The ABACUS Architectural Approach to Software, System and Enterprise Evolution

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The Need

• In managing complex environments some questions are so tough they rarely get answers …
  – Should I upgrade my system infrastructure? What’s it going to cost? What’s the benefit?
  – How do I cut 30% off my OpEx? Should I retire the legacy system or rationalise my head-count?
  – What’s the impact of the M&A we’re about to undertake?
  – What Disaster Recovery (DR) plan should I adopt? …

• Currently all these questions are approached with:
  – High-risk experiments
  – Questionable and subjective vendor and consultant advice
  – Procrastination
  – Resignation to living with the problem ("do nothing")
The nature of Enterprise Architecture

- Enterprise Architecture (EA) can be defined as:
  *The system of applications, infrastructure, and information that support the business functions of an organisation, as well as the processes and standards that dictate and guide their evolution*

- EA is a trinity of People, Process and Technology, all interrelated, and focussed about the Customer:

EA and Strategy

- EA Strategy can be defined as:
  *The practice of foreseeing the architectures most capable of satisfying the evolving business capabilities, and identifying and implementing procedures to ensure they are realised*

  Suggest
  Synthesise
  Analyse
  Accept
  Implement

- Enterprises need a methodology and toolset to develop, trial and justify strategies
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Architectural Models

Traditional

ABACUS

ABACUS: The 5 steps to Evolution

1. Audit
2. Populate
3. Analyse
4. Visualise
5. Optimise
1) Audit using an EA Maturity Model

- To assess the quality, quantity and completeness of information and processes

2) Populate a central repository with good ol’ 2D
3) Use metrics to analyse the architecture

- ATAM, IEEE 1061 and ISO 9126 for guidance
- There’s > 76 qualities/metrics to consider!
- 3 “types”; Equational, Structural, Simulation

4) Visualise the results with some amazing 7D art

- 3D Coloured, Sized and Shaped hierarchical view.
- Colour might mean high TCO, Utilisation or Response Time, Size might mean FTEs, SLOC or Bandwidth.
- Shapes might be Servers at Locations, Teams within Departments, Application and Databases.
- Lines might be Physical Links, Workflows, Queries, Batch Jobs, or Logical Data Flows.
5) Repeat steps 2, 3 & 4 to optimise to a desired “to-be” from the “as-is”

- Architecture was outside capability ($R_{max}$ was too high)
- Capability Space (envelope)
- Architectural capabilities per version (as-is/to-be etc according to certain metrics/KPIs)

Conclusion

- Provides revolutionary views of the enterprise
  - To help IT and business units communicate about complex socio-technical issues in a single united model
  - Customisable depending on role, function and purpose
- Allows in-house architectural analysis and comparison
  - By extracting a broad range of Architectural Metrics
  - To design the best implementation for Strategic Change
  - That is Low Cost and Quantitative
- Controls architectural strategy top-down
  - Synthesise and evaluate strategies according to your own KPIs
Thank you

For more information go to;
http://abe.eng.uts.edu.au
http://www.avolution.com.au

And get your free 30 day trial of the ABACUS toolset

Questions?