BUSINESS INTELLIGENCE-
PREDICTIVE DATA ANALYTICS,
BUSINESS MODELLING &
SIMULATION FOR GOVERNMENT
DISCUSSION POINTS

1. What is business intelligence, data mining and predictive analytics?
2. Major IT applications in government
3. Operational vs Decision support systems
4. What does the architecture not do?
5. Why does the architecture not suffice?
6. What business modelling and simulation is not
7. Why business modelling and simulation?
8. Challengers in the business modelling and simulation environment
9. Business modelling and simulation approach
WHAT IS BUSINESS INTELLIGENCE
1. Collecting and refining information from many sources.
2. Analyzing and presenting the information in useful ways.
3. So people can make better decisions.

WHAT IS DATA MINING
1. Using a combination of artificial intelligence and statistical analysis to analyze data.
2. And discover useful patterns hidden in the data.

WHAT IS PREDICTIVE ANALYSIS
1. Using statistical techniques to predict future trends based on patterns in the data.
MAJOR IT APPLICATIONS IN GOVERNMENT

Operations Reports: Daily, Weekly, Quarterly, and Annually

Integrated Enterprise reporting

.reporting levels

MINISTER
DST- APP
Board and Sub Committees
EXCO/ OPSCOMM
Operations Reports

Source: TIA (2016) RFP NO. TIA004/2016
OPERATIONAL VS DECISION SUPPORT SYSTEMS

1. Operational systems
   a) Support day to day transactions
   b) Contain current “up-to-date” data
   c) Examples allocation of funds, inventory levels, account balances, etc.

2. Decision support systems
   a) Support strategic decision making
   b) Contain historical “summarized data”
   c) Examples performance summary, performance of BBBEE suppliers, spend segmentation BBBEE Vs other suppliers, etc.
OPERATIONAL VS DECISION SUPPORT SYSTEMS

Enterprise

Decision support systems

Links customers, suppliers and partners

Transactional system
WHAT DOES THE ARCHITECTURE NOT DO

- BUSINESS MODELLING AND SIMULATION
- DATA ANALYTICS AND PREDICTIVE ANALYTICS
- BUSINESS INTELLIGENCE SYSTEM
WHY DOES THE ARCHITECTURE NOT SUFFICE?

Business intelligence, data mining and predictive analytics gives you predictive capability based on historical patterns

IT DOES NOT

Simulate the enterprise for example it does not tell you how your enterprise will perform depending on the different scenarios

This is what business modelling and simulation needs to do the current architecture does not allow for this. This “intelligence” needs further functionality
WHAT BUSINESS MODELLING AND SIMULATION IS NOT

1. While simulation can be a powerful and useful tool when correctly applied.
2. It is not a panacea for all system related problems.
3. Simulation is primarily intended to address the operational aspects of a system.
4. It addresses what, when, where and how tasks are performed.
5. It goes without saying that not all of the issues affecting system performance are operational issues.
WHAT BUSINESS MODELLING AND SIMULATION IS NOT

6. There are also human and technological issues to be addressed.

7. In fact manufacturing and service systems are often referred to as sociotechnical systems to emphasize the important role that human and technological systems play in the operation of a system.

8. It is the combination of these 3 aspects (human, technological and operational) that ultimately determines system performance.
MIND THE GAP
BUSINESS MODELLING AND SIMULATION THE CATALYST FOR ENTERPRISE CHANGE

“Doing things right” (efficiencies)

“Doing the right things” (effectiveness)
WHY BUSINESS MODELLING AND SIMULATION

1. Business modelling and simulation is a catalyst for organizational change.

2. Use information to fundamentally change how people work which will affect the enterprises culture and climate.

3. Affecting culture and climate will affect the enterprises organizational and environmental evolution.

4. Business modelling and simulation is a continuous improvement process.

5. Business modelling and simulation will not give you operational effectiveness it is how one uses business modelling and simulation that creates operational effectiveness.

6. Insufficient and poor management can be the biggest failure.
CHALLENGERS IN THE BUSINESS MODELLING AND SIMULATION ENVIRONMENT

1. Right combination of methodology and techniques.
2. Blending of traditional and nontraditional techniques.
3. Disassociating business modelling and simulation to particular technologies.
4. Understand what, where and how the technology or technique fits in the overall business modelling and simulation environment.
5. Managing the change, behavioral aspects and creating the performance culture.
CHALLENGERS TO SUPPORT BUSINESS MODELLING AND SIMULATION

1. Quality of the data
   a) Data accuracy
   b) Providing real time data

2. Availability of business modelling and simulation tools
   a) Ensuring ROI on tools
   b) Ensuring alignment with current IT and business modelling and simulation environment

3. Ensuring delivery
   a) Successful and timely implementation of business modelling and simulation projects

4. Alignment and agility
   a) Support business modelling and simulation strategy and enterprise goals

5. Building capabilities
   a) Competencies development
   b) Governance mechanism for managing business modelling and simulation
BUSINESS MODELLING AND SIMULATION APPROACH

1. Business modelling and simulation competence center
   a) Permanent formal organizational structure.
   b) Supports and promotes effective use of business modelling and simulation.
   c) Coordinates and compliments existing efforts.
   d) Redundancy and improve effectiveness.

2. Typical roles and responsibilities
   a) Data and application management.
   b) Business process management.
   c) Project and change management.
DISCUSSION SESSION