
Enterprise Environment

— CMPU4023 - Enterprise
Application Development —

The Enterprise

- The term enterprise, as it is used in this module, means medium to large organisations, usually government or commercial, who rely on complex, interconnected software systems to drive their vast data processing requirements
- Typical data processing functions include such activities as financial management, resource planning, payroll, supply-chain management, logistics management, compliance management and so on
- The supporting software systems which help to carry out these functions comprise a heterogenous set of technologies from many sources, old and new

Conservative by Nature

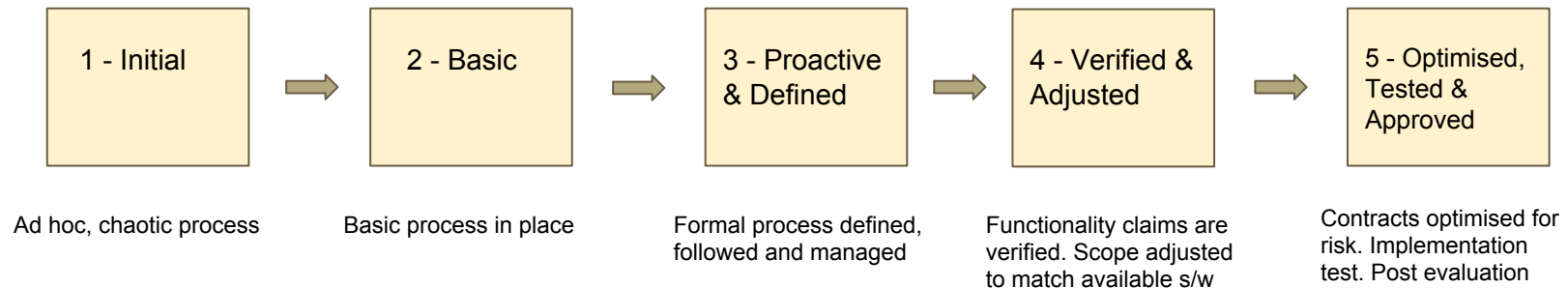
- Enterprise information systems are critical to the smooth functioning of a business so change represents a high risk to continued operation
- No matter how seemingly trivial, any change to software poses the threat that something unforeseen will have been missed
- This could result in an interruption to service with the consequential cost, business continuity and reputational damage
- As a result, project teams should proceed with great care in the specification, planning and execution of updates to systems
- Formal change management processes are commonplace with a complex chain of knowledge transfer activities and management signoff steps

Technology Adoption

- Software technologies get adopted in a variety of into the enterprise but generally the enterprise is slow to adopt new technologies until the industry, as a whole, has been seen to adopt them - IT or vertical
- Where solutions are insourced or outsourced, it is often the case that similar or competitor enterprises have already adopted the same solutions - introduces dependent technology needs
- In house development tends to use solutions supported by large stable vendors and which have existed for years or even decades
- Enterprises are often late majority or laggard adopters in the context of the *information technology adoption lifecycle*

Software Selection Maturity Scale (SSMS)

- Not all enterprises are created equally in terms of their ability to make data-driven decisions regarding technology strategy, investment and adoption
- The SSMS is a five-level scale which measures the maturity of a given enterprise for its technology evaluation and acquisition process
- Many enterprises, or parts thereof, perform low down in the scale



Typical Acquisition Process

- An enterprise would be expected to have carried out and documented:
 - A basic ROI estimate for the project
 - Detailed requirements and risks analysis
 - Research into available and viable software options
 - A request for proposal process with potential vendors
 - Evaluation of the appropriate responses and tenders
 - Verification of the vendor's claims
 - Ongoing project management
 - Development of legal contracts and licensing and support agreements

Legacy Systems

- Over time, perhaps decades, enterprises invest millions of dollars in information technology solutions using whatever technologies are considered to be appropriate at the time of commissioning
- The solutions themselves can take years to just build and integrate and then can expect, in many cases, to see decades of use
- Typically, as a technology ages, it becomes more expensive to maintain and delivers less and less value to the business
- In time, new solutions are developed side-by-side which may not be compatible with the legacy systems and enterprises often struggle with this inter-generational cost and inefficiency

Cloud Computing

- Increasingly, cloud-based outsourcing of enterprise solutions is commonplace
- The benefits to the enterprise is that it no longer necessarily needs to have in-house expertise in what it might consider as non-core activities or intellectual property
- There is also a potential cost saving from lower payroll costs and elastic computing efficiencies
- The downside can be the loss of organisation knowledge of how critical information systems functions work, particularly at the low-level technical detail

Geographical Dispersal

- Enterprises are often physically located across many different sites in the same or different countries
- The entities which make up an enterprise can have a highly heterogeneous and disintegrated software systems
- Perhaps they carry out very different functions or were formerly acquisitions of the parent company
- This environment can pose a challenge both to manage and to create solutions for
- Culture, politics and interpersonal relationships play a significant role in enterprises and the conduct of their business internally, including in software application development

Systems Integration

- One of the most common kinds of software projects carried out in the enterprise is the integration of different systems of different origins or technologies
- Information in different silos is a cost to the business as data cannot easily flow across functional boundaries
- This makes operational and strategic management harder and stifles innovation within organisations
- Integration projects are concerned with getting different systems talking to each other using bridging technologies
- Projects must carefully balance the benefits of integration against the costs and risks of doing so

Summary

- Enterprises are typically large, complex, dispersed organisations with large and diverse data processing needs
- Information systems solutions are a mixture insourced and outsourced with some in-house integration and bespoke projects
- Change control is a critical concern for business continuity so the degrees of freedom for technology selection and project execution are small
- Enterprises differ widely in their competence in software application development and IS/IT remains a significant cost of doing business
- However, IS/IT is critical to modern businesses in aggressive competitive markets so EAD is a major activity in most