



DIGITAL
TRANSFORMATION
WITH
ENTERPRISE
ARCHITECTURE

Dr. Robert Weisman

June 8, 2022

Given to:

Canadian Association of Management Consultant

Given By:

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Biography - Robert Weisman, PhD, PEng, PMP, CD



- **Dr. Robert Weisman** has had 40 years experience in Portfolio Management, Enterprise Architecture and Plans & Operations at the Strategic, Tactical and Operational level.
- He completed undergraduate and then graduate studies specializing in business transformation and knowledge-based decision support. His PhD is in e-Business (Digital Transformation and Innovation) in 2020.
- He has worked in the field as a civil engineer then plans and operations, R&D, graduate studies in Comp Sci (AI), academia (assistant professor) and then as a program manager for integrated national and international decision support systems. Since 2004 he has been an active volunteer with The Open Group and was Vice-Chair of the Architecture Forum, and now is working on future versions of TOGAF.
- Robert has been extensively involved in major Business Transformation efforts in defence and overall government starting in 1985 when assigned as a Business Requirements Manager in an innovation environment for a \$3B business renewal program. Since then he has conducted Program Management using EA in the defence, health, finance, immigration, public works, transportation and public safety domains in both the public and private sector. His speciality has been enhanced decision support, knowledge sharing environments as well as business service rationalization and consolidation.
- One of his major career challenges was his role in the stand-up, creation and evolution of the Canadian Defence Information Services Organization (DISO). He served in Strategic Direction (an integration of Plans, Program Management and Enterprise Architecture) for five years helping to shape and focus the new organization. DISO integrated 15 CIO and numerous communications organizations into one. Afterwards he joined CGI as an Executive Management Consultant for ten (10) years and started and led the global EA Practice.
- Currently he is CEO of Build The Vision Inc. where he consults, mentors and teaches EA, knowledge management and strategic planning in both English and French. He is also Engineer in Residence and part-time professor at the University of Ottawa as well as President of ISACA Ottawa Valley and AEA – Ottawa-Gatineau Chapters.



Digital (Transformation) versus Digitization

- “Digitization” is changing from manual and analog to digital
- “Digitilization” is the mechanics of narrow, process-centric applications of technology to streamline operations and cut costs,
- “Digital or Digital Transformation” focus on creation of a vision based on, “customer-centric value proposition”
 - E.g. Philips, “improving lives through health care innovation” (from Ross 2017).



- A useful definition
 - “The explicit knowledge of the assets available to an enterprise, their value, their relationships with one another and their evolution over time.”
- Are data, information and knowledge assets ?
 - ***YES – Most valuable asset globally !!!!***



EA in the US Government Covers Pretty Much all Bases

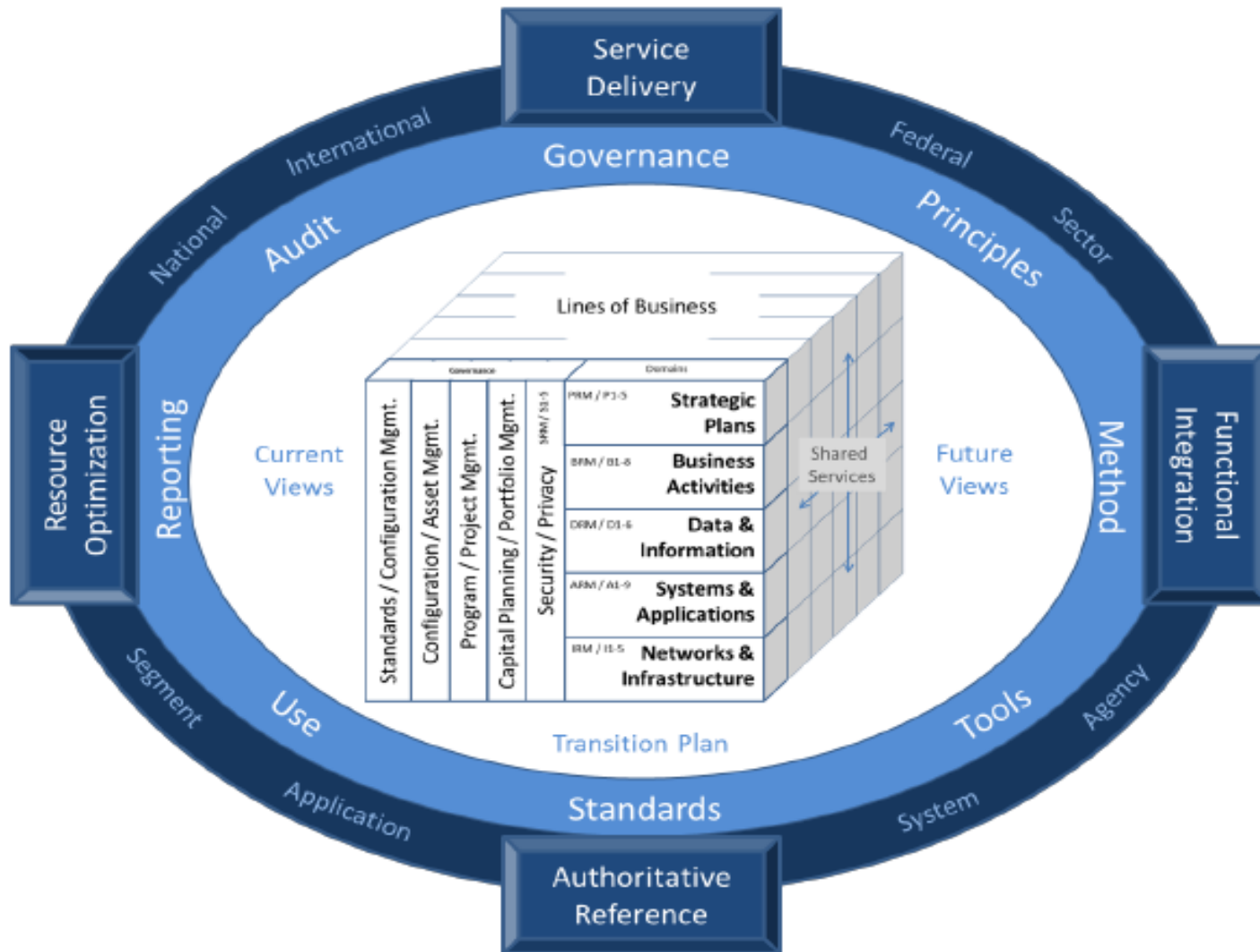
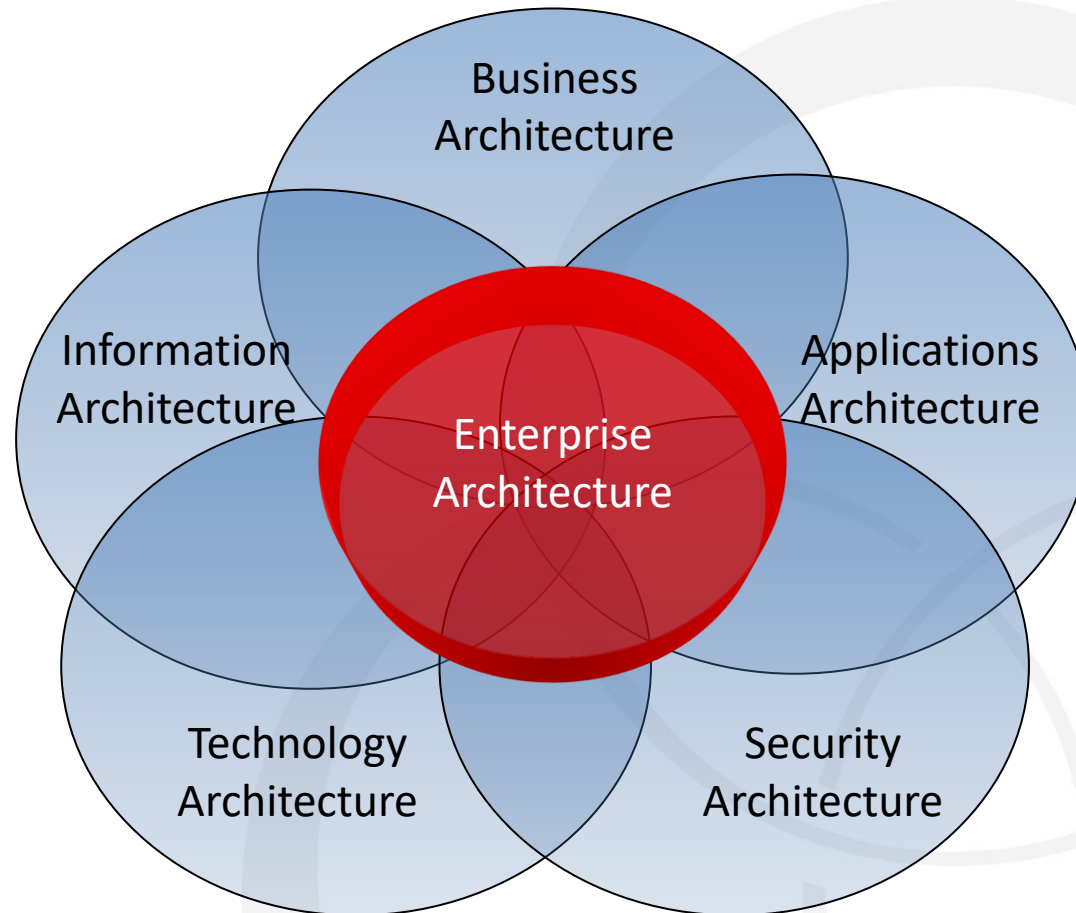


Figure 1. The Common Approach to Federal EA

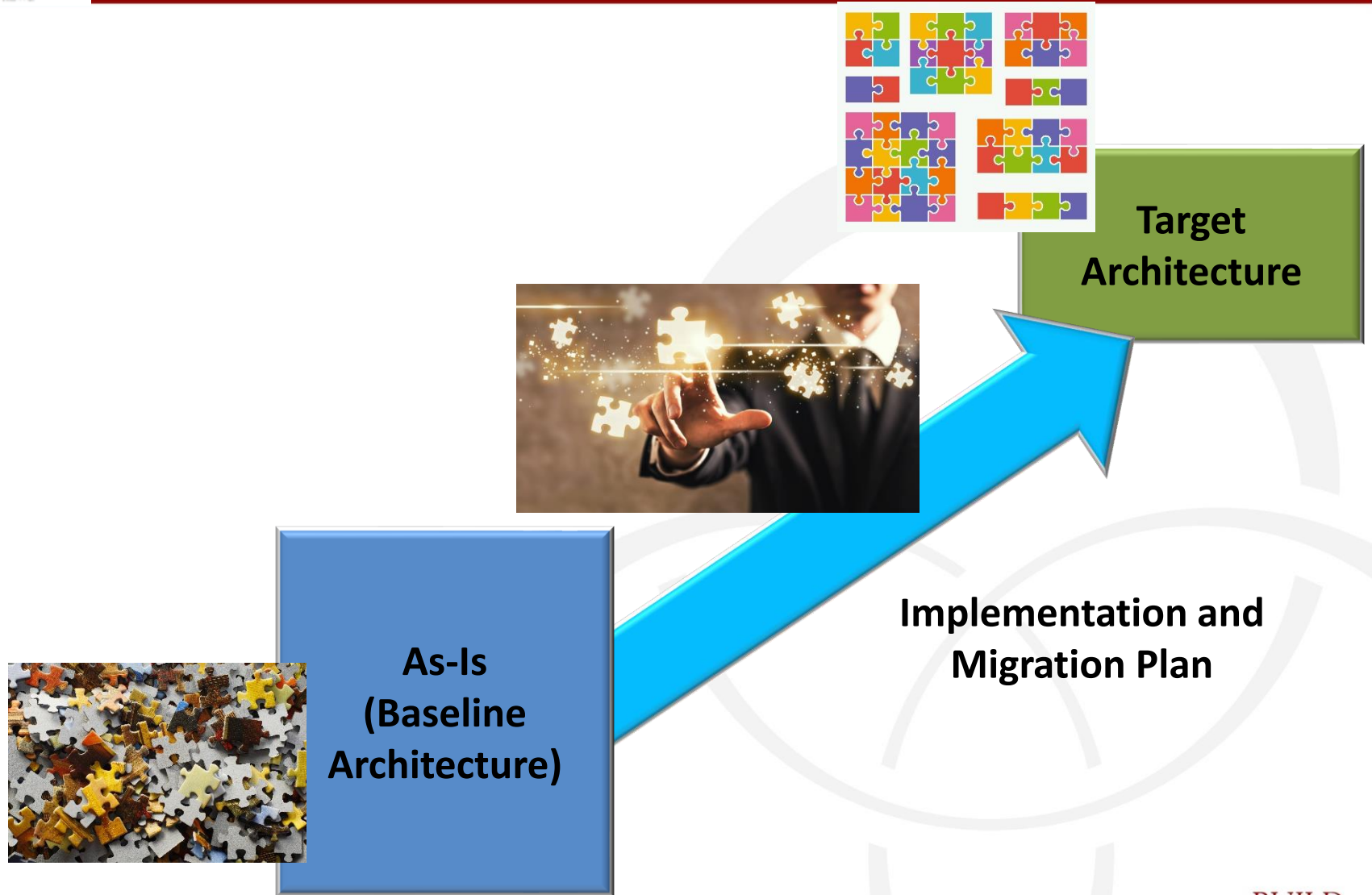


A Way of Looking at EA



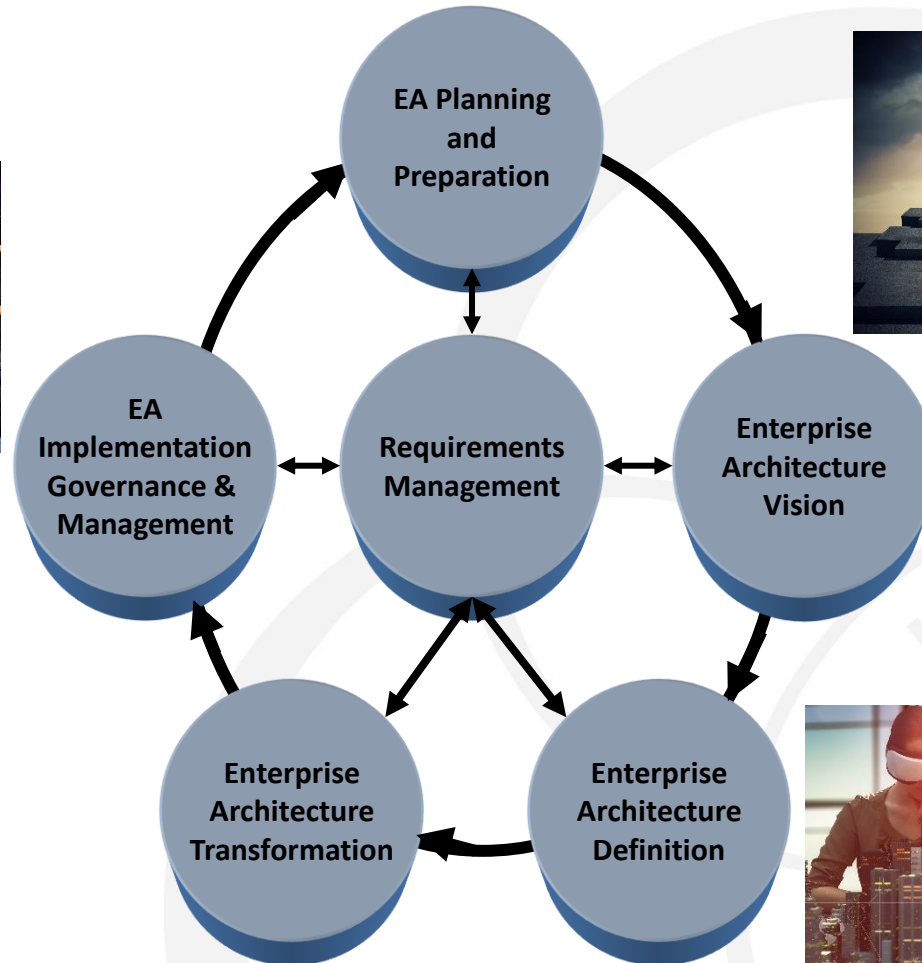


The Three Components of EA (Also of Strategic Management Engineering Management BOK)





The EA Cycle





Capability Concept

Capability

Capability Increment

People Dimension

Individual Training
Collective training
Professional Development

Process Dimension

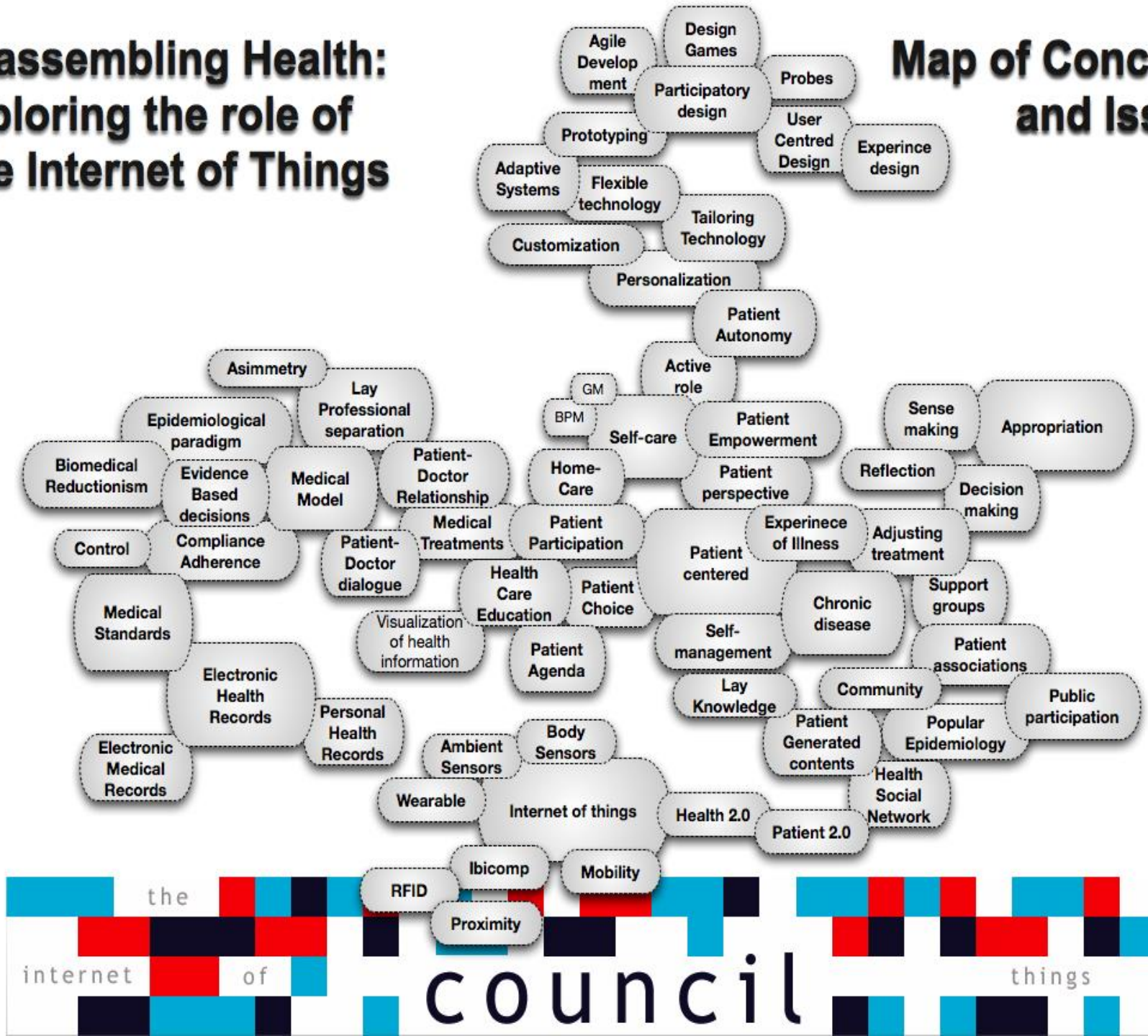
Concepts
Business Processes
Information Mgt

Materiel
Dimension

Infrastructure
Information Technology
Equipment

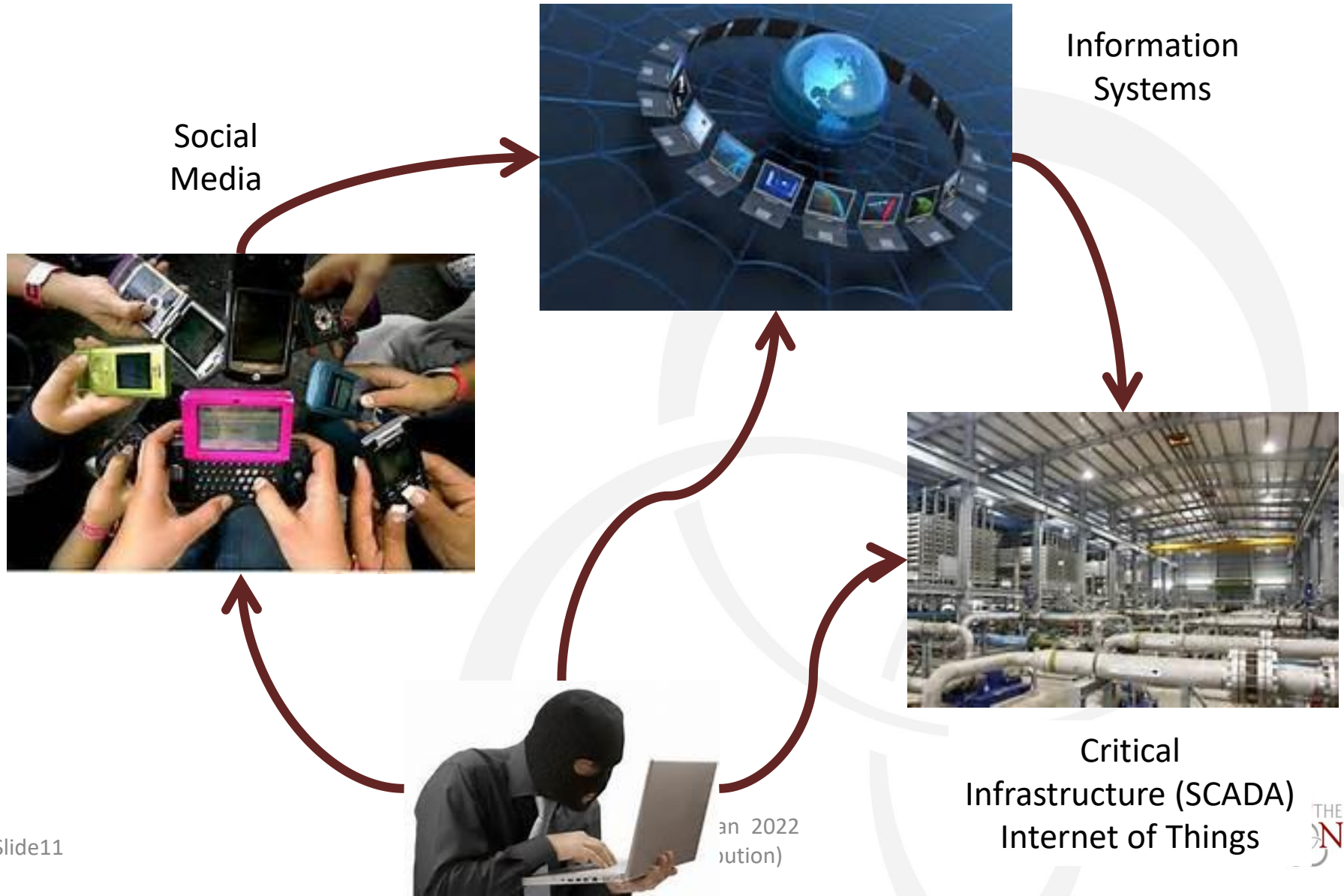
Reassembling Health: exploring the role of The Internet of Things

Map of Concepts and Issues





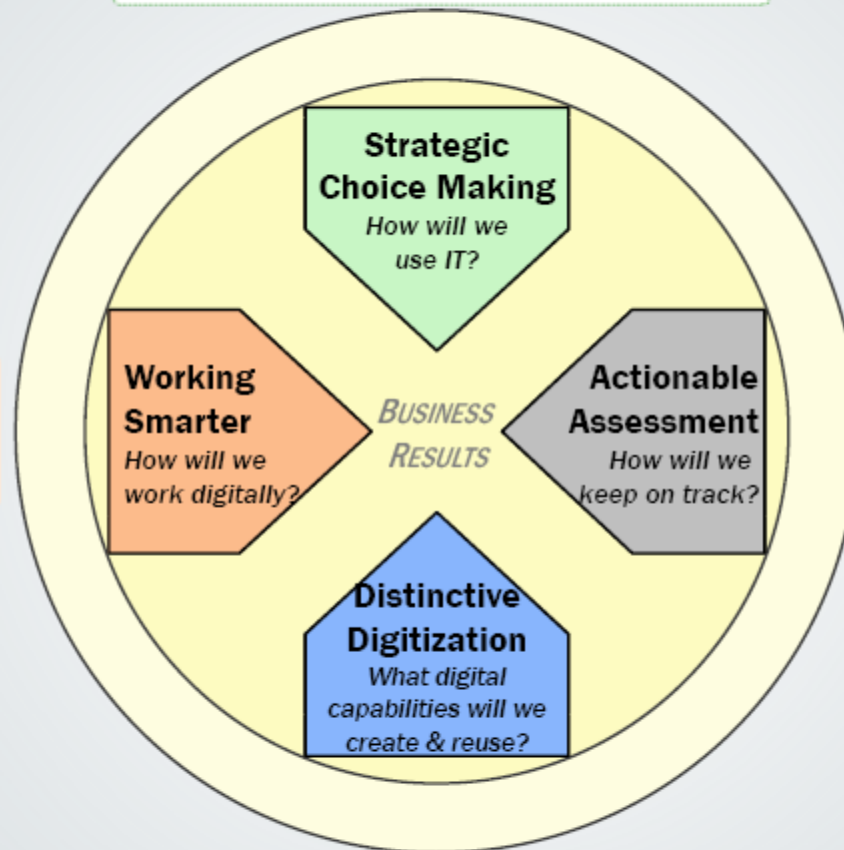
The New Big Data Landscape



7-Eleven Japan: Information broker

Integrated supply chain including franchisees, suppliers, and partners; with autonomous but replicated store operations

Empowered decision making using common processes, e.g., store clerk hypotheses



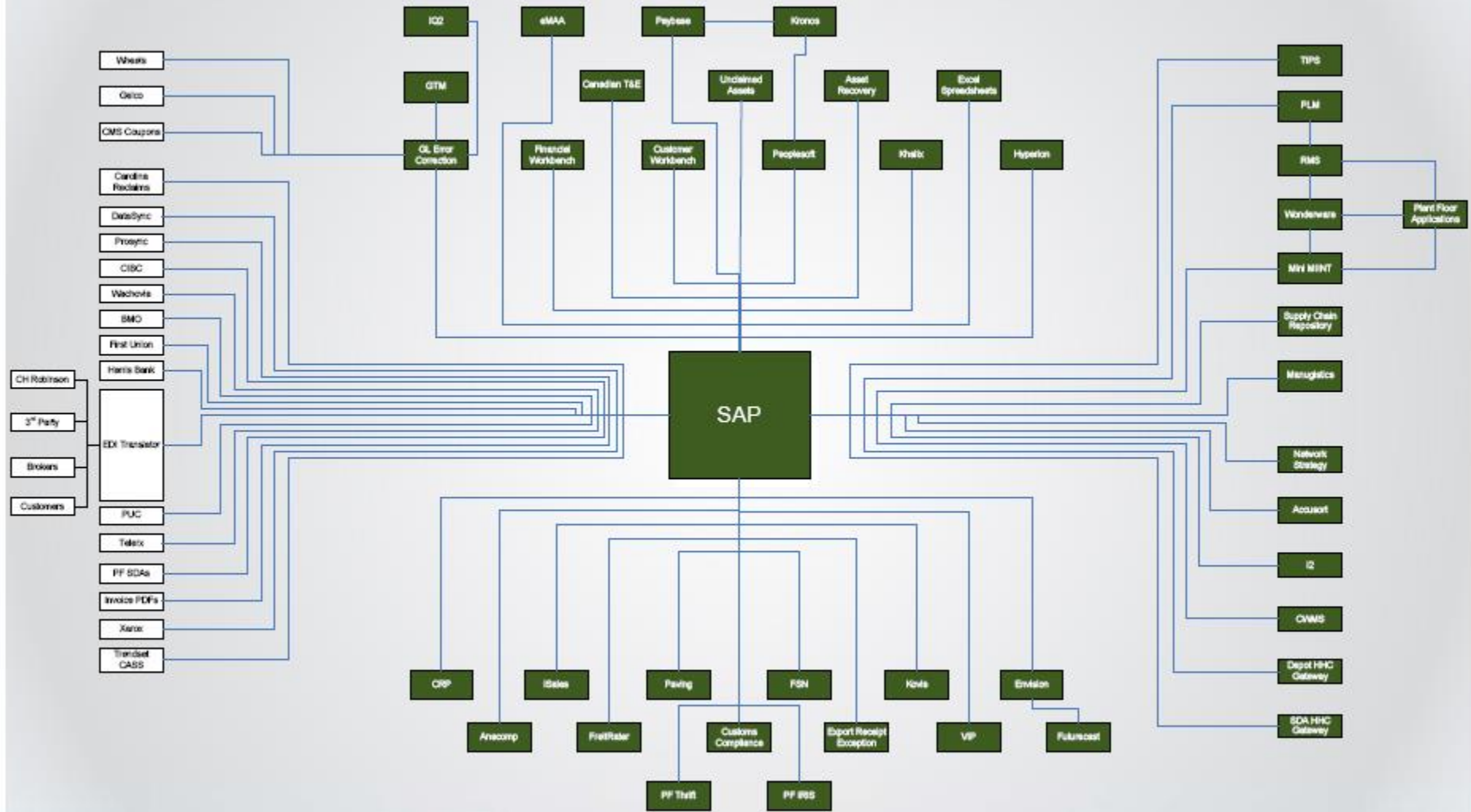
Focus on inventory turns

“Total information system” platform of 70,000 nodes to integrate demand and supply management

Campbell's needed to convert its legacy IT and business process environment...



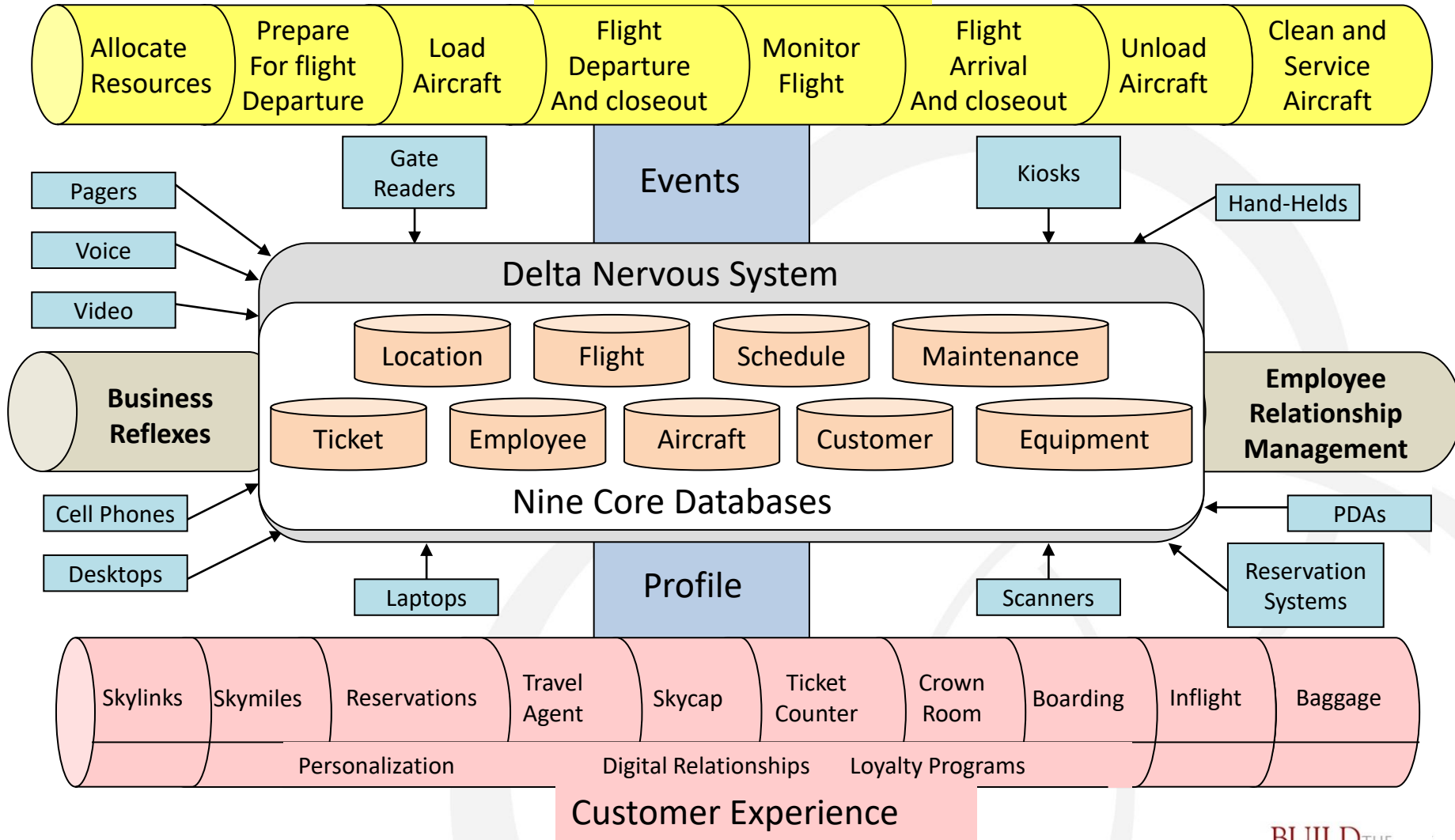
... to a digitized process platform





Delta Air Lines Core Diagram

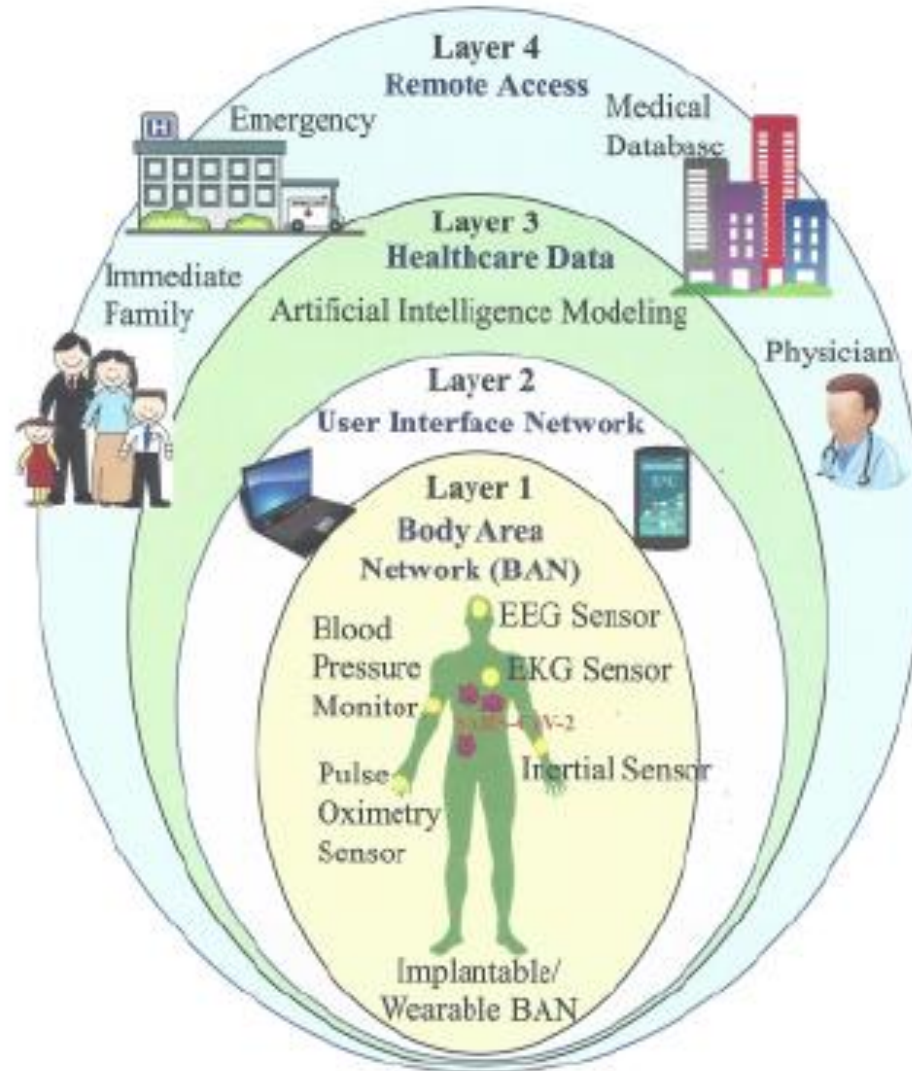
Operational Pipeline





Healthcare Cyber-Physical System (H-CPS)

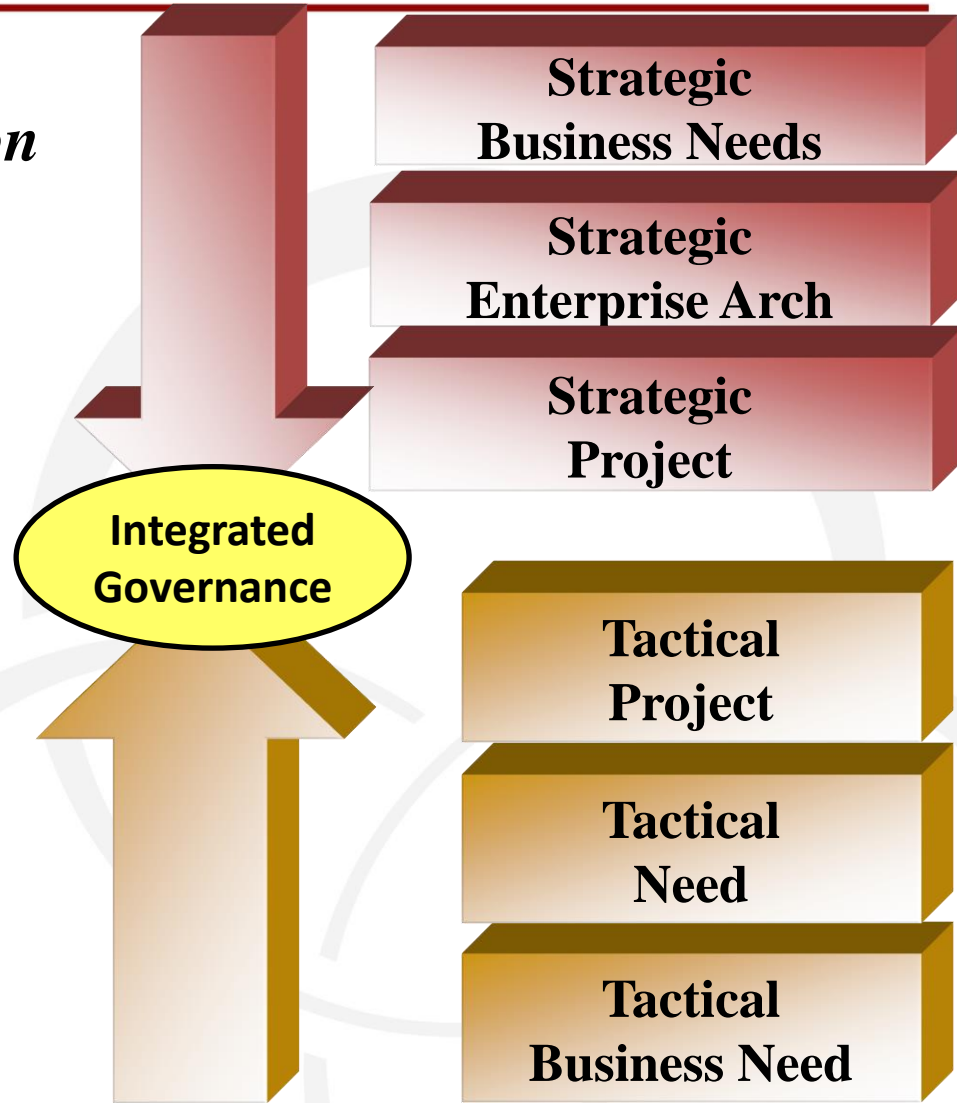
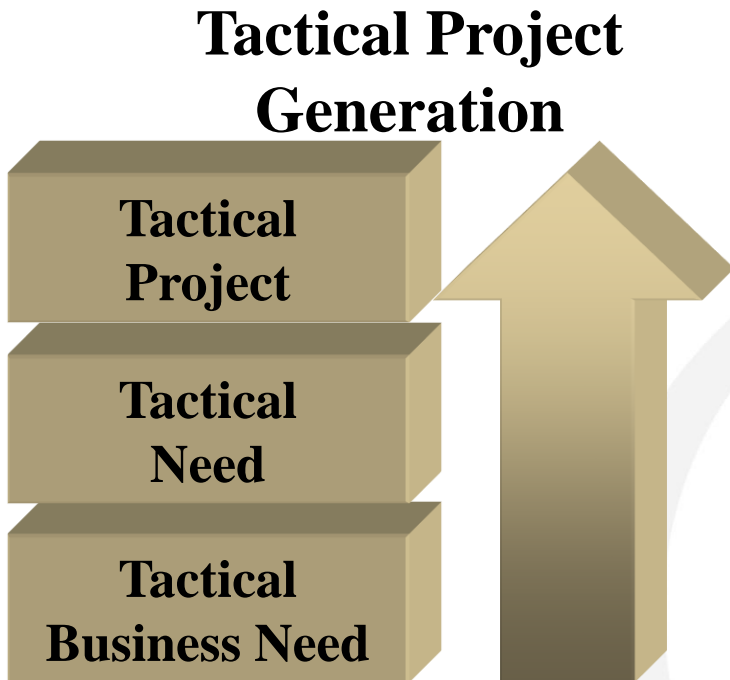
(IEEE Consumer Electronics Magazine Sep/Oct 2020)





Architecture Enables Strategic Project Generation Leveraging Capital and O&M Spend

*EA enables proactive
Strategic Project Generation*

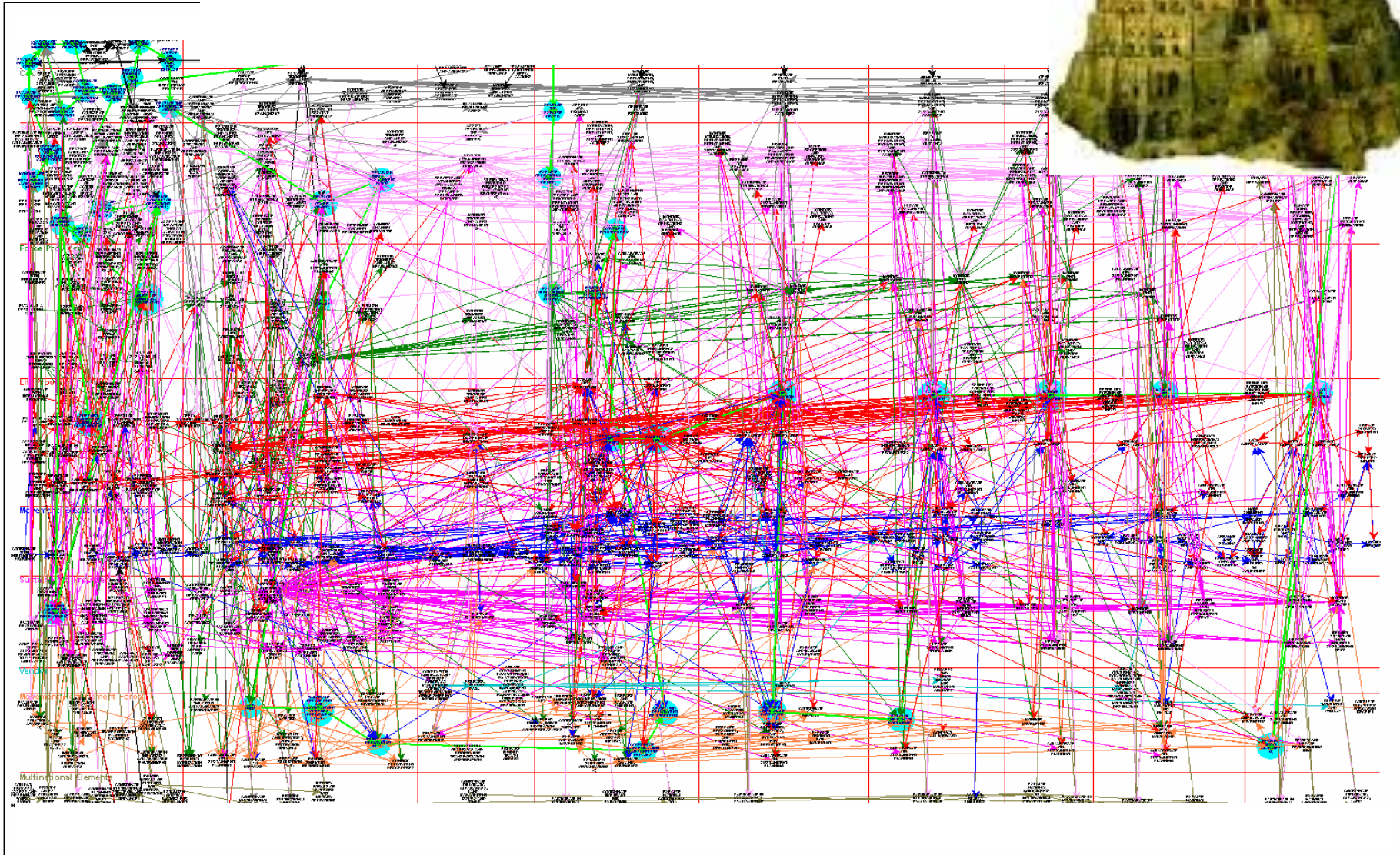




- Enterprise digital transformation
 - (Forrester 2019) – 50% failure
 - IEEE EMR Vol 49 N. 3 (2021 P.22) – 90% failure
- IT Projects in Government – 94% failure
 - “The Fourth Revolution: The Global Race to Reinvent the State” Micklethwait and Wooldridge 2014) Penguin (Page 20)
- Software development have a 60% failure rate
(IEEE – Engineering Management Review, Guillaume-Joseph et al 2015b)
- Costs the global economy trillions of dollars.



The Daunting Legacy As-Is (The EA Illustrates Complexity)

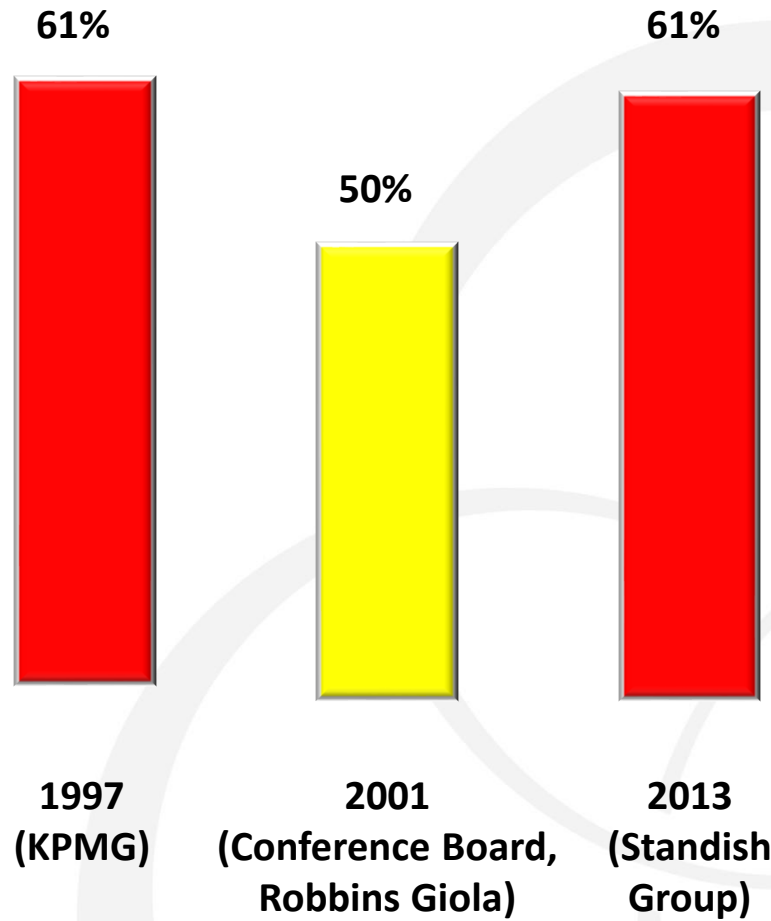




Statistics of Software Project Outcomes

(Adapted from Joseph and Wasek "Improving Software Outcomes Through Predictive Analytics" 2015 IEEE Eng Mgt Review Sep 2015)

Percentage Failed Projects





Failure Factors (Red are Management Factors)

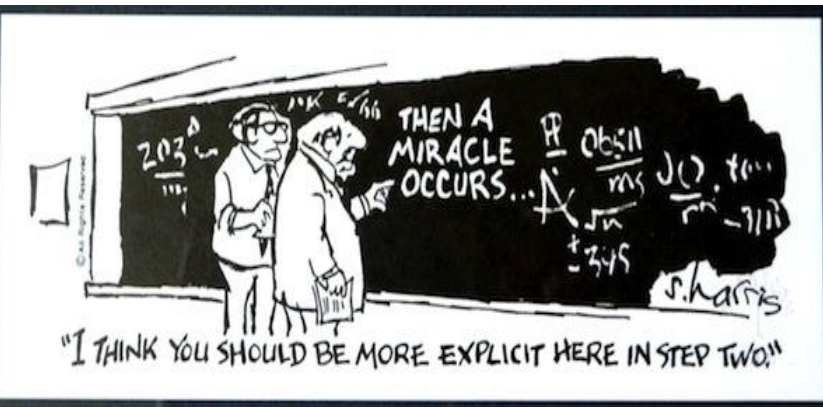
1. Unrealistic Project Goals and Expectations
2. Changing or Unclear Requirements
3. Insufficient Technical Knowledge
4. Problematic Technology
5. Lack of Executive Support
6. Insufficient User Commitment
7. Project Cost Overruns
8. Project Schedule Delays
9. Insufficient Project Management and Control



Unrealistic Project Goals and Expectations

- EA Contribution

- Unambiguous Vision and Architecture Leading to Well Formed Project Charters





Changing or Unclear Requirements

- EA Contribution
 - Clear Requirements





Insufficient Technical Knowledge

- EA Contribution
 - Identification of Personnel Competencies





- EA Contribution
 - Assessment of Emerging Technologies, Prototyping and Sandboxes





Factor 5 Lack of Executive Support

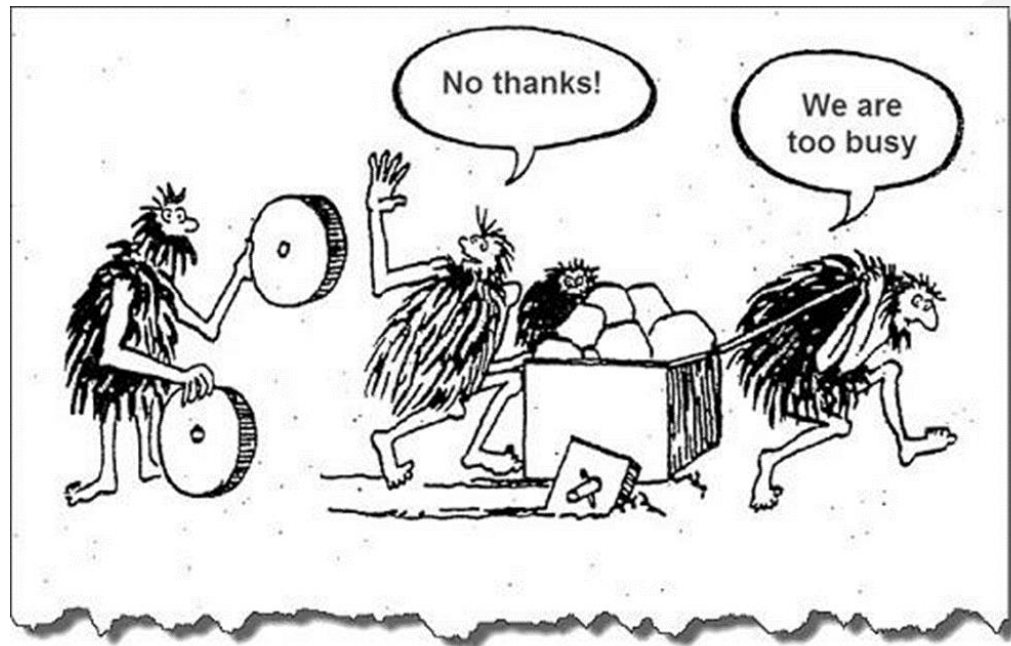
- EA Contribution
 - Executive Sponsorship and Stakeholder Management





Factor 6 Insufficient User Commitment

- EA Contribution
 - Identification of Business Transformation Issues

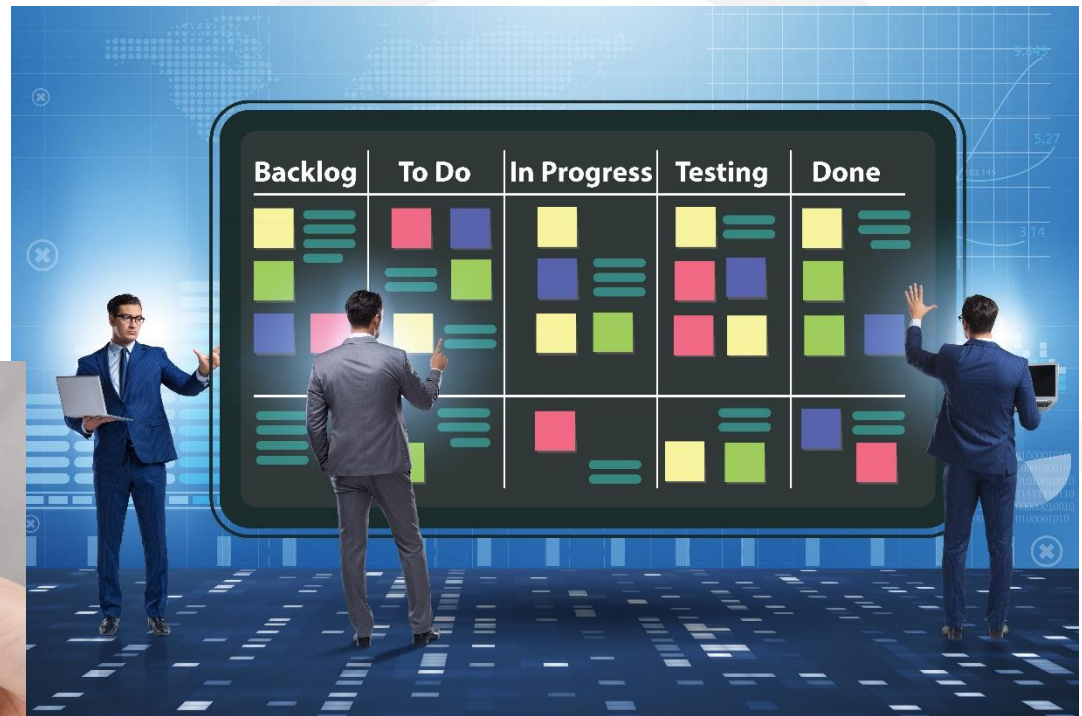




- EA Contribution
 - Well-Defined Work-Breakdown Structures and Portfolio/Program/Project Charters
 - Basis for sound estimation



- EA Contribution
 - Explicit Identification of Dependencies





Insufficient Project Management and Control

- EA Contribution
 - Rationalization of Projects
 - Fewer, focused and delivery/outcome oriented





Failure Factors (Red are Management Factors)

1. Unrealistic Project Goals and Expectations
2. Changing or Unclear Requirements
3. Insufficient Technical Knowledge
4. Problematic Technology
5. Lack of Executive Support
6. Insufficient User Commitment
7. Project Cost Overruns
8. Project Schedule Delays
9. Insufficient Project Management and Control

EA Contributions to Successful Digital Transformation

1. Unambiguous Vision and Architecture Leading to Well Formed Project Charters
2. Clear Requirements
3. Identification of Personnel Competencies
4. Assessment of Emerging Technologies & Prototyping and Sand-boxing
5. Executive Sponsorship & Stakeholder Management
6. Identification of Business Transformation Issues
7. Well Defined Charters facilitating estimation
8. Explicit identification of dependencies
9. Rationalization of Projects – Fewer , focused and delivery





Concluding Material



Digital Transformation Tool-Kit

EA is a Key Enabler



**Breakthrough
Strategy**

=



**Describe the
Transformation**

+

**Measure the
Transformation**

+

**Manage the
Transformation**

- **Strategy Maps**
- **Enterprise Architecture**

- **Performance Management Framework**

- **Governance**
- **Capability Management**
- **Service Management**



EA as Part of the Business

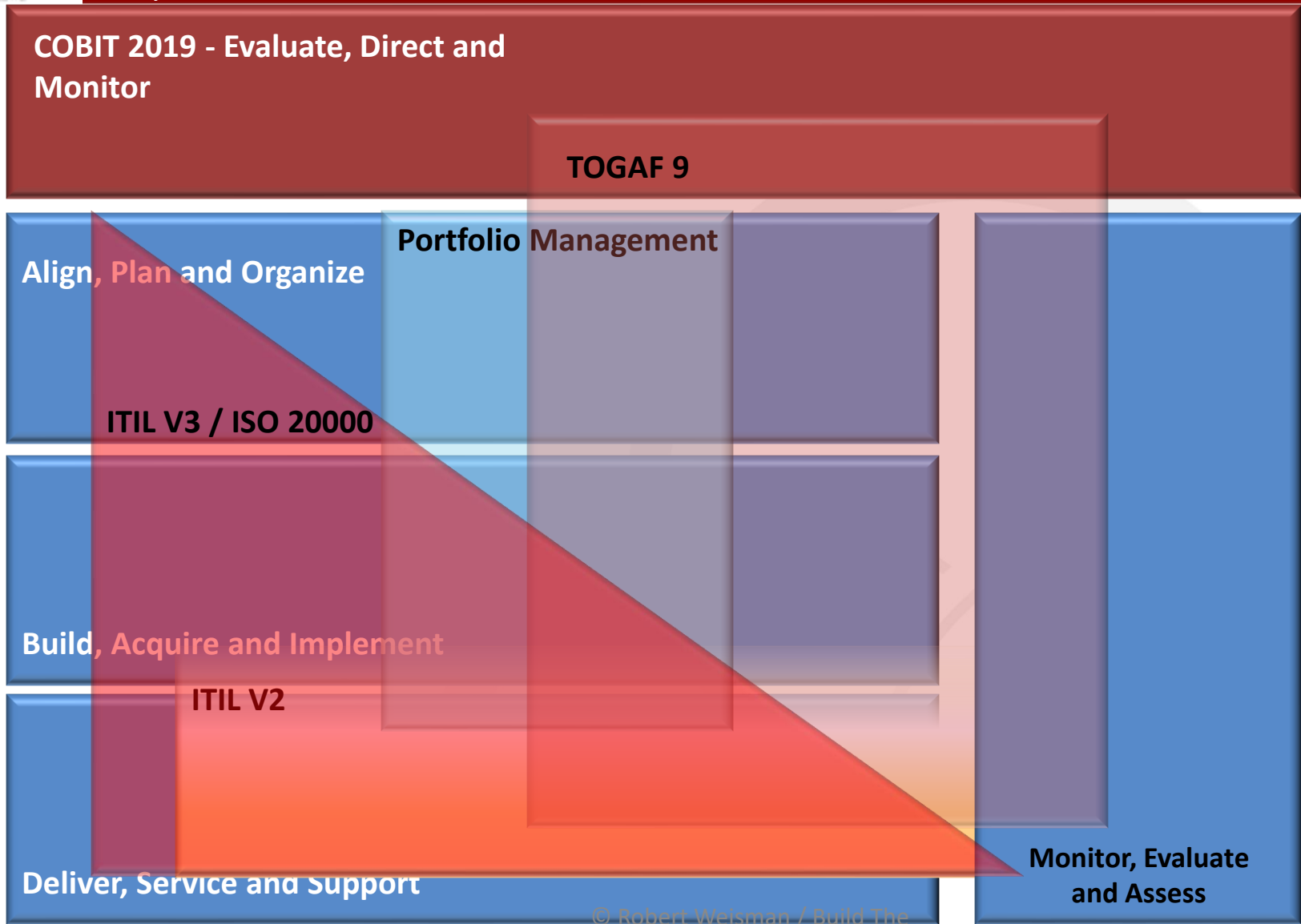
(Australian Government Architecture V2.0)



Separate EA
function but as
part of the
business



The Challenge of Digital Transformation Frameworks – They Compete, not Fit



DIGITAL TRANSFORMATION IN GOVERNMENT CONFERENCE

14 – 16 June 2022

Workshop – 17 June 2022



Conference Dates: 14-16 June 2022 – VIRTUAL – All sessions recorded for registrants to watch later.

Speakers – 50+ Executives, Managers, Practitioners and Academia giving Best Practices and Case Studies

CPEs – Provided for both live and recorded presentations

Registration and Latest Conference Details: Please go to www.digitaltransform.ca/2022/

Open Source Journal Workshop: - 17 June 2022 (VIRTUAL) For details <https://www.eventbrite.ca/e/workshop-open-source-journal-for-digital-transformation-in-government-tickets-320909548097>

Sponsorship and Partnership Opportunities: Please contact conferences@isaca-ottawa.ca



Questions ?



Presented in:

Ottawa, 8th of June 2022 To the CMC (Virtual)

Presented by:

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