

Architecture based Transformation of a Large Enterprise

Some of my learnings
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Introduction

Large Enterprise

- One of the four large banks in Australia
- Full range of financial services
- A Group
- 52,000 people in the group
- 3000 people in IT
- Emerged from a government structure
- Transitioned IT from almost total outsourcing to in house IT
- No GFC impact and very profitable

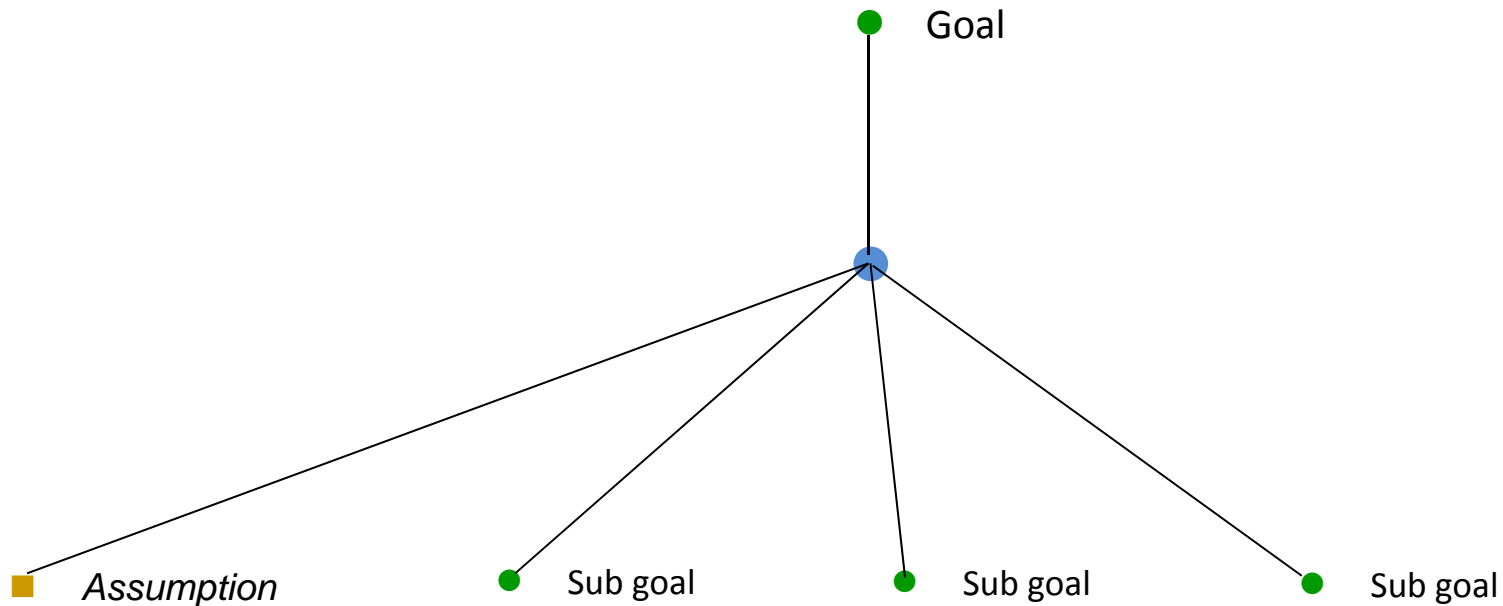
Transformation

- From current state (as-is, reality,...)
- To target state (vision, to-be, ideal)
- Via a migration path involving numerous intermediate states

Architecture

Decisions on Structure

Goals Modeling – a conceptual view



- Goals and assumptions are stated as something that is true at some future time
- Information model developed in parallel
- A much better language for dialoging with business people and non-IT people
- No more requirements – instead goals and specifications
- Good refinement is hard

- **The bank is the leading Australian full service bank across the Asia-Pacific market**
 - Full Service requires a portfolio of region-wide common and country-unique financial services
 - The bank offers an optimal set of region-wide common financial services
 - The bank offers an optimal set of country-unique financial services
 - Retail customers are highly mobile across the Asia-Pacific Market
 - Corporate customers are often multi-national and multi-location across the Asia-Pacific Market
 - Customer has access to all country-unique and region-wide services uniformly and consistently across the Asia-Pacific market
 - The bank is, and wants to remain, the #1 Australian bank in the region
 - The bank delivers its common, unique, and uniformly accessed services better than its Australian competition

● The bank is the leading Australian full service bank across the Asia-Pacific market

- Full Service requires a portfolio of region-wide common and country-unique financial services
- The bank offers an optimal set of region-wide common financial services
 - The bank currently has a set of candidate common financial services tuned to the Australian market
 - The optimal set for the Asia-Pacific market is likely to be somewhat different, and vary across sub-regions
 - The bank defines "optimal" from the above and implements accordingly
- The bank offers an optimal set of country-unique financial services
 - Many countries have existing local players to potentially provide country-unique services
 - The bank has acquired the right local players for country-unique services
 - Acquired local players must fit into overall country-unique plus region-wide common strategy
 - The bank has integrated local players to match its Operating Model
 - There are country-unique financial services opportunities beyond what local players provide
 - The bank has identified and filled other country-unique needs through development
- Retail customers are highly mobile across the Asia-Pacific Market
- Corporate customers are often multi-national and multi-location across the Asia-Pacific Market
- Customer has access to all country-unique and region-wide services uniformly and consistently across the Asia-Pacific market
 - Uniform access requires integration of banking services (both shared and unique) across the region
 - The bank operates a single and optimal Operating Model across the region
 - Operating model options include integrated (data), replicated (standard process), both, or neither
 - Too much standardization can constrain innovation, too much integration brings cost with little benefit
 - An optimal operating model needs to balance the above
 - Each business process has been categorized along two dimensions: geographic and operating model style
 - Customer information system supports replication and integration, while integrity and security are ensured
- The bank is, and wants to remain, the #1 Australian bank in the region
- The bank delivers its common, unique, and uniformly accessed services better than its Australian competition
 - Some bank legacy assets are not operationally meeting market needs
 - The core-banking modernization and payments initiatives will allow upgrading of these legacy assets
 - All assets should fit within a target Solution Portfolio architecture of Solutions, Products, Components, Shared Services, Optimized Processes
 - The bank Solution Portfolio has optimal coverage of Market Needs (common, shared, uniform access)
 - The bank Solution Portfolio is internally optimal in its architecture of shared components

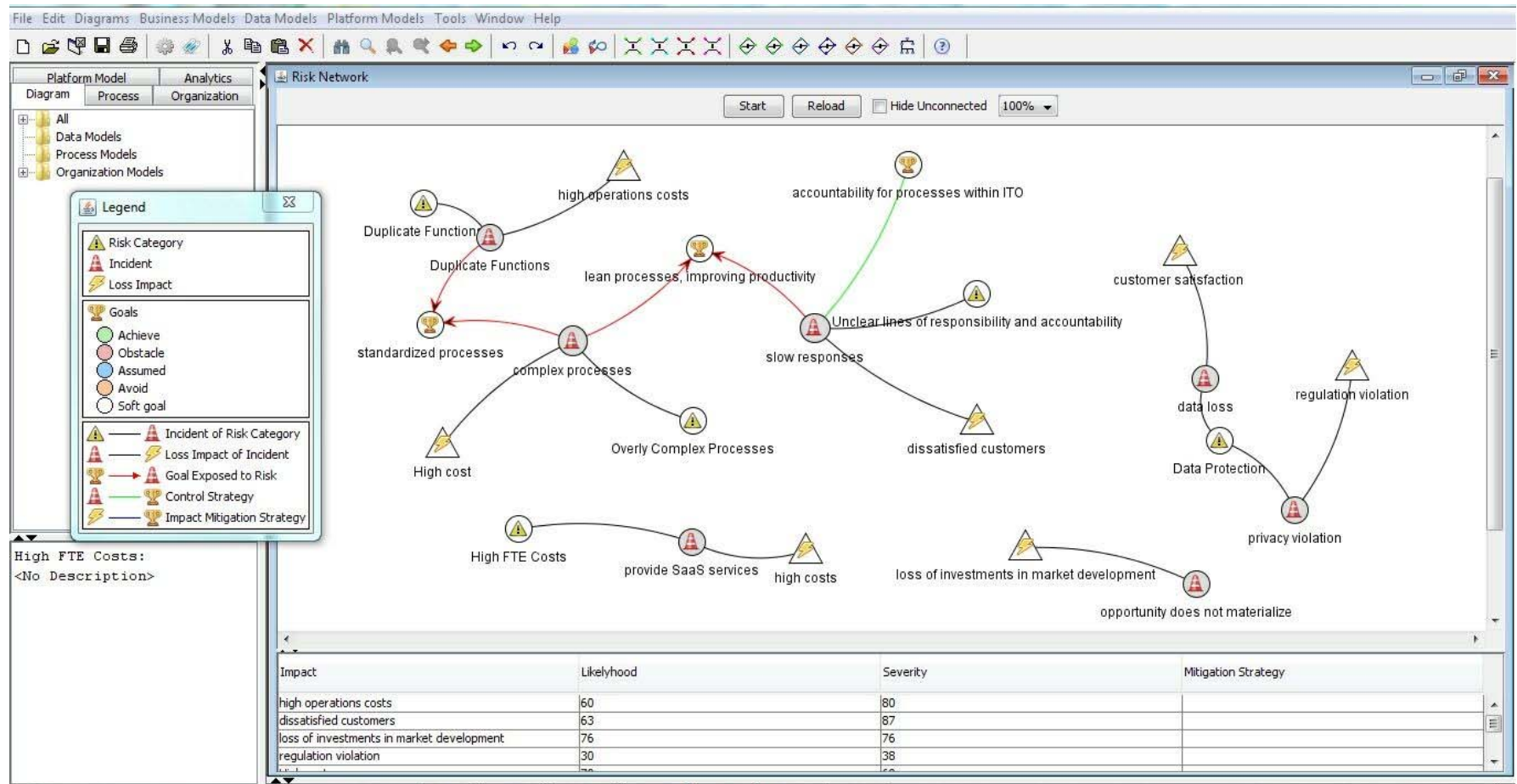
- **CBM provides bank customers the ability to review all financial transactions anytime and anywhere**

- *Customer financial transaction review requires that information about all transactions be stored for subsequent access*
- CBM offers a financial Transaction History Enterprise Operational Data Store (TXODS)
 - *The TXODS is populated by data including payment transactions fed by the UPC*
 - *The TXODS contains real time data for operations*
 - *The TXODS stores rich data for all transactions*
 - *The TXODS provides a single transaction reference*
 - *The TXODS supports transactional journals*
 - *The TXODS contains transaction status progressions*
 - *The TXODS keeps a transaction history for all channels*
 - *The TXODS supports Investigation (including self help)*
 - *The TXODS implements the capabilities of above*
 - *Customer financial transaction review include extended capabilities for payments (UPC)*
 - *The TXODS offers a Single View of Payments*
 - *The TXODS supports a Payments Dashboard (BAM)*
 - *All financial transactions of retired, modified and new financial products must be real time reviewable for <x> years*
 - *The TXODS archives transactions older the <x> years for off-line access*
- *Customers use financial transactions to interact with all CBA financial products*
- Every financial product interoperates with the TXODS
 - *Financial products change over time and can't be depended on for consistently storing transactions history*
 - *Multiple stores of transaction history would cause significant synchronization and integration problems*
 - *The schema/structure of the transaction information must be hidden from the consumers to avoid dependencies*
 - *The Enterprise TXODS offers a shared SOA data service enablement of all its capabilities*
- *All financial transactions must be reviewable*
- The TXODS implements transaction review for all financial transactions types
 - *Financial transactions are either short or long lived*
 - *Short-lived financial transactions can be reviewed only after their completion*
 - *Long-lived financial transactions can be reviewed while in flight and after their completion*
 - *The TXODS offers access to in-flight transaction information for all long-lived transactions*
 - *The TXODS offers access to transaction information for all completed transactions*
 - *Customer can access transaction information at any time (24x7)*
 - *The TXODS offers very high availability*
 - *The TXODS offers real time access to all transaction information*
 - *Millions of customers will review transaction information with expectations of immediate response*
 - *The TXODS offers very high performance*
- *A customer can use any channel to review financial transactions*
- Every channel interoperates with the the TXODS through the shared service interface
- *A financial transaction is available for review from any region or country in which CBA is present*
- The shared service interface of TXODS interoperates with business processes in support of the CBA Operating Models
 - *Business process and product instance implementations may differ from an Operating Model perspective*
 - *Customers will expect financial transaction reviews to be consistently available across the Operating Models*
 - *The TXODS offers a service interface that is shared across CBA operating model business domains*

Goals Modeling –aProfessional View

Sample snapshots

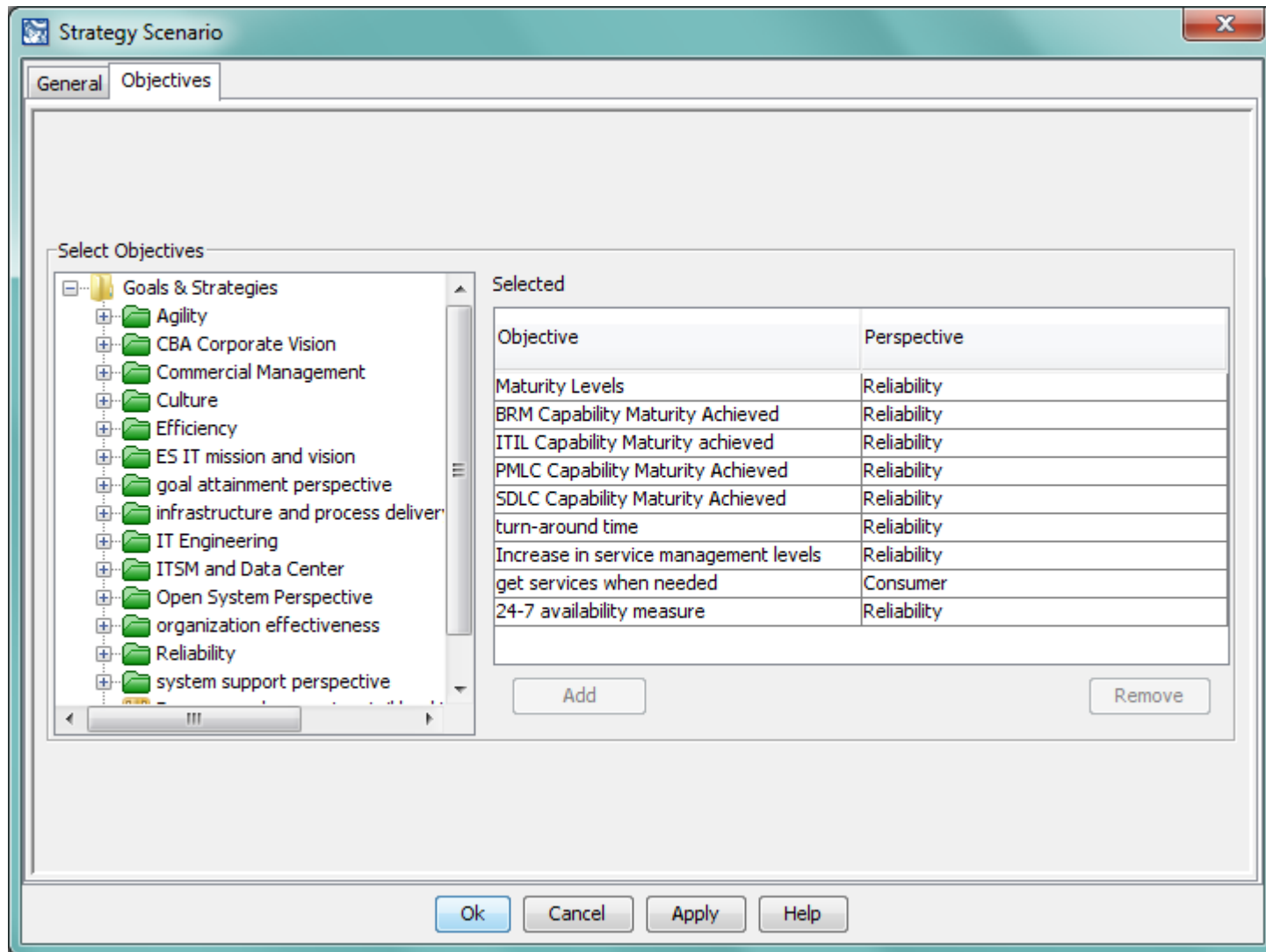
Organization Gap Analysis Map



Goals Modeling – a Professional View

Sample snapshots

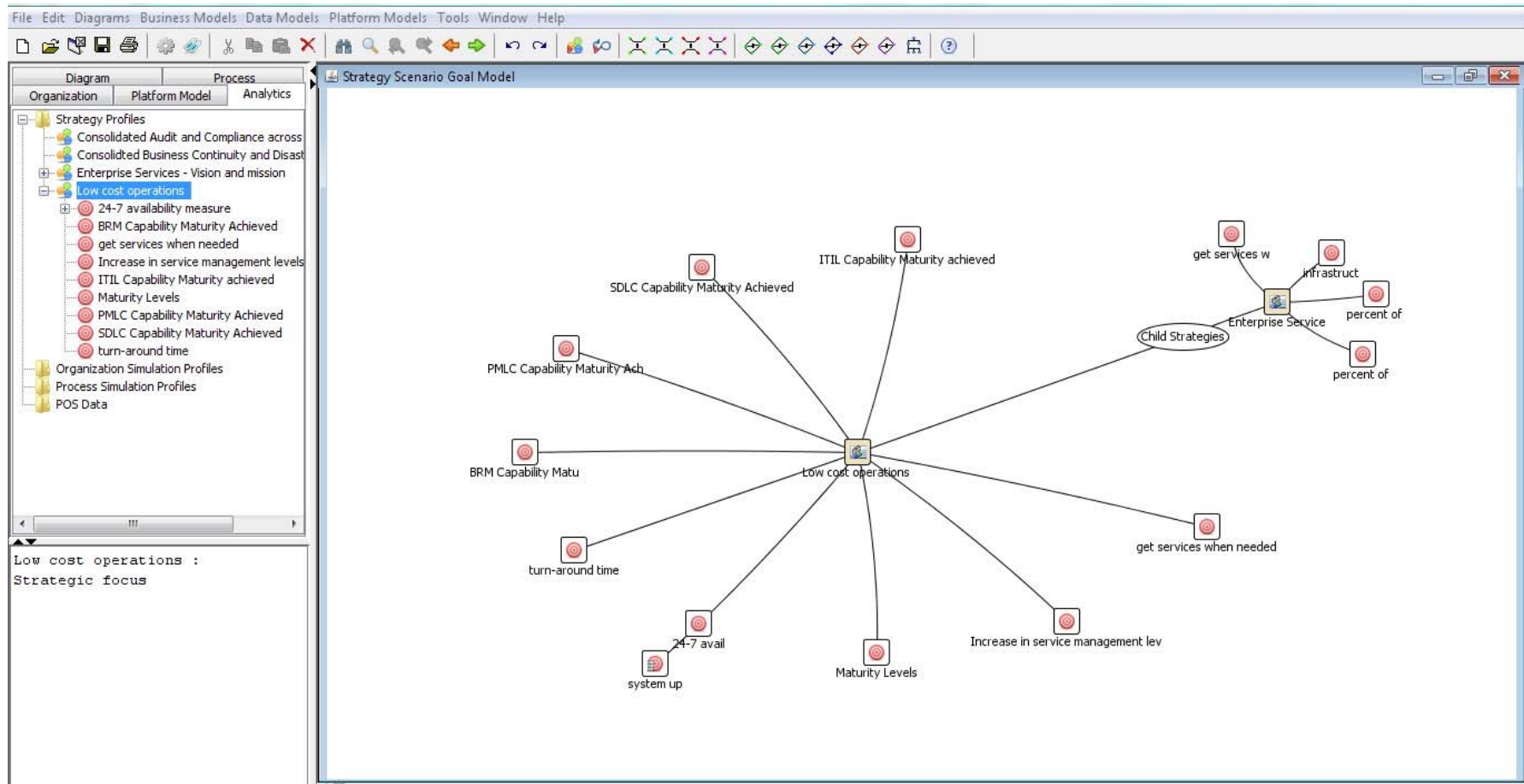
Strategic Theme – Balanced Scorecard Design



Goals Modeling – a Professional View

Sample snapshots

Strategic Theme Design – Balanced Scorecard Perspective



The Target

The CIO wanted to be able to say

- I'll never buy another data center again.
- I'll never buy another rack, server, storage or network device again.
- I'll never let my organization get locked into proprietary hardware again.
- I'll never tell my teams that it will be 'weeks' to get them new hardware.
- I'll never pay up-front for infrastructure that I may never use. I'll never implement internal solutions for common problems when a commodity cloud solution of equivalent capabilities is available.

The benefits from an agile IT operating model is maximised

- **IT Operations optimally utilises agile IT**
 - IT Operations is on demand and give consumers insights into unit costs and control of the levers to reduce overall costs
 - IT Operations is based on an everything-as-a-service model
 - IT Operations is secure and auditable
 - Non stop operations are provided for business critical applications and business services
 - Existing infrastructure and server portfolio are migrated to the standardised x86 “ssS” compute host platform
- **Platforms are standardised and complete**
 - Standardised platforms are provided in an optimal model of contestability
 - Platforms deliver services to customers via channels and mechanisms that customers demand and are able to evolve quickly to include new channels and mechanisms
 - Platforms include all required tools and methods to enable efficient development of software and attendant service delivery
- **Service delivery platforms support the deployment of applications and business services**
 - An optimal set of applications from the existing applications portfolio are deployed on platforms
 - Core banking is service-enabled and deployed on a platform
 - The Payments hub is operating on a platform providing common payment services shared by the CBA Group banks
 - Workplace-as-a-Service (WPaaS) is deployed for compromised devices
- **Agile development delivers business services and applications with high quality and reduced TTM**
 - Business Services are planned through a business architecture process maximising value in terms of applicability and reuse
 - All software development-to-deployment is done in an automated DEVOPSmodel
- **Information is a strategic asset and is optimally leveraged**
 - Personal data with customer privacy is a new asset class leveraged through new business services and applications
 - Big Data and Big Analytics are providing market and customer behavior insights not available through other mechanisms
- **Productivity is continually improving through triple loop learning**
 - Efficiency improvements are delivered through levers such as LEAN and application rationalisation (1st loop – short cycle)
 - ES Strategy Development drives effectiveness improvements by reviewing derived strategic assets and capabilities (2nd loop – medium cycle)
 - ES Strategy Development reviews the strategic assets (3rd loop – long cycle)

Key architectural learning

It's more about platforms than resources

- Platform
 - Business/problem domain aligned
 - Light-weight containers
 - Capabilities with APIs (including Open Source)
 - Applications (with service interfaces)
 - SDLC
 - Automated DEVOPS
 - For developers (no BPEL, BPMN, etc)
 - Development and delivery of resilient and secure apps
- PO-EA (Platform Oriented Enterprise Architecture)
 - No architecture frameworks
 - Reuse now focused on the business/problem domain
- The language aligns well with non-IT people's language
 - Payments platform
 - Core banking platform

The Transformation

-Niccolo Machiavelli 1532

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain to its success, than to take the lead in the introduction of a new order of things.

Some of the Challenges

Competence

- *Symptoms*

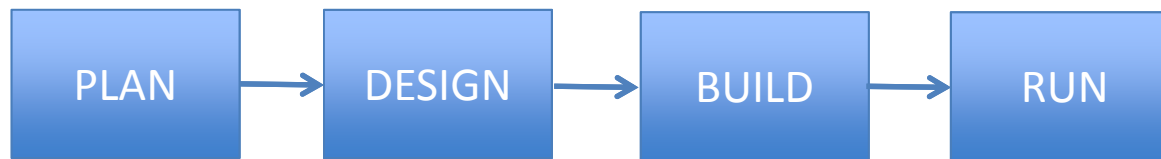
- What is it with Software people in the large enterprise?
 - Totally unafraid to take on any complex problem
 - So busy heads down that the rest of the universe passes them by
 - Not wanting to learn yet anxious to take huge risks
- Architects do not know how to architect
 - The commoditization of the architects
 - Powerpoint language only
 - Secondary effects are very costly

- *Applied Learnings*

- Ethnomethodology
 - If knowledge is knowing how to do something, then knowledge can not be acquired by the written or spoken word
[\(Ethnomethodology's Program by Harold Garfinkel, Anne Warfield Rawls and Anne Rawls \(Paperback - Jul 2002\)\)](#)
- The Shop Floor Phenomenon
 - Knowledge can only be acquired through doing the work on the “shop floor”

Organization and Control

- *Symptoms*
 - People use control to mask lack of competence
 - Bank staff take over vendor-led journey projects mid-stream
 - Partnerships with vendors are difficult since procurement wants to beat the sh*t out of them
 - Conflicting enterprise integrity goals
 - The left to right process leading to messes



- *Applied Learnings*
 - Design for Operations
 - The destination over the journey

People, Politics and Culture

- *Symptoms*

- Use of organizational hierarchy and communication control to “manage the message”
- Dictatorial style managers who have the answers
- Learning and unlearning is not rewarded
- Not knowing who is foe or friend

- *Applied Learnings*

- Mindsets: Fixed and Growth
- What our words say
- The Ideal Mental Model

[\(Choice Theory: A New Psychology of Personal Freedom by William Glasser \(Jan 6, 1999\)\)](#)

- When you create something the opposite is also created
- When you hit an obstacle, be like water and flow around it
- The harder you push, the more resistance you get
- You may have to declare break-down in order to get break-through

Mindsets

- **Fixed mindset**
 - Believing that your basic qualities are carved in stone
 - An urgency to prove yourself over and over
 - If it is limited, then you'd better prove you have a lot of it
 - Live in a world where some people are superior and some are inferior
- **Growth mindset**
 - Believing that your basic qualities can be cultivated through your own efforts
 - Belief that the true potential is unknown
 - Belief in human potential and development
- “I do not divide the world into the weak or strong, or the successes or failures...*I divide the world in the learners and nonlearners*” (Benjamin Barber, noted Sociologist)
- Right or Wrong vs. Helping to Learn
- The CEO disease: reigning from atop a pedestal and wanting to be seen as perfect (e.g. Lee Iacocca)
- Long term hero with stakeholders and employees (Lou Gerstner) vs. short term heroes on Wall Street
- “You have to apply yourself every day to becoming a little better. By applying yourself to the task of becoming a little better each and every day over a period of time, you will become a lot better.” (___?)
- The team was his product and they had to prove his ability every time out. They were not allowed to lose games, make mistakes or question him in any way, because that would reflect on his competence. (___?)

What our Words Say

- The precise words you use to communicate reveal more about you than you can imagine
 - **Function words** (pronouns, articles, prepositions, and other small stealthy words) reveal your personality, thinking style, emotional state and connections with others
 - e.g. I, is used at far higher rates by followers than leaders, truth tellers than liars
- Word use reflects psychological state rather than influences or causes it
 - e.g. The Five We's
 - The you-and-I we
 - The my-friends-and-not-you we
 - The we-as-you we
 - The we-as-I we
 - The every-like-minded-person-on-earth we
- People in higher ranks and power use less I-words and more We-words and You-words
 - John Kerry and George Bush presidential campaign in 2004
 - Nixon and Watergate

[The Secret Life of Pronouns: What Our Words Say About Us by James W. Pennebaker \(Aug 30, 2011\)](#)

- Writing or talking about real vs. false experiences
 - True stories are more complex than false stories
 - More words, bigger words, more numbers, more details
 - Fewer emotion and cognitive words
 - Fewer verbs
 - More self-references: I-words
 - Statements are more thoughtful using insight words, such as *realize, understand, think* and *like*
- Words that predict honesty and deception
 - I-word is the best single marker of a person being honest. It is self-attention and with increase in the use of I-words self attention increases pointing to greater honesty
 - High rate of use of auxiliary verbs (*to be, to have, and to do*) and discrepancy verbs (*should, could, ought, must* and *would*) tend to point to deception

In conclusion

- Competence
- Transparency
 - on facts, goals and assumptions
 - never question intents