

Realising Value through IT Governance: Issues and Solutions

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OUTLINE

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2. Challenges with benefits realisation
3. Existing work on benefits realisation
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 - c. Collaboration, engagement, and best practice
 - d. Validation
6. Conclusion

1. Introduction -FPR

Release of “First Principles Review of Defence – Creating One Defence” by the Minister of Defence on 1 April 2015 (Peever, 1 April 2015):

“transformational change to an organisation which has drifted from contemporary best practice ...and that the structure, governance arrangements, accountabilities, processes and systems of Defence ...be designed... to operate *as a whole*”. (implying...integration)

According to FPR, Defence has over 2500 information and communication management applications including 300 financial applications. (indicates issues with IT governance)

Leading to practical issues related to current IT governance in Defence

- Staff unable to access integrated data due to multiple disconnected systems,
- Proliferation of manual based systems,
- Lack of semantic integration, and
- Very little scope for obtaining a snapshot of data from multiple systems

Essential role of IT in integration of various parts of any diverse organisation and the importance of IT Governance in enabling this. [Henderson and Venkatraman (1999); Kohli and Grover (2008)]

1. Introduction – EIM 2015-2025 – Approach to Benefits

Aligned with the FPR recommendations, Defence has initiated the digital transformation process through Enterprise Information Management (EIM) Strategy 2015-2025:

- Driven by benefits
- Led by prioritised business needs,
- Framework for Benefits Outcomes & Capabilities,
- Builds on foundation of governance

Expected benefits:

- Organisational level: retire majority of the 2500 silo-ed systems
- Operational level: access single source of truth

Literature gap and proposal:

- Lack of practical approaches to benefits realisation in the public sector and that which includes internal/external innovation and the latest theories
- We propose a practical framework to address the gaps and include these theories

1. Introduction – EIM 2015-2025 – Approach to Benefits

The EIM Strategy targets the following *five specific benefits*:

1. Effectiveness
2. Responsiveness
3. Efficiency
4. Compliance
5. Interoperability

The EIM initiatives to deliver are :

1. Business-led
2. Trusted & protected
3. Standardized, integrated and interoperable,
4. Intelligent, agile and innovative
5. Strategically manage information

2. Challenges with Benefits Realization

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Initiatives for addressing challenges associated with benefits realization are:

1. Establish a trusted single source
2. Deliver common battlespace awareness
3. Measure performance with quality information
4. Educate, train and resource staff
5. Improve performance of key Information Management (IM) solutions such as records management, search and collaboration
6. Standardise business and information processes
7. Establish clear accountabilities
8. Manage information as an Asset

3. Existing Work - IT Enabled Benefits Realisation

Benefits are generally realized after the successful implementation of the IT project. The benefits can be grouped as

- problem-based solutions - which help achieve business objectives and prevent performance deterioration,
- innovation-based solutions - enables a competitive advantage

Challenging issues:

- understanding how to realise value through IT projects remains one of the challenging issues facing the information systems field, and
- IT is viewed as failing to deliver “value for money”.

[Peppard, J., J. Ward, and E. Daniel, 2007]; [Mohan, K., F. Ahlemann, and J. Braun, 2014]

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3. Existing Work – Challenges with IT Enabled Benefits

- **63% of projects failed or were challenged and 37% of projects were successful.**
- **20% of features are used often and 50% of features are hardly ever or never used.**
- 42% of the features and functions in the end product are used in large companies.
- 65% of the features and functions in the end product are used in medium companies.
-
- 74% of the features and functions in the end product are used in small companies.
- **The average cost overrun is 178% for large companies, 182% for medium companies, and 214% for small companies.**

Chaos reports 2012 and 2014 (Standish-Group, 2012)

3. Existing Work – Challenges with IT-ERP - US DoD

1. Rand Corporation Report (2013) Air Force Project – Improving ERP [ARONIN et al, 2011]

- DoD - IG report assessed six of the ERP systems:
 - Schedule delays of 1.5 to 12.5 years
 - **Cost increases totalling \$8 billion** (110% increase)
 - **Intended benefits not realised**
- Two of the seven critical requirements identified for successful ERP implementation are
 - **Effective governance structures for decision making through out the transformation lifecycle**, and
 - **Data management**

2. Institute of Defense Analyses (2011) Air Force Project: Root Cause Analysis of a Logistics ERP [RIPOSO et al, 2013]

- Costs grew from \$3.0 billion in 2008 to \$5.2 billion by 2010
- Full Deployment Decision (FDD) date was 2010 but now will not occur until 2016
- Deepest Root-cause: **Insufficient expertise**
- Another issue was **Data**
- As per academic literature: **75% of ERP implementations were considered failures**

3. Existing Work – Challenges with IT-ERP – Target Chain

Target Canada

(2015 article: <http://www.canadianbusiness.com/the-last-days-of-target-canada/>)

- Failure in use of new technology including SAP led to Target Canada filing for creditor's protection with
 - **\$5.4 billion write-down, and**
 - **Putting 17,500 people out of work.**

3. Existing Work – MIT's Prof Weill's work on benefits

IT Governance, Its Mechanisms and Benefits

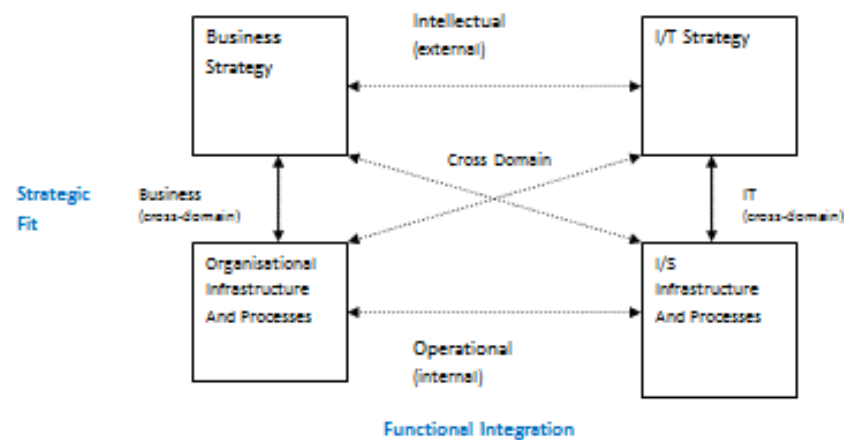
"IT governance involves specifying decision rights and accountabilities for important IT decisions. The goal is to encourage "desirable behaviours" in the use of IT" . [WEILL, P. 2004] Governance mechanisms involve decision making structures, alignment processes, and formal communications (*also called relational mechanisms*).

A study shows that IT governance is a mystery to key decision makers and that effective IT governance leads to profits 20% higher than those that are pursuing similar strategies [WEILL, P. & ROSS, J. 2005.]

3. Existing Work – IT-Business Alignment for benefits

IT Governance Enables Strategic Alignment between Business and IT

Adapted from Henderson and Venkatraman's Strategic Alignment Model



- IT governance enables both business and IT personnel to execute their responsibilities in support of business/IT alignment and the creation of business value from IT-enabled business investments
- Gerow et al examined IT-Business strategic alignment over the years through a meta-analysis of 30 years of alignment research. Their research supported the strategic alignment model and they found that alignment should lead to higher levels of performance.

Main Features of the Strategic Alignment Model

- Four fundamental domains of strategic choice are shown in the figure.
- Four dominant perspectives are derived that have implications for guiding management practice in the form of the roles of top management, I/ manager, and performance criteria for the respective perspective:
 - > Strategy execution – business strategy drives organizational design and I/S infrastructure design.
 - > Technology transformation – implement business strategy through IT strategy.
 - > Competitive potential – adaptation of business strategy via emerging IT capabilities.
 - > Service level – this focuses on how to build a world-class I/S service organisation
- Managers can use a mix of the performance criteria associated with the above perspective..

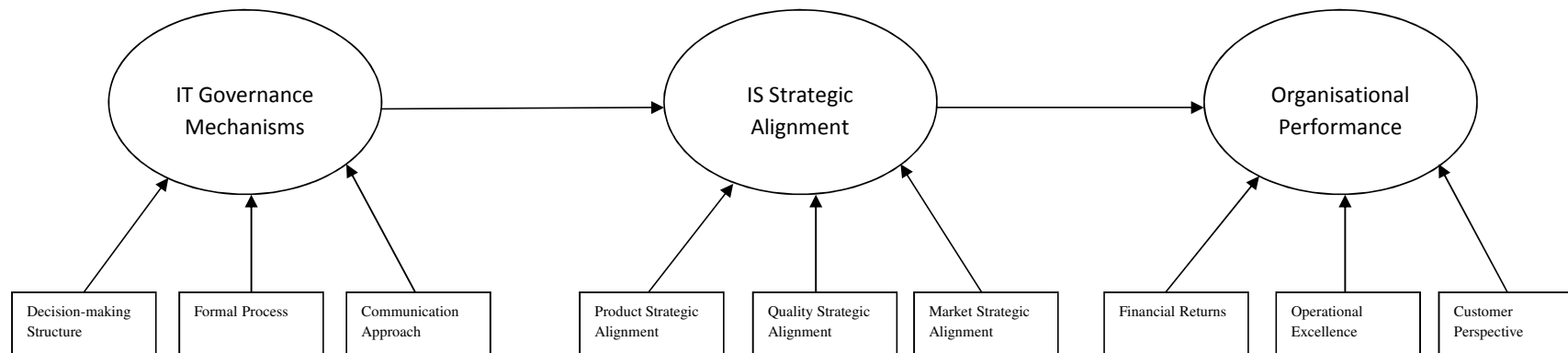
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3. Existing Work – MISQrtrly – Wu's model on benefits

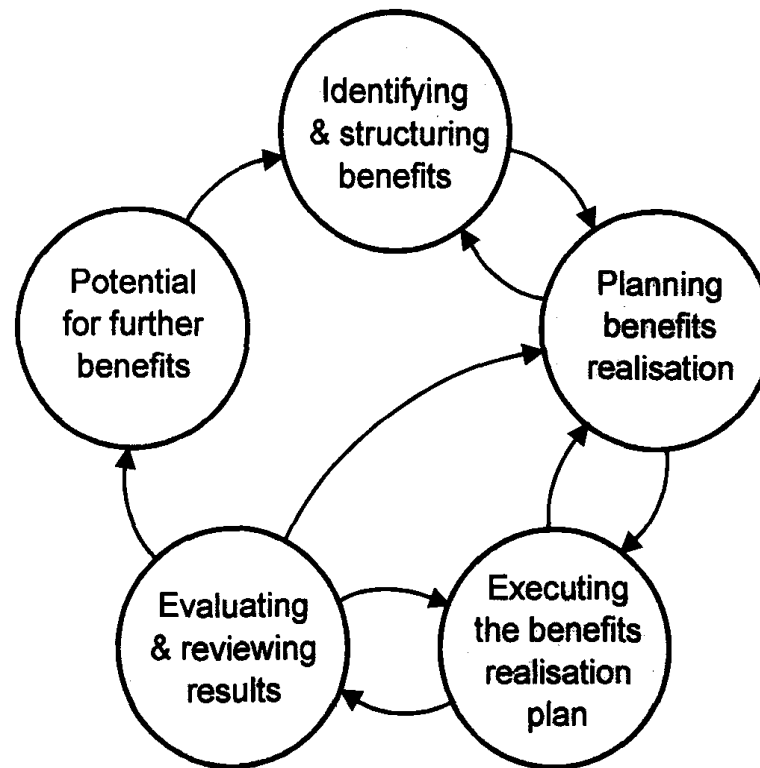
IT Governance Influences Organisational Performance

Structural Model developed by Wu et al (*MIS Quarterly*, 39, 497-A7) used in field study



- In June 2015, Wu et al published the structural model to explain the **causal affect** that the positive impact of well-designed IT governance mechanisms enable IS strategic alignment, which itself increases organizational performance, especially operational excellence and customer attentiveness.
- **Wu et al state that there are substantive implications for organisations implementing IT governance practices in as much as IT governance needs to be focused and leveraged in order to create superior strategic alignment.**
- Above study was conducted in Taiwan using data from various commercial firms and organisational performance was measured using traditional measures along customer perspective, operational excellence, and financial returns.
- How do we apply this for a Government Agency?

3. Existing Work – Ward et al – model on benefits



A process model of benefits management

Reproduced from Eu. J.Inf.Systs (1996) 4, 214-22; Authors: Ward, Taylor and Bo; Evaluation and realisation of IS/IT Benefits: an empirical study of current practice

3. Existing Work – Remanyi et al – model on benefits

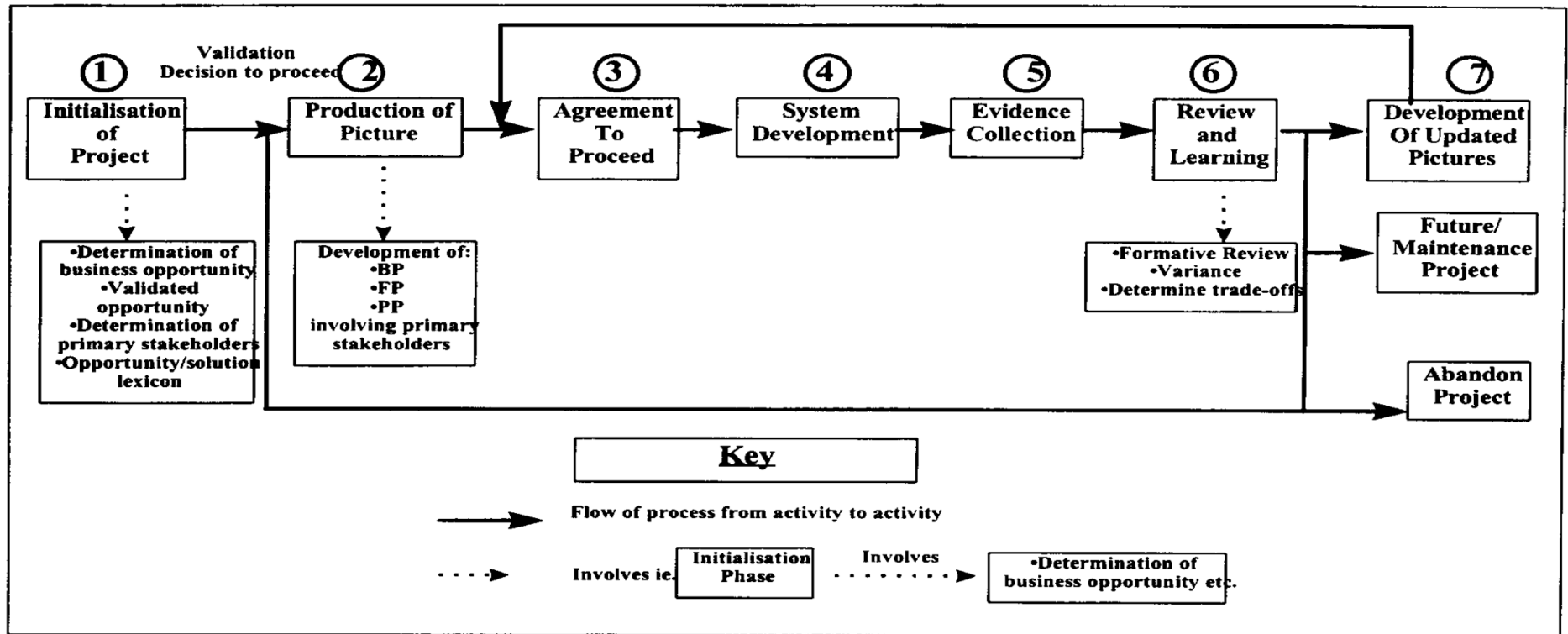
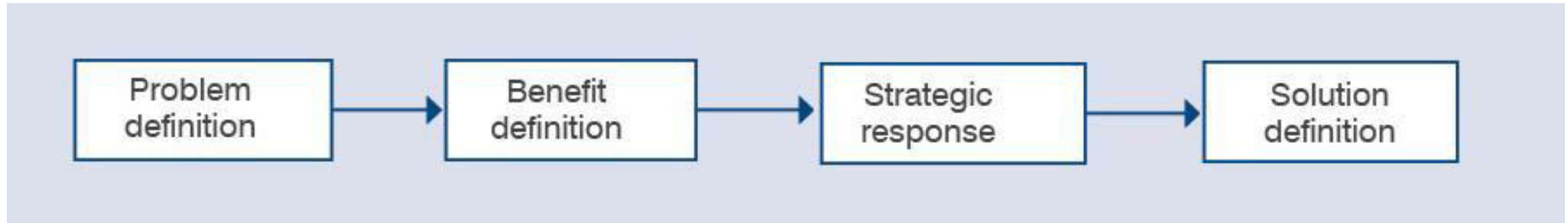


Figure 3. The process for active benefit realisation (ABR)

Reproduced from *Int. J. Of Project Management*, Vol. 16, No.2, pp.81-98, 1998; Authors: Remanyi and Sherwood-Smith; *Business benefits from information systems through an active benefits realisation programme*

3. Existing Work – Vic Government– model on benefits



The “benefits” approach to shaping a new investment

Reproduced from “Investment Management Standard A guide for Victorian government departments and agencies”

WE CAN SUMMARIZE

GOOD IT-IS GOVERNANCEleads to

PROPER IS-IT STRATEGIC ALIGNMENT.....leads to

IMPROVED ORGANISATIONAL PERFORMANCE

4. Solution Development – innovation and intervention

A benefits management approach [Peppard, Ward]

- ✓ most organisations focus on implementing the technology rather than realising the expected business benefits, and
- ✓ consequently, despite a project's success, the benefits are not realised.

Five principles for realising benefits through IT

- that IT has no inherent value, that benefits arise when IT enables people to do things differently, that only business managers and users can realise business benefits, that all IT projects have outcomes but not all outcomes are benefits, and that benefits must be actively managed to be obtained.
- Problem-based and innovation-based “interventions” are the two distinct types of IT-led changes that need to be understood for benefits realisation.
- They have proposed a list of seven questions that will help assist in developing the benefits realisation plan. This plan can be used to develop the business case.
- Their Benefits Dependency Network (BDN) provides the framework for explicitly linking the overall investment objectives and required benefits (the end) with the business changes (the ways) necessary to deliver those benefits and the essential IT capabilities (the means) that enable these changes.

4. Solution Development – Communication for Benefits

Relationship between benefits management constructs and practices, and benefits realisation success. [Kunal, Frederik]

- ✓ Developed an estimated benefits realisation model
 - quality and frequency of project related communication between the business and IT departments is the most important determinant of successfully realising benefits from projects.
 - the greatest potential to increase the probability of successful benefits realisation lies in the improvement of ability to continuously review the status of benefits realisation in projects.
 - The assumption here is that the constituent practices are underpinned by skills, knowledge and experience of organisational employees.

4. Solution Development – For Next Gen Technologies

(Downes, L., What is 5G and why should lawmakers care?, in Washington Post. 2015)

What is 5G

- It is the next generation of mobile communications that will fundamentally re-architect core Internet standards, effectively remaking the internet to be natively mobile.
- Expected trials in 2017 and deployment in 2020.

What are the main features

- It will be the platform for new innovations such as the "Internet of Things".
- Data speeds may exceed 10 gigabits per second (ten times what is currently available).
- Capacity: 10,000 x more traffic than current, 10 - 100 x more devices than current

What are the implications for Defence

- This is a disruptive innovation and will lead to many other unknown disruptors. Therefore, regulators will need to practice "**regulatory humility**".
- "Internet of Things" will support big changes to the way Defence does business - we need to initiate discussions with our IT service providers and suppliers.

4. Solution Development – Fourth Industrial Revolution

The principle theme of World Economic Forum 2016

First there was mechanization, driven by the introduction of steam power in the 18th century. Then came electrical power, a key enabler for the growth of mass production in the early 20th century. The third industrial revolution was brought about by the development of electronics and information technology, enabling the widespread use of automation. And the fourth? That's a little more complicated but it builds on the digital transformation initiated by the third revolution. The term refers to the *impact of a convergence of disparate emerging technologies*, from large scale digital platforms and smart sensors to 3D printing and synthetic biology to nanotechnology and advanced robotics. "

John Moavenzadeh, Head of Mobility Industries , World Economic Forum

4. Solution Development – Harvard’s Prof Porter’s Strategies

How smart, connected products are transforming companies.

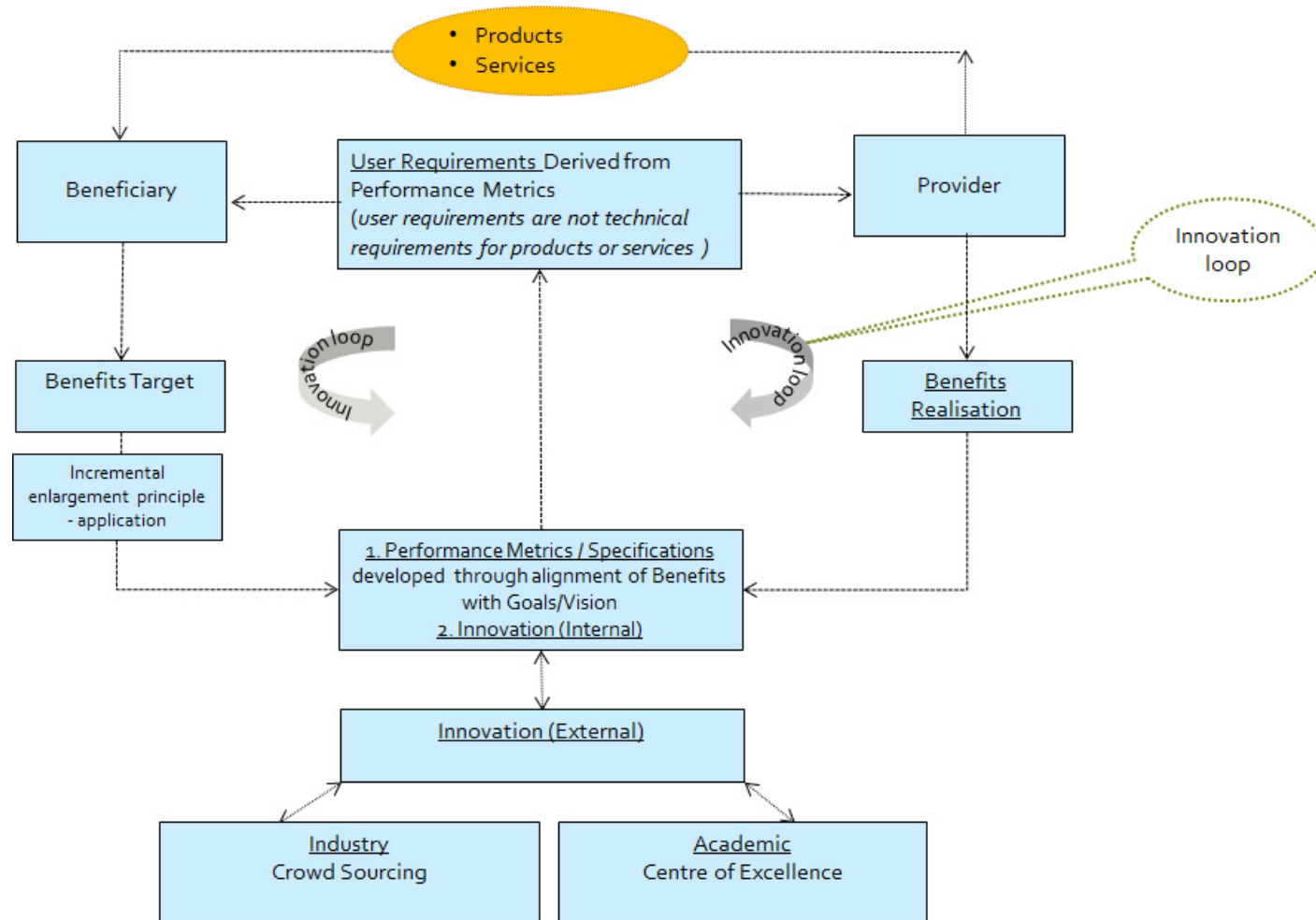
(Porter, M.E. and J.E. Heppelmann, Harvard Business Review, 2015)

- The evolution of products into intelligent, connected devices — which are increasingly embedded in broader systems—is radically reshaping companies and competition.
- The new product capabilities and infrastructure and the data they generate are reshaping the work of virtually every function in the value chain, including product development, IT, manufacturing, logistics, marketing, sales, and after-sale service.
- In addition, far more intense coordination among functions is now required.
- New forms of cross-functional collaboration and entirely new functions are emerging. These include unified data organizations, units to continuously improve products post sale, and groups charged with optimizing customer relationships.
- Implications for strategy – should the company change its business model?

4. Solution Development – Challenges

Authors	Model / Proposal	Gap
Ward, Taylor & Bo (1996)	A process model of benefits management	Appraisal of all benefits up front for investment approval will not be possible. Providers, external agencies, innovation loop have not been considered at all in the process model.
Remenyi and Sherwood-Smith (1998)	The process for active benefit realisation (ABR); collaboration and feedback loop for engaging primary stakeholders in an iterative formative evaluation process.	Does not encourage fast start ups (agile). Handling technological innovations is lacking.
DTF, Victorian Government, Australia	The Investment Logic Map: a “benefits” approach to shaping a new investment.	Considers only problem-based solutions and not innovation-based solutions. Other gaps per above. Linear approach.
Peppard et al. (2007)	Benefits management approach; Benefits Dependency Network (BDN); problem-based and innovation-based “interventions”.	Appears to be generally a linear approach Other gaps as given above.
Kunal et al. (2014) (2016)	The estimated benefits realization model. Provides relationship between benefits management constructs and practices, and benefits realisation success.	Gaps as per above.
Porter and Hepplemann (HBR) How smart, connected products are transforming companies.	Smart connected products are substantially changing the work of virtually every function within the firm.	No benefits framework for supporting the rapid transformation of companies due to smart connected products?
Downes, Larry What is 5G and why should lawmakers care? In Washington Post	5G networks will be the platform for new innovations, including the Internet of Things, along with many disruptors yet to be imagined.	Process for oversight and regulatory compliance requirements.

4. Solution proposal – stakeholder engagement



4. Solution proposal – Foundation

Transaction cost economics

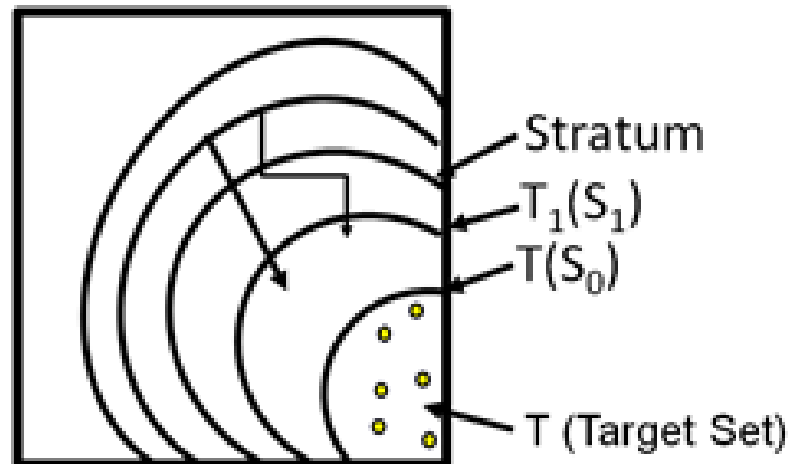
According to Williamson (2008), trade exchanges will benefit from being of an ongoing kind, and inasmuch as all complex contracts are incomplete, additional gains can be realized if order-preserving mechanisms are devised that enable the parties to preserve cooperation during contract execution. Williamson quotes Karl Llewellyn - "contract as framework" - and contrasts it with the more familiar concept of "contract as legal rules"

Reference class forecasting

The outside view on a given project is based on knowledge about actual performance in a reference class of comparable projects. is a method of predicting the future by looking at similar past situations and their outcomes.

4. Solution proposal – Foundation

Stratification target, reachability and incremental enlargement principle



Incremental Enlargement Principal -

Uses a fuzzy logic approach (mathematical model using simulation and natural language processing – **the underlying technologies**)

4. Solution proposal – Validation

A mathematical construct for validation of the conceptual framework is under development.

Initial development trials: performance of user versus provider : 98% versus 86%

This appears to be incorrect however similar situations have also been reported in the literature. Importantly, this framework has a resolution process, below.

Root cause: Prioritization of requirements from user side is different from that of the provider side.

Lead to possible issues: Strong dis-agreements between user and provider.

Resolution: The benefits framework proposes finding solutions externally, for example, through crowdsourcing or academia. The three stakeholders would come to a mutual agreement and assign “weightage” against each benefit and requirement. This could take place in a iterative loop under a flexible and open arrangement, reviewing each benefit and requirement until its final prioritization is determined on agreed terms.

4. Solution proposal – Innovation-led benefits framework

Innovation through external agencies

- “Innovation” loops are coupled to external “innovation” programs of research centres such as academic centres of excellence, industry R&D, and crowd sourcing.

Collaboration between three groups

- Collaboration among three organisations – the organisation that desires ICT-led change, ICT industry, and ICT academic research organisation.
- The flexible framework allows collaboration and sharing of information leading to reduction in governance arrangements.

Best practice contracting arrangement

- Benefits from an ongoing arrangement.
- Additional gains are realized when parties preserve cooperation during contract execution.
- Framework ensures "contract as framework" – and not "contract as legal rules" - contract is a flexible arrangement and not a rigid contract that serves as a legal weapon or protective device.

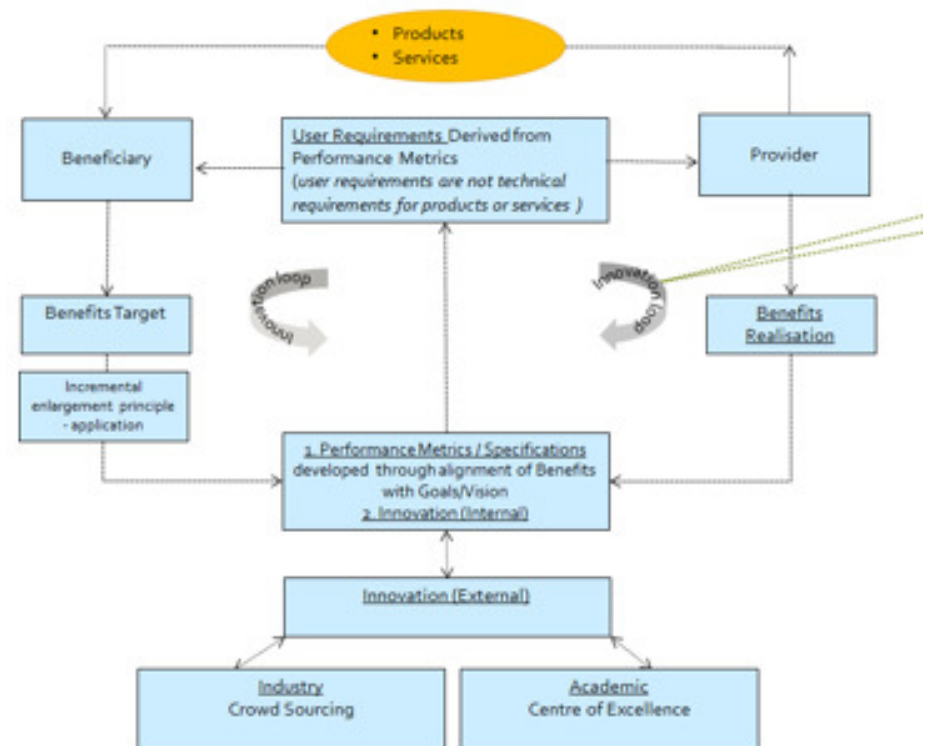
4. Solution proposal –benefits realisation

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