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Analysis of the Wardley Pioneer Settler Town Planner Framework

Viable Systems and IT Evolution

Introduction

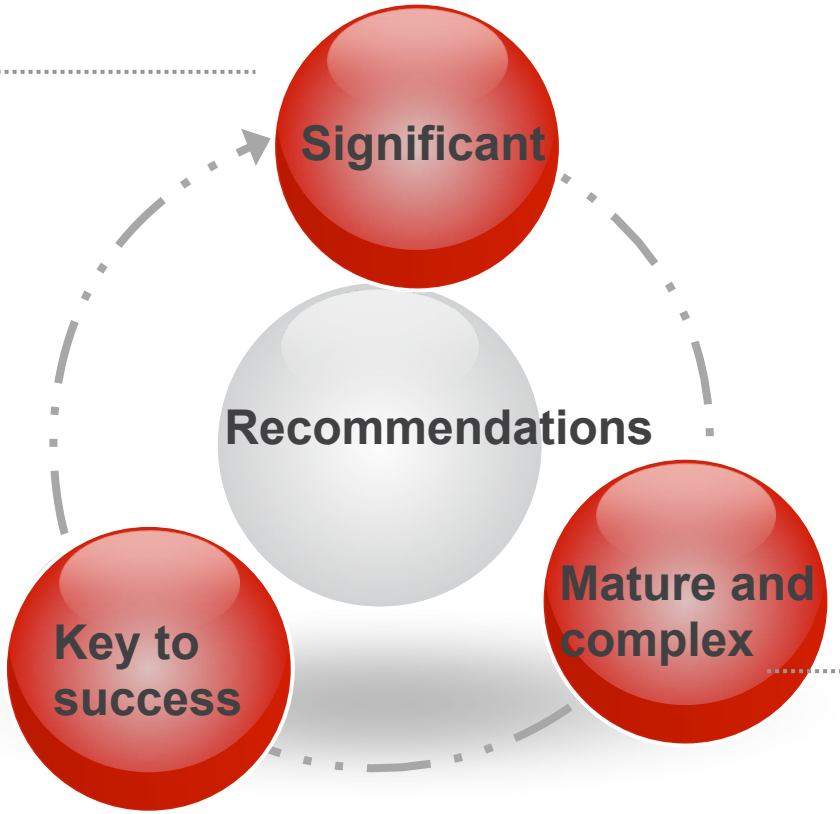
Introduction

- Businesses and their Enterprise IT functions must integrate their core and critical processes with new innovations. Both are necessary for on-going enterprise viability
- Wardley PST, an IT evolution framework, may reconcile these competing pressures
- The Viable Systems Model is employed to predict if Wardley PST preserves or undermines enterprise viability

Enterprise IT

Why Enterprise IT?

Technology spend is over $1.6 trillion annually



Specialized into myriad technologies and disciplines

Alignment crucial to enterprise success

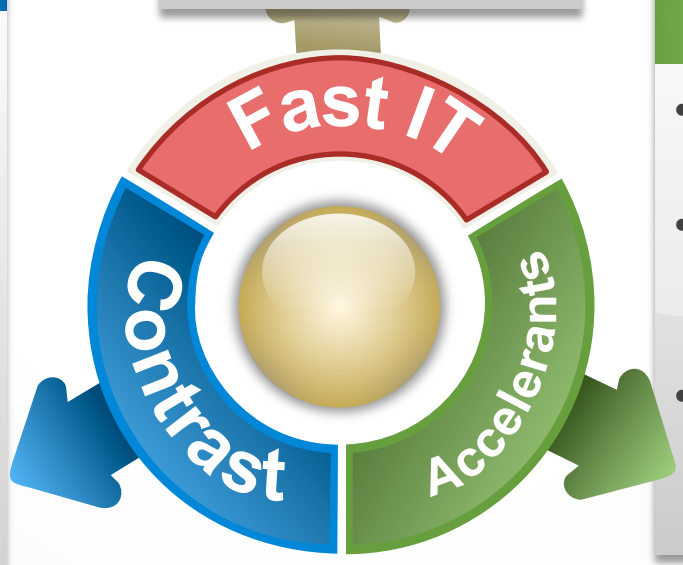
Why Now?

Internal/External

- Cloud Computing
- Mobile technologies
- DevOps

Contrasts

- Small, highly interactive teams over large groups
- Craft-like approaches over rigid process
- Autonomy over end-to-end delivery



Knock-on

- Rapid Iteration
- Innovation over reliability
- Ability to rapidly fix problems

Enterprise IT is being disrupted!

Innovation must coexist with Reliability

- Business critical systems persist. "Slow IT" examples:
  - General ledger
  - Electronic medical records
  - Supply chain management
- Slow IT systems are qualitatively different than "Fast", and often characterized by
  - Low tolerance to operational risk
  - Focused on reliability, stability and control
  - Tend to follow documentation- and specification-heavy processes
- Disciplines have emerged over 50 years, codifying standards, processes and best practices
  - IT Service Management (ITIL), Project Management (PMP), Enterprise Architecture (TOGAF, Zachman)……
- Fast IT and Slow IT must coexist within the same enterprise
  - Enterprise IT needs to integrate Fast IT's innovation with Slow IT's reliability.
  - Until they're Fast, they're Slow
  - This is an organizational problem, not just technology
  - In other words, a system problem

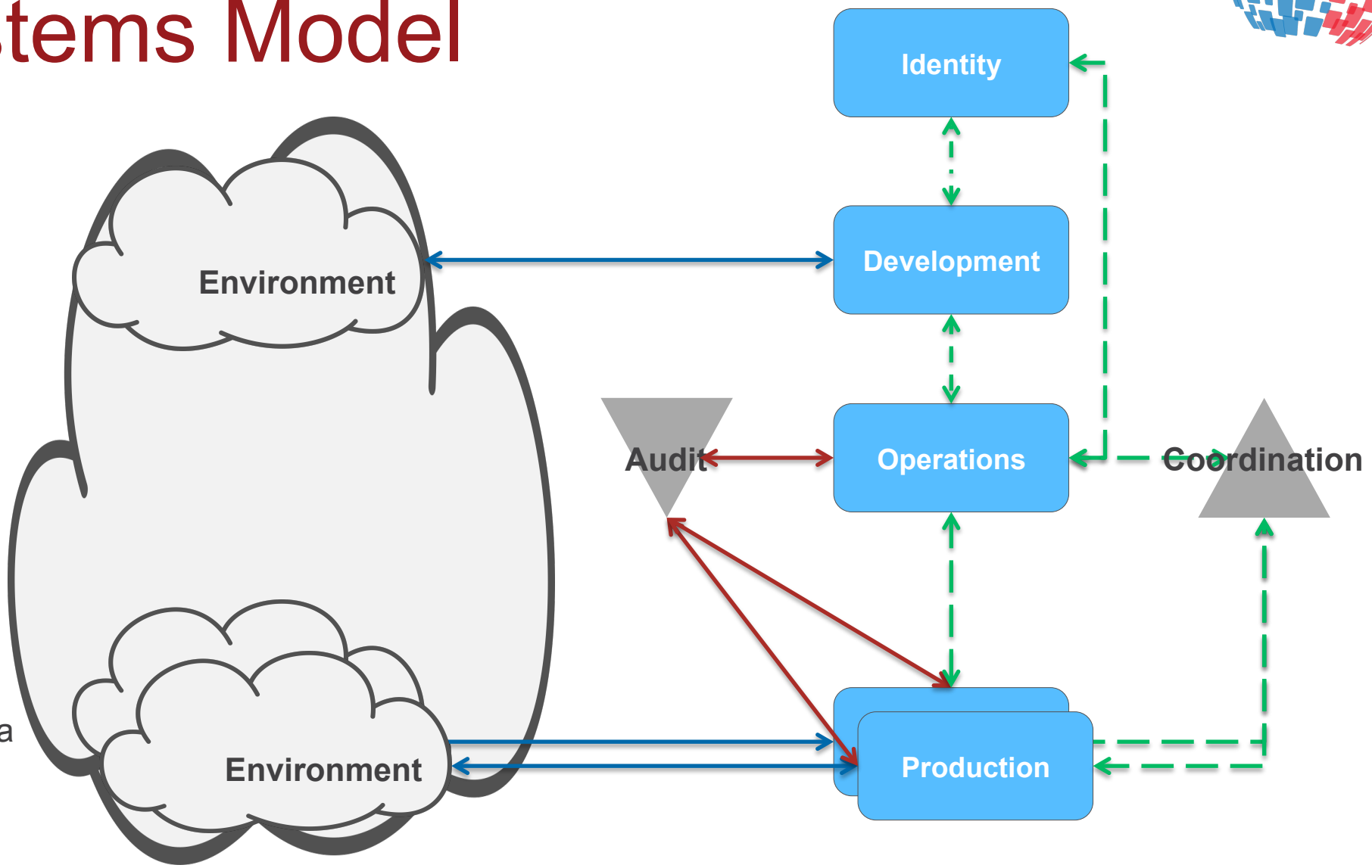
Background

Viable Systems Model

Viable Systems Model

- Stafford Beer, 1972
- Rooted in cybernetics theory
- Inspired by human autonomic system
- Solid track record
- Each “Production” subsystem recursively implements systems 2-5
- VSM subsystems may/may not map 1:1 to typical organizational chart

- **Our Interest in VSM:** It is a reliable method to evaluate systems for their ability to remain independently viable.



Viable Systems Model

Viable Systems Model

The VSM predicts future viability of a system, based on health and interactions of these subsystems

So, *Why* VSM?

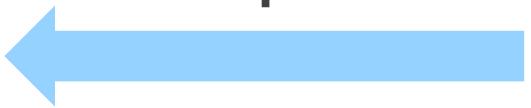
- Enterprises must integrate new technologies and associated operating models, at ever accelerating pace
- But how? What organizational models make sense? Reporting structures? Governance models? Lifecycle management?
- Vendors, consultants and analysts often claim to have a magic framework
- Businesses have had mixed results pursuing management fads (TQM, BPR, JIT, Six Sigma ….)
- Can VSM help evaluate a new framework before use?

VSM in the Enterprise

Viable Systems Model

VSM in the Enterprise

- Use of formal systems theory per se is limited within business enterprises
- Research, however, shows six benefits from VSM analysis of enterprise IT
  - Viability
  - Transparency
  - Modeling
  - Modularization
  - Combinability
  - Context Independence



Our primary interest in this paper

VSM Benefits to the Enterprise

- Hyland, 2015:
  - VSM can help reduce “shadow IT” (a byproduct of all this disruption)
- Hugos, 2009:
  - VSM enhances business agility confronting unexpected challenges
- Peppard, 2005:
  - VSM is effective for describing, diagnosing and designing IT governance models

Pioneers, Settlers, and Town Planners (and some thievery)

Wardley PST

Pioneers, Settlers, and Town Planners

- “Wardley PST” refers to experimental three-mode approach to integrating innovation with reliability
- Developed by Simon Wardley and James Duncan

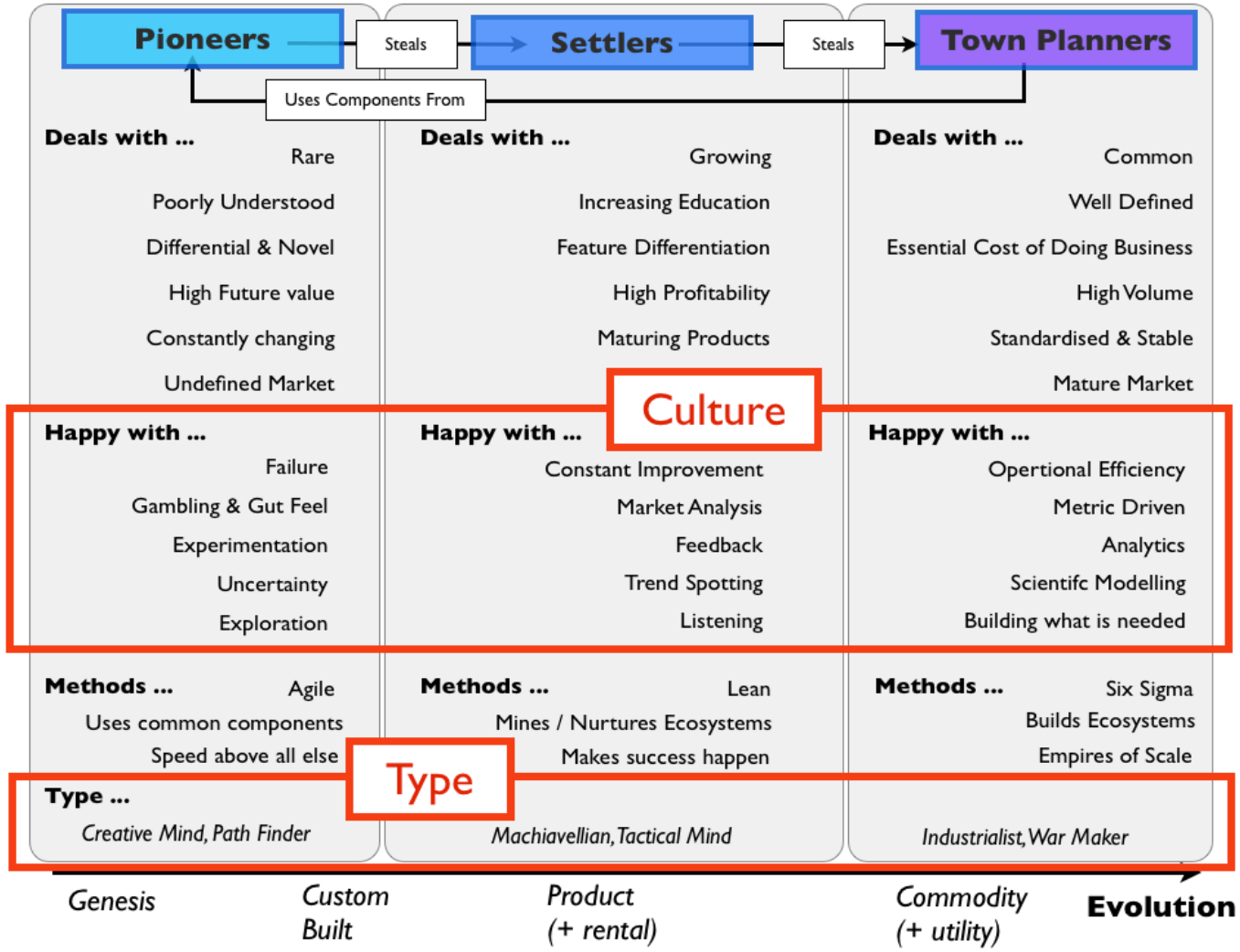
Pioneers, Settlers, and Town Planners

- Pioneers
  - Explore new concepts, create new inventions, perform core research
  - Aligns with Fast IT
- Settlers
  - Identify maturing Pioneer work
- Town Planners
  - Industrialize products, exploit economies of scale, focus on efficiency, scale and reliability
  - Aligns with Slow IT
- Tools, methods, and talents are different for each mode
- Virtuous cycle of theft
  - Each “steals” what works from the group preceding, improving and enhancing
  - *What is stolen* provides feedback to the source group

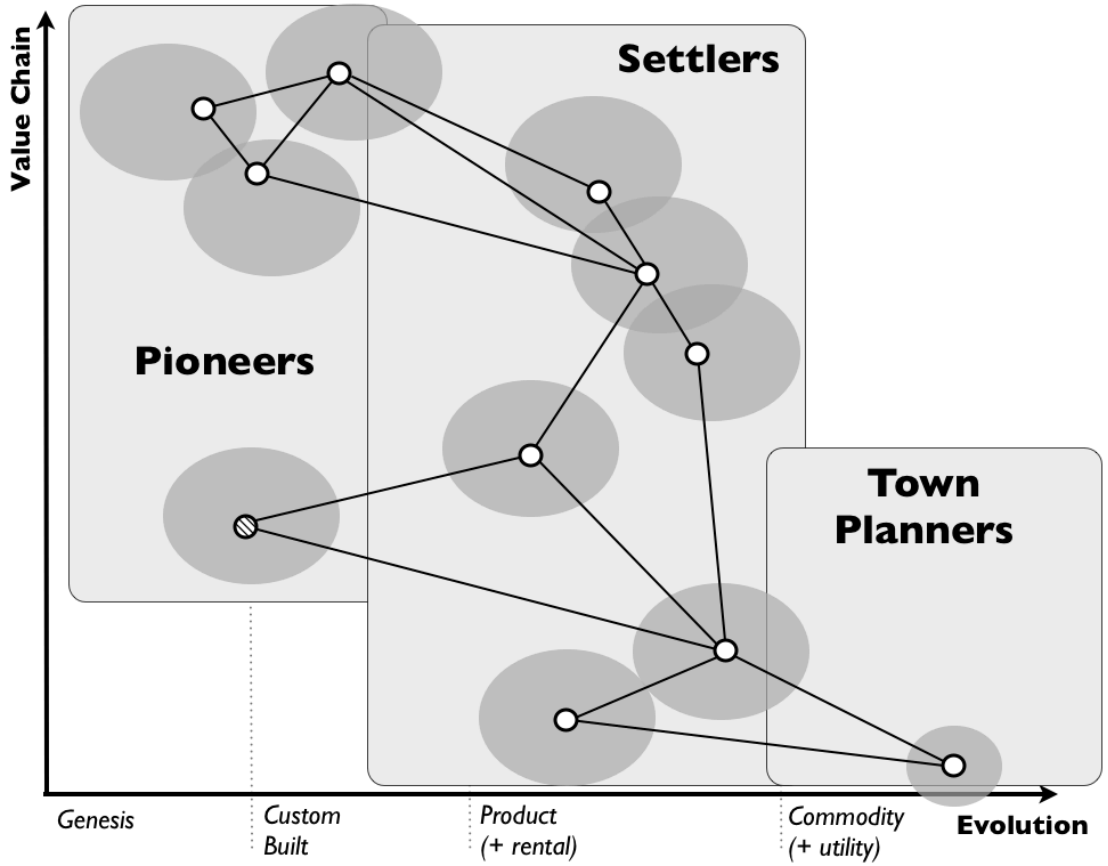
Pioneers, Settlers, and Town Planners

- Pioneers align with Fast IT
- Town Planners align with Slow IT
- Settlers bridge them, providing organizational elasticity
- PST tracks lifecycle from genesis, through to commoditization

- Each mode has unique challenges, cultures and methods.
- Depending on organizational structure, each may also have own external interface (clients, vendors)



Key Aspects of Wardley PST



PST Value Chain Mapping

- Recursive: P-S-T evolution is applicable to whole enterprise and individual business units. P,S,T can be separate business units, or modes within each business unit.
- Favors small unit size, facilitating monitoring, urgent alerts and coordination.
- Coordination via “theft” implicitly selects for best ideas, tools, methods, foundations.
- Settlers buffer the major differences between Pioneers and Town Planners
- Value Chain Mapping captures top-down structure and internal relationships of business, enabling shared vision, basis for strategy, planning and policies
- It reflects organizational reality

Wardley PST

Analysis Scope

- Objective: Evaluate how well Wardley PST satisfies the Viable Systems Model
- Scope: VSM systems 1-5, system 3*, algedonic alerts
- Note that this is a preliminary analysis. Consideration of other VSM subsystems, the environment, etc. are saved for future study
- No empirical analysis has been performed. This is based on PST's claims, not on actual results seen by enterprises that have followed PST.

Methodology

	Wardley PST	
Grade	Details	Points
Excellent	The approach directly satisfies the given VSM system requirement.	3
Very Good	The approach implies that the given VSM system requirement is satisfied.	2
Adequate	Wardley PST does not contemplate the given VSM system requirement, but it could still be met by the host enterprise IT organization. That is, Wardley PST does not violate the given VSM requirement.	1
Violates / contradicts	The approach violates the given VSM system requirement.	0

- Evaluate Wardley PST against each of the VSM components in scope, using a Likert scoring model
- Higher score = better
- Based on *claimed* PST approach, methods

Scoring Wardley PST

- Specification of Pioneer, Settler and Town Planner modes directly satisfies System 1
- System 2 directly satisfied by “process of theft” & feedback
- Systems 3 and 3* indirectly satisfied by System 2’s coordination and System 1 interfaces
- System 4 satisfied by Pioneers which see overall future, and each mode’s ability to respond to requirements, environment with own selection of tools, methods, etc.
- System 5 satisfied directly by the mode-spanning Value Chain Mapping
- Algedonic Alerts directly satisfied by information flow between modes (and System 1s’ external interfaces), although scope may be constrained.

- Using this scoring method, Wardley PST satisfies VSM at 90%

	Wardley PST	
VSM system	Details	Points
System 1 (Production)	Pioneers, Settlers, Town Planners	3
System 2 (Coordination)	"governed by process of theft" where ideas, methods, technologies propagate through the different modes	3
System 3 (Operations)	Implied by flow used for System 2	2
System 3* (Audit / Monitoring)	Implied by information flow between adjacent modes	2
System 4 (Development)	Pioneers, Settlers, Town Planners	3
System 5 (Identity)	Achieved through Value Chain Mapping	3
Algedonic Alerts	Information flow between adjacent modes	3
	Total Wardley PST points:	19
	Total VSM points possible:	21
	VSM / Wardley PST alignment:	90%

Analysis

- Wardley PST recognizes the evolutionary nature of technology
  - Settlers transform the Fast IT innovations of Pioneers to the reliable Slow IT systems of Town Planners
  - Today's Fast IT is tomorrow's Slow IT
- Wardley PST's "virtuous cycle of theft" is a simple and practical coordination approach, fulfilling many VSM requirements
- Mode-specific methods and mode-spanning Value Chain Mapping complement each other by enabling both subsystem optimization and a holistic system (enterprise) view.

Wardley PST Viability and Future Research

Conclusion

Conclusion & Future Research

- Conclusion
  - Preliminary analysis of Wardley PST against the Viable Systems Model suggests a high-degree of alignment
  - Wardley PST should enable the integration of Slow IT and Fast IT systems without undermining Enterprise IT viability
- Future Research
  - Perform similar VSM analysis of competing IT evolution frameworks
  - Suitable case studies could help determine real-life viability
  - Additional research should be performed to understand the impacts of organizational size and levels of hierarchy