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What is (Enterprise) Architecture?

ABSTRACT
• Enterprise and System Architectures are critical for successful and secure digital transformation and cyber-resilience.
• Even if the information systems use the latest technology, if you are hook into a control system with a 1980’s operating system; huge vulnerability. Architecture will allow one to take informed decisions that provide strategic, tactical and operational fit and value in a risk managed environment.

BIO – Robert Weisman, PhD, PEng, PMP, CD
• Robert is CEO of Build The Vision Inc, Engineer in Residence and Professor at the University of Ottawa (Canada)
  • 30 years leadership experience in government (mainly in defence),
  • 10 years in the private sector as an executive management consultant at CGI working globally
  • 5 years at University of Ottawa creating and teaching (in English and French) new courses in digital transformation and enterprise architecture
• Bob is a civil and military engineer, expert in plans and operations, an AI focused computer scientist and recently graduated in 2019 with a PhD in e-Business (Digital Transformation and Innovation).
• He is heavily involved in the creation of open standards bridging business and technology using architecture and business design in The Open Group and several professional associations, notably ISACA and the Association of Enterprise Architects. Robert is also chair of the 2nd Annual Conference on Digital Transformation in Government 15-17 June 2021. Security and resiliency, cyber and other, are key aspects of digital transformation and EA.
What is (Enterprise) Architecture?

• Explicit knowledge of the state of all assets available to the enterprise, their relationships and their evolution over time
  • Enterprise Architecture focus on portfolios or system of systems – Urban Plan
  • System Architecture focus on individual systems / projects – Building Plan

• Assets are all manner of things belonging to an enterprise
  • Intellectual Property, Data, Personnel, Equipment, Policies, business drivers and so on
  • Much more than IT or ICT
  • Capability based approaches are more holistic

• “Organizational logic of an enterprise” (MIT Sloan CISR 2006 EA as Strategy)

• Security is a key architecture domain in all architectures
  • Includes business continuity management
What is (Enterprise) Architecture?

Architecture shows how all of the assets fit together and evolve over time.

Key governance and management enabler.

Ideally integrates capital and maintenance spend.

Architecture is a key enabler of security resiliency, not just cyber-security.
A Common Reference Point for Decision-Makers (from US DOD Arch Framework)
Security Here?
A Clear(er) Concept of What to Secure?
(Ross, Robertson and Weill “EA as Strategy” MIT Sloan 2006)
Challenges

- IoT hooking up control systems with old software
- Cloud where is your data?
- Are there back-doors into your cloud services?
- Agile can be dangerous, needs to be properly employed
- **A high percentage of enterprises are compromised and leaking information with potential disruption**
- Ultimately you cannot protect or fix what you cannot see!!!
- Architecture provides insight and roadmap
Impact of Cloud and Culture

Traditional Computing Environment

- Business Applications
- Infrastructure Applications
- Platform

Emphasis On Platform and Infrastructure

Knowledge Enterprise Environment

- Decision Support
- Analytics
- Uncertainty
- “Messiness”

Security Related Competencies

- Skillsets are lacking
- High failure rates (e.g., software 60%, government ICT up to 94%)
- Up to 90% shortfall in trained security practitioners
- Gender and cultural imbalance
Importance of Professional Associations

- Collective wisdom
- Mentoring
- Best practices – Professional Seminars
- Networking
Security – More than Cyber