	3.3

NOTE : Six Sigma = 3.4 DPMO, Source: Log maintained by Printer
Sample QC done by Issuance Team- 97.8%. Sample Size 1790

Road Map

- Policies development
- Roles & Responsibilities
- Design
- Implement
- Monitor
- Awareness, Training and Education

Questions?

A hot-air balloon floats overhead…

RM: I’m lost, can you tell me where I am?

RA: Sure, you are 30 feet off the ground

RM: Aha, you must be a risk assessor

RA: Why yes, how did you know?

RM: Because what you told me was technically correct, but of absolutely no use.

A hot-air balloon floats overhead…

RA: Aha, you must be a risk manager?

RM: Why yes, how do you know?

RA: That's easy, you don't know where you are, what you want or where you are going… and you are in the same position now as you were before you asked for my help, but now it's my fault!

Thank You