

# *Innovation Management and Enterprise Architecture*



MACC 2018

Sparx Services North America

[www.sparxsystems.us](http://www.sparxsystems.us)

## About Sparx Services North America

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*“Align information technology and systems engineering capabilities with business strategy using industry best practices and industry leading tooling to deliver world-class results.”*

- Industry thought leader in enterprise architecture, business architecture, systems and software engineering, requirements management, and agile methods
- Member and contributor to
  - UML<sup>®</sup>, SysML<sup>®</sup>, UPDM<sup>™</sup>/UAF<sup>®</sup>, BACM at OMG<sup>®</sup>
  - TOGAF<sup>®</sup>, ArchiMate<sup>®</sup>, IT4IT<sup>™</sup> standards at The Open Group
  - UML Profile and Metamodel teams at Business Architecture Guild
- Open Group Accredited Training Provider, Guild Accredited Training Partner<sup>™</sup>, IIBA<sup>®</sup> Endorsed Education Provider (EEP<sup>™</sup>)

# What is Business Agility?

- *“...the ability of an organization to sense environmental change and to respond efficiently and effectively to that change.”*  
- Gartner, 2006
- Effectively exploiting agility enables the business to...
  - Collaborate on new ideas
  - Understand impact of new ideas on existing business model and strategy, operational capabilities, and in-flight initiatives



# Innovation Management – Definitions

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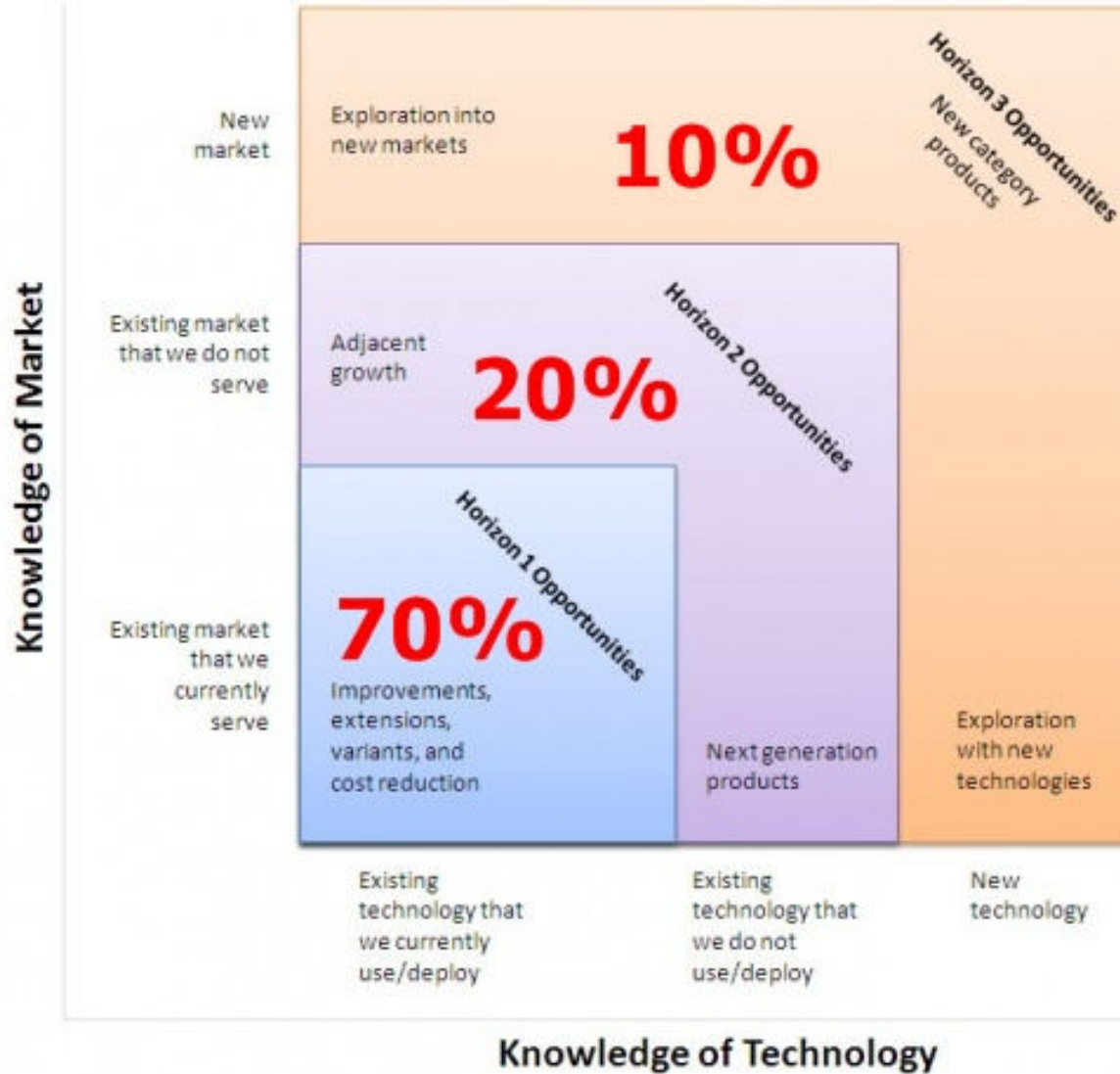
- Idea
  - **Opinions or suggestions** that can lead to potential innovations that generate incremental or substantial value
- Innovation
  - A new method, idea, or device, and the process of **generating value** from the new concept
- Innovation Management
  - The **systematic development** of innovations in an organization
  - Including **designing and implementing** business processes, workflows, systems, and activities
  - To **generate insights**, creative ideas, evaluate them, develop business cases, prioritize, experiment
  - **Execute projects** based on the new concepts developed to manage innovation investments

# Innovation Management – Principles

Principle	Description
Realization of Value	Add value to the organization
Future-Focused Leaders	Challenge the organization's objectives and strategy
Purposeful Direction	Motivate and mobilize for organizational development
Innovation Culture	Be timely and encourage a focus on the future
Exploitable Insights	Allow for context and promote the adoption of best practice
Mastering Uncertainty	Be flexible and holistic
Adaptability	Be an effective and reliable process

*[“ISO 50500 Series Innovation Management: Overview and Potential Usages in Organizations”](#)*  
 Alice De Casanove, Laure Morel, Stéphane Negny  
 International Society for Professional Innovation Management (IPSIM 2017)

# Innovation Management – Business Strategy



# TOGAF Architecture Development Method (ADM)

- Provides **tested and repeatable** process for developing architectures
- Allows organizations to **transform** their enterprises in a **controlled manner** in response to business goals and opportunities
- Can use TOGAF ADM to implement an Innovation Management System
  - And understand integration with ADM execution

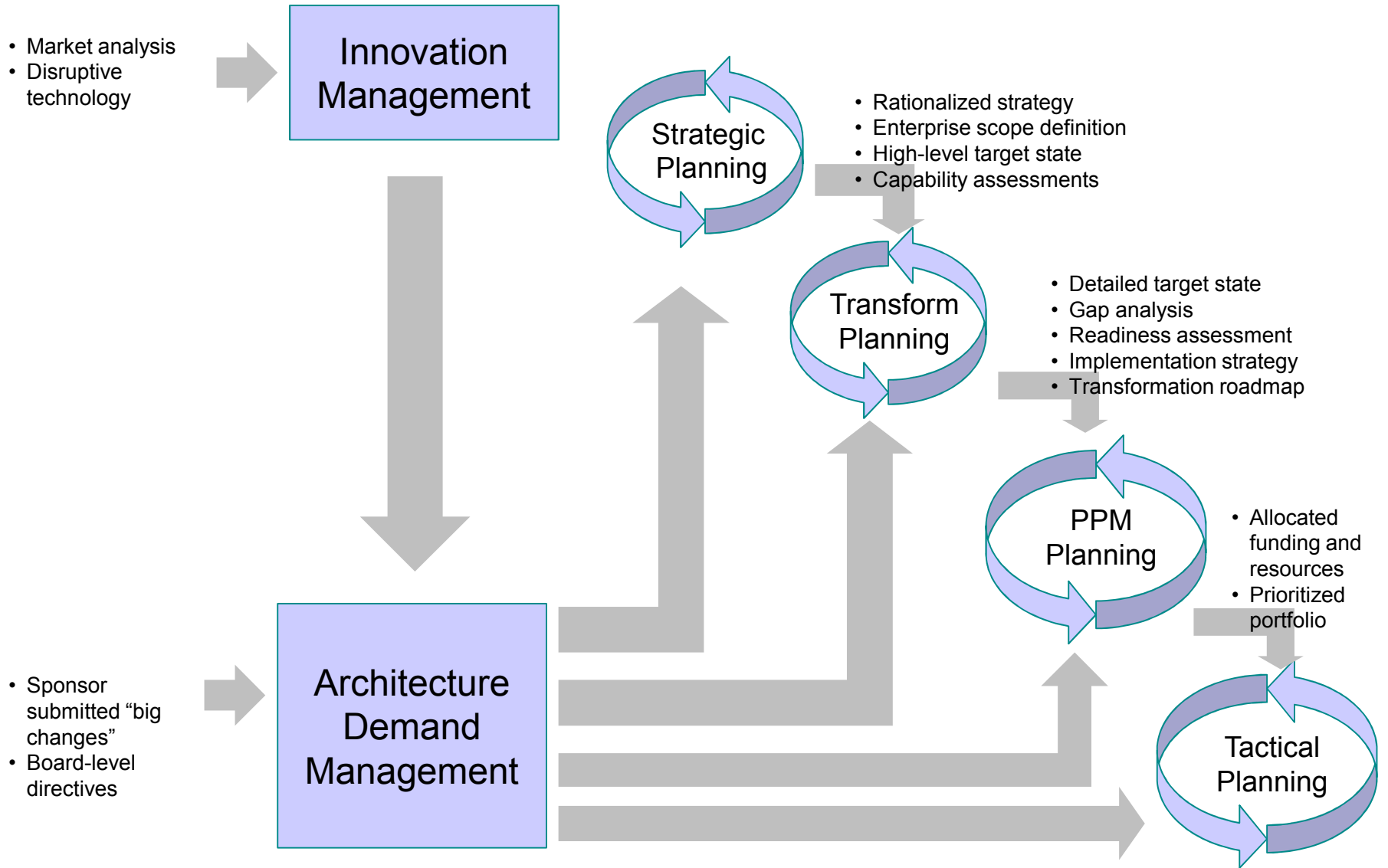


# TOGAF ADM and Planning Processes

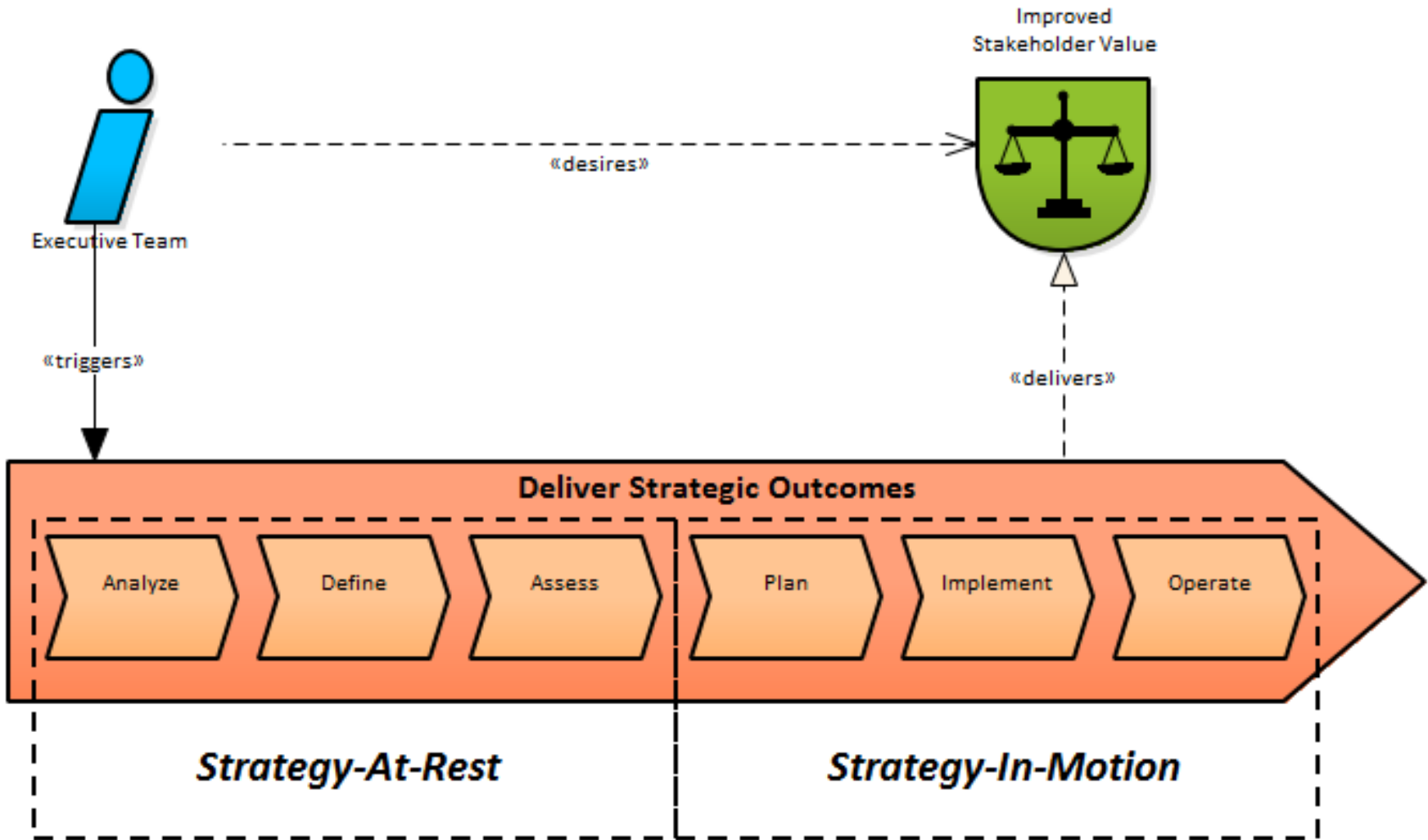
Stage	Phases	TOGAF ADM Phase	ADM Activity	ADM Deliverable
Strategy	Vision & Strategy	Phase H: Architecture Change Management	Monitor Environmental Changes	<ul style="list-style-type: none"> <li>Change Requests</li> <li>New Requirements</li> </ul>
			Activate Architecture Process	<ul style="list-style-type: none"> <li>Updated Business Strategy</li> <li>Request for Architecture Work</li> </ul>
		Phase A: Architecture Vision	Identify Stakeholders and Requirements	<ul style="list-style-type: none"> <li>Stakeholder Map</li> <li>Refined Requirements</li> </ul>
			Affirm Business Strategy	<ul style="list-style-type: none"> <li>Rationalized Business Strategy</li> </ul>
			Evaluate Business Capabilities	<ul style="list-style-type: none"> <li>Business Capability Assessment</li> </ul>
			Assess Transformation Readiness	<ul style="list-style-type: none"> <li>Transformation Readiness Assessment</li> </ul>
			Define Scope	<ul style="list-style-type: none"> <li>Architecture Vision</li> </ul>
			Describe High-Level Target Architecture	<ul style="list-style-type: none"> <li>Architecture Vision</li> </ul>
			Define Value Proposition	<ul style="list-style-type: none"> <li>Statement of Architecture Work</li> </ul>
			Describe Baseline and Target Architecture	<ul style="list-style-type: none"> <li>Architecture Definition Document</li> <li>Architecture Requirements Specification</li> </ul>
Transformational Planning	Enterprise Architecture Analysis	Phases B-D: Business/Data/Application/Technology Architecture	Perform Preliminary Gap Analysis	<ul style="list-style-type: none"> <li>Architecture Definition Document</li> </ul>
			Build Preliminary Architecture Roadmap	<ul style="list-style-type: none"> <li>Preliminary Architecture Roadmap</li> </ul>
	Roadmap/Proposals	Phase E: Opportunities & Solutions	Consolidate Gap Analysis and Requirements	<ul style="list-style-type: none"> <li>Architecture Definition Document</li> <li>Architecture Requirements Specification</li> </ul>
			Confirm Transformation Readiness	<ul style="list-style-type: none"> <li>Transformation Readiness Assessment</li> </ul>
PPM	Funding/Approval/Governance	Phase E: Opportunities & Solutions	Formulate Implementation Strategy	<ul style="list-style-type: none"> <li>Implementation Strategy</li> </ul>
			Identify Work Packages	<ul style="list-style-type: none"> <li>Architecture Roadmap</li> </ul>
Tactical Planning	Plan-to-Build Transition/Program Planning	Phase F: Migration Planning	Prioritize Projects	<ul style="list-style-type: none"> <li>Implementation Plan</li> </ul>
			Describe Transition Architectures	<ul style="list-style-type: none"> <li>Architecture Definition Document</li> </ul>
			Develop Implementation Plan	<ul style="list-style-type: none"> <li>Implementation Plan</li> </ul>



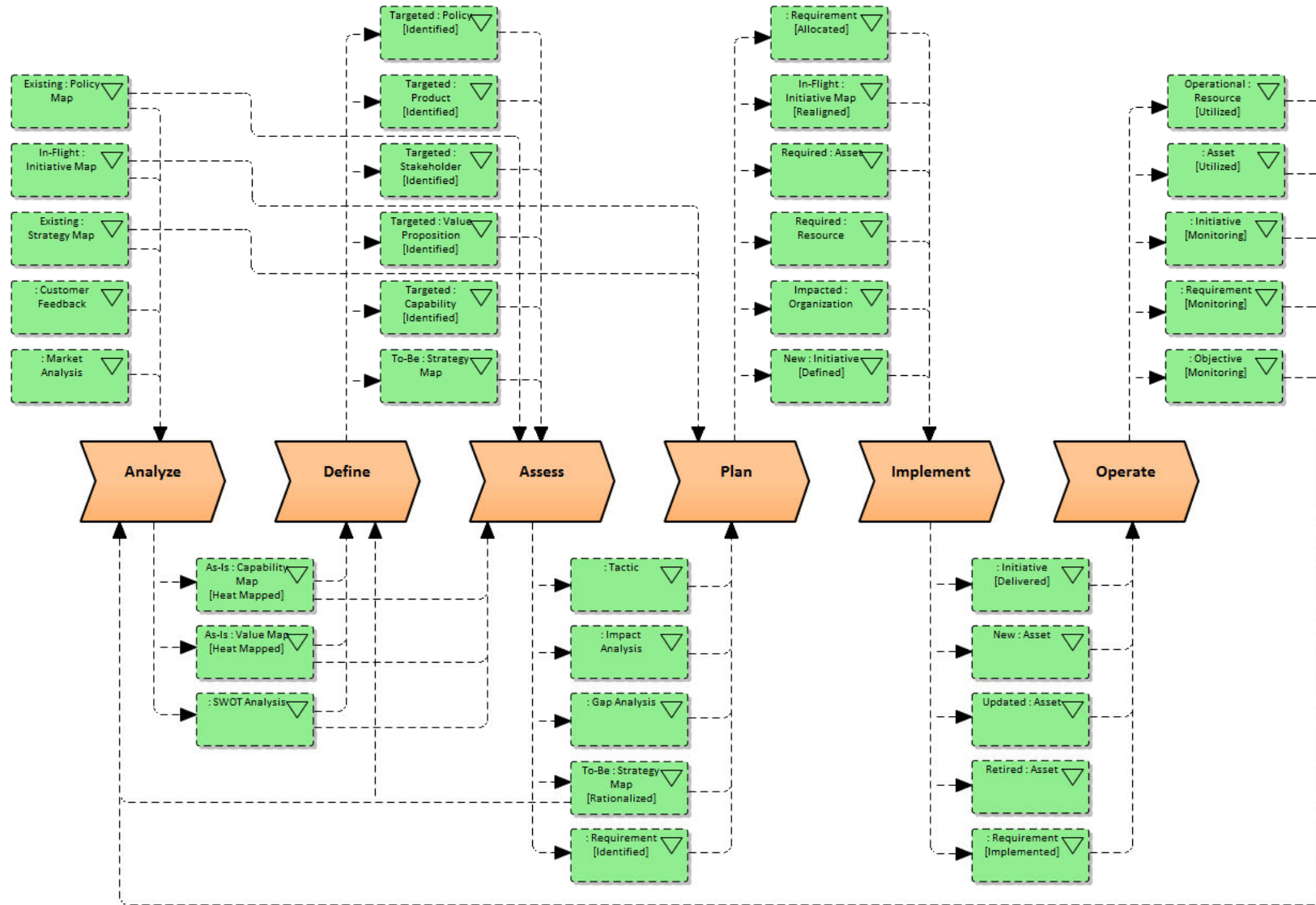
# Integrated Enterprise Planning Processes



# Deliver Strategic Outcomes – Value Stream



# Deliver Strategic Outcomes – Value Stream



# Innovation Management – Dimensions

## Innovation Matrix

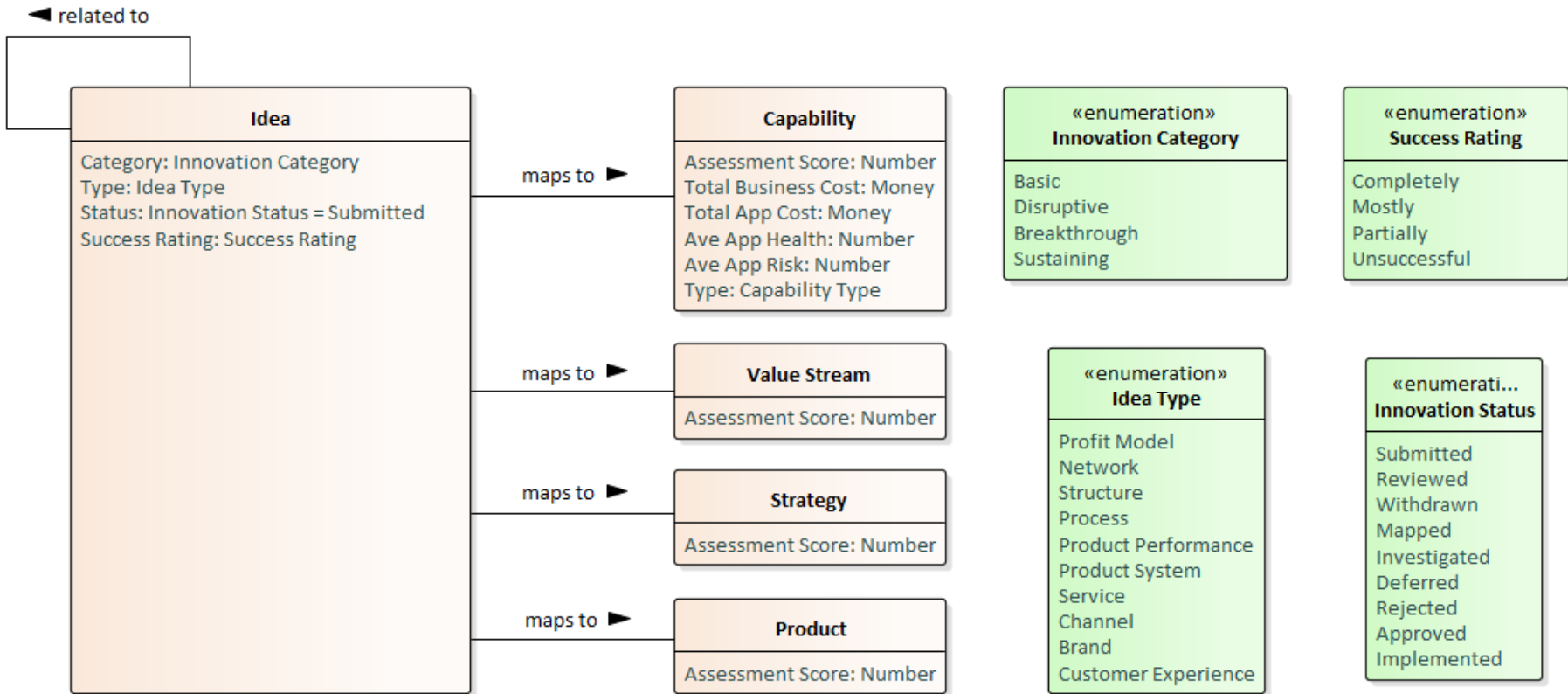
Problem Definition	Well Defined	<b>Breakthrough Innovation</b> Skunk Works Mavericks Open Innovation/Prizes	<b>Sustaining Innovation</b> R&D Labs Outsourcing
	Not Well Defined	<b>Basic Research</b> Research Divisions Research Grants Academic Affiliations	<b>Disruptive Innovation</b> VC Model Innovation Labs 15% / 20% Rule
		Not Well Defined	Well Defined
		Domain Definition	

# Ten Types of Innovation

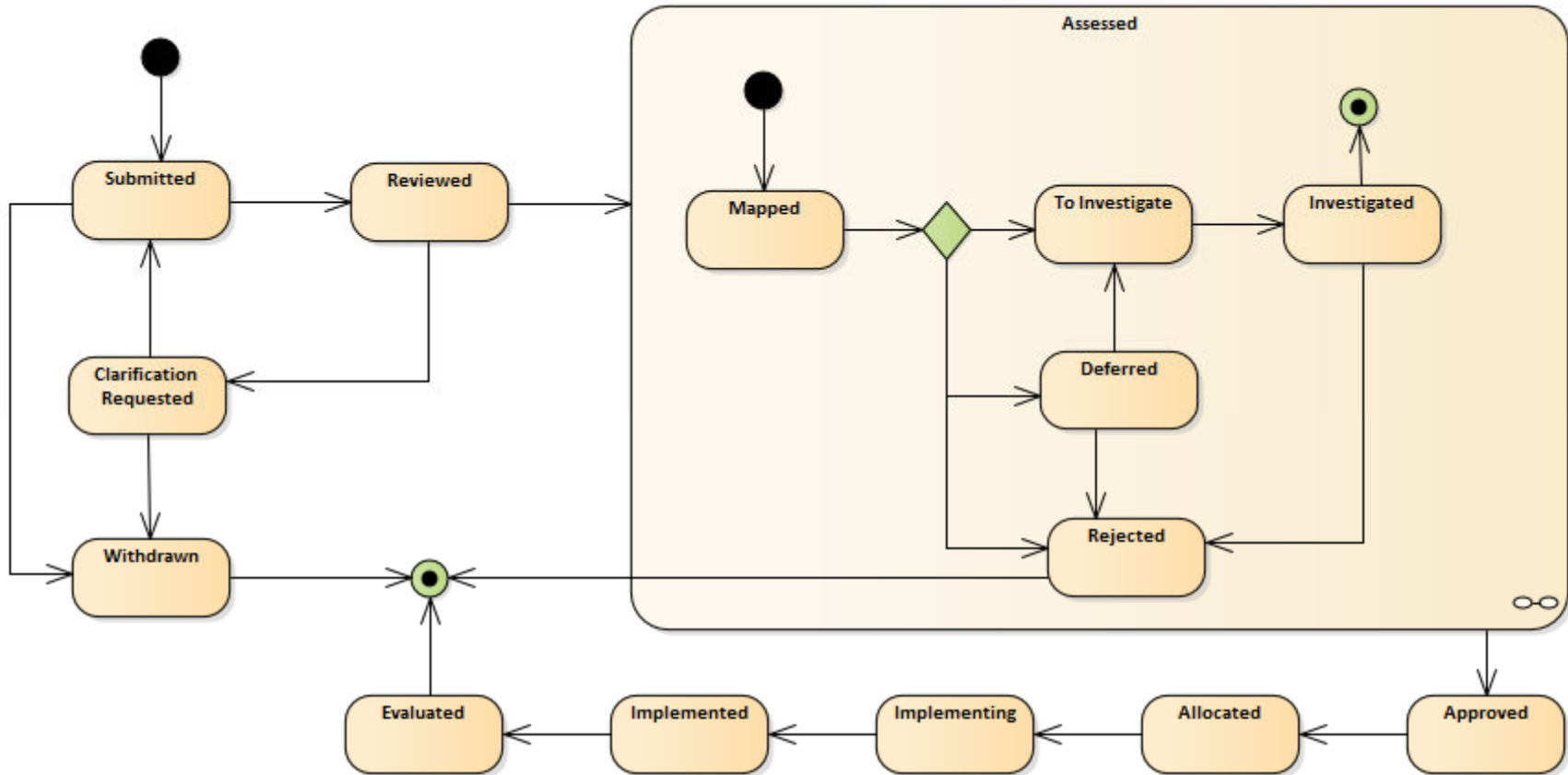
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1. **Profit Model:** How you make money
2. **Network:** How you connect with others to create value
3. **Structure:** How to organize and align your talent and assets
4. **Process:** How you use signature or superior methods to do your work
5. **Product Performance:** How you develop distinguishing features and functionality
6. **Product System:** How you create complementary products and services
7. **Service:** How you support and amplify the value of your offerings
8. **Channel:** How you deliver your offerings to customers and users
9. **Brand:** How you represent your offerings and business
10. **Customer Experience:** How you foster compelling interactions

# Idea – Metamodel



# Idea Lifecycle



# Innovation Management Activities





# Submit New Ideas

Home | Add object... | Refresh | Share | Info

**Add Object**

Element type \*

Name \*

Identify suspected terrorist with image recognition via airport cameras

Notes

B I U [List] [Link] [Unlink] [Undo] [Redo]

**Add**

A

Home | Ideas | Refresh | Share | Info

Idea Backlog | Idea Categorization

Ideas Listing | Identify suspected terrorist with image recognition via airport cameras

Use IoT for predictive and preventative airplane maintenance | Use machine learning to create business moments to proactively pu: ...

<New>

A

# Prepare Ideas

Item	Author	Innovation::Category	Innovation::Status	Innovation::Type	Innovation::Success Rating
<input checked="" type="checkbox"/> <b>Identify suspected terrorist with image recognition via airport cameras</b>	VP IT		Submitted		
<input checked="" type="checkbox"/> <b>Use IoT for predictive and preventative airplane maintenance</b>	CIO User		Submitted		
<input checked="" type="checkbox"/> <b>Use machine learning to create business moments to proactively push products and services to passengers</b>	VP Terminal Ops		Submitted		

Add New ▾

# Create Ideas Review

## Initial Ideas Review

Open Jun/11 to Jun/15

Author: Innov Mgr

*Got three ideas we need to work through to start strategic planning for disruptive technologies for the airport.*



Identify suspected terrorist with image recognition via airport cameras

Use IoT for predictive and preventative airplane maintenance

Use machine learning to create business moments to proactively push products and services to passengers

# Review Ideas

**Initial Ideas Review**  
Artifact «EARReview»

[Join Review](#) [Leave Review](#)

Got three ideas we need to work through to start strategic planning for disruptive technologies for the airport.

**Review Summary**

Status	Pending
Start	5/29/2018
End	5/30/2018
Discussion Topics	5
<b>Priority</b>	
High	3
Medium	1
Low	0
<none>	1
<b>Status</b>	
Open	4
Awaiting Review	1
Closed	0

**Review diagrams**

[Initial Ideas Review](#)

**Objects in Review**

- Identify suspected terrorist with image recognition via airport cameras
- Use IoT for predictive and preventative airplane maintenance
- Use machine learning to create business moments to proactively push products and services to passengers

**Objects in Review (Detailed)**

- Identify suspected terrorist with image recognition via airport cameras  
Suitability Assessment 2018-05-30 08:17:43 AM Innov
- Use IoT for predictive and preventative airplane maintenance  
Suitability Assessment 2018-05-30 08:19:23 AM Innov
- Use machine learning to create business moments to proactively push products and services to passengers  
Suitability Assessment 2018-05-30 08:18:20 AM Innov

**Reviews**

- Initial Ideas Review
- Suggested Alternatives 2018-05-29 06:35:11 PM Innov
- Architecture Mapping 2018-05-29 06:35:25 PM Innov

*Join a review to create a new topic*

**Discussions**

Create new Discussion

**Identify suspected terrorist with image recognition via airport cameras**  
Requirement «Idea»

**Properties**

**Location**

**Tagged Values**

**Reviews**

- Initial Ideas Review
- Suitability Assessment 2018-05-30 08:17:43 AM Innov Mgr
  - Requires partnership with Homeland Security 2018-05-30 10:16:49 AM VP Terminal Ops
  - Non-trivial information risk management required to protect passenger/worker images 2018-05-30 10:18:34 AM Risk Mgr

Post reply

*Filtered to display the current review only*

Create Review Topic

Review "Initial Ideas Review"

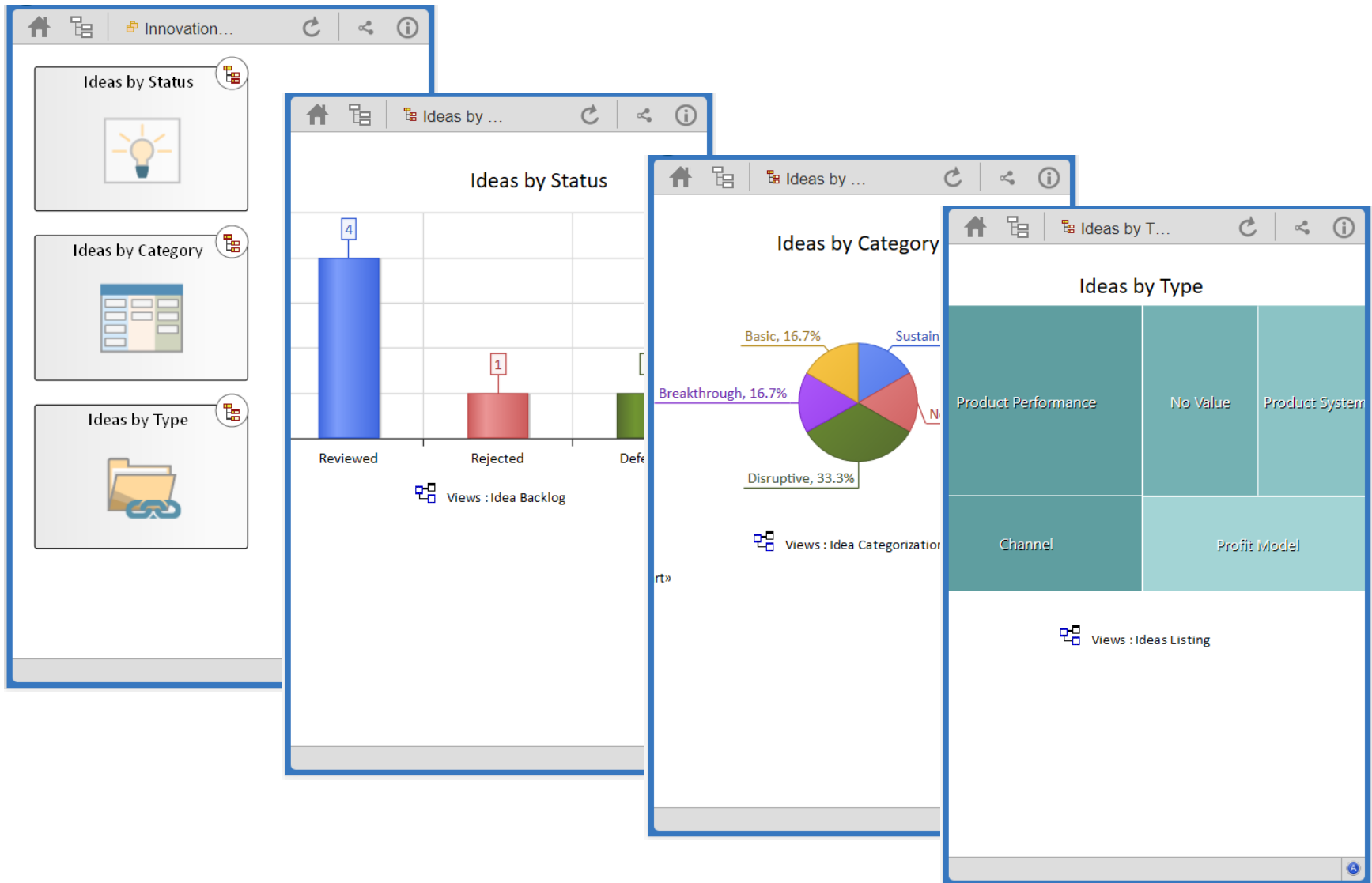
# Assess Ideas – Kanban

Submitted	Reviewed	Withdrawn	Mapped	Investigated					
	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: right; font-size: small;">EA User</p> <p>Monitor passenger gate traffic with trackable boarding passes (RF ID or digital via smartphone)</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: right; font-size: small;">Strategy Mgr</p> <p>Offer expedited security program for prescreened participants based on biometric data (fingerprints and face)</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: right; font-size: small;">VP Terminal Ops</p> <p>Use machine learning to create business moments to proactively push products and services to passengers</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: right; font-size: small;">VP IT</p> <p>Identify suspected terrorist with image recognition via airport cameras</p> </div>								
					Investigated	Deferred	Rejected	Approved	Implemented
						<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: right; font-size: small;">Innov Mgr</p> <p>Expand boarding pass monitoring to entire terminal, not just gates; offer up vendor specials based on preferences</p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: right; font-size: small;">CIO User</p> <p>Use IoT for predictive and preventative airplane maintenance</p> </div>		

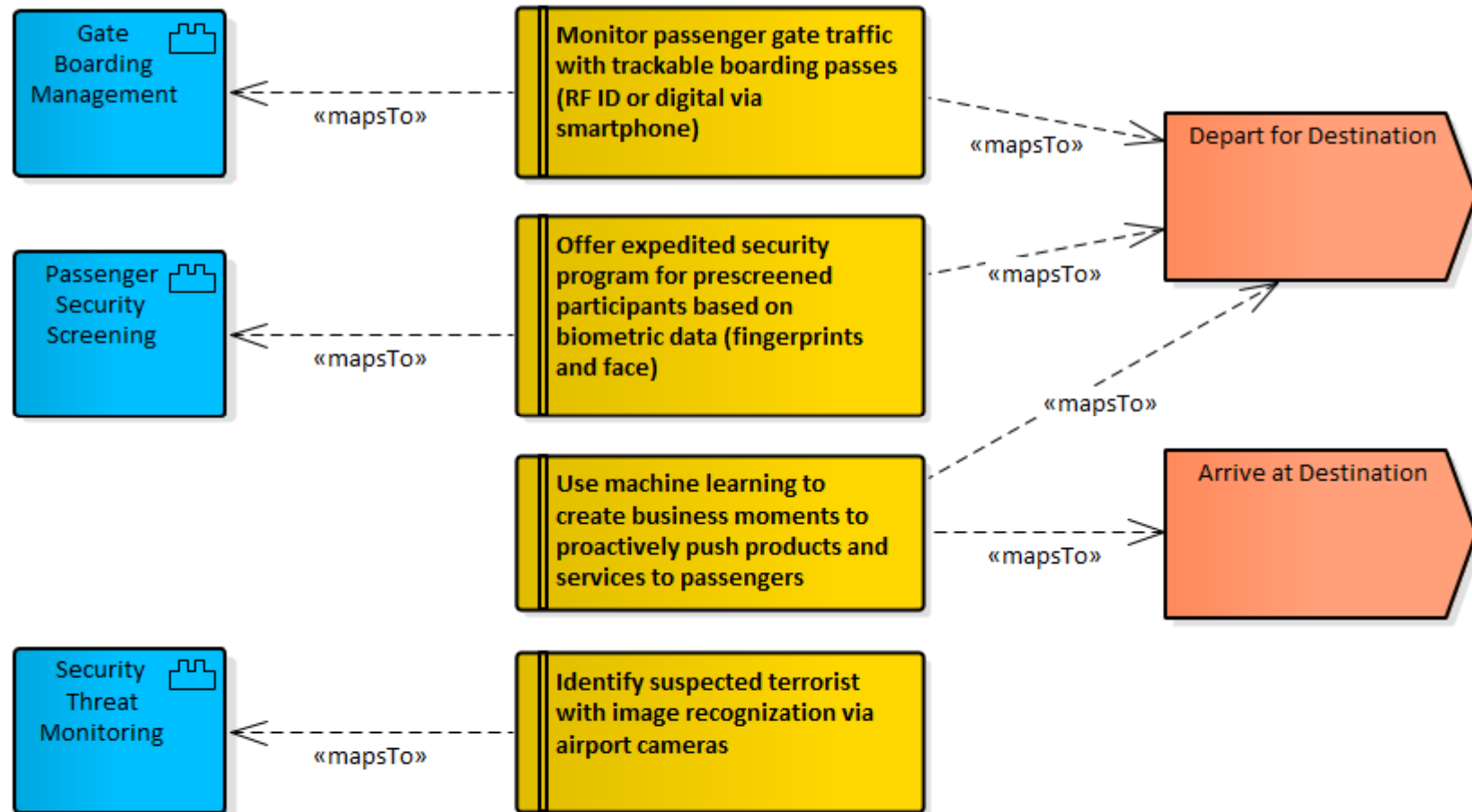
# Categorize Ideas

Not Categorized	Basic	Breakthrough	Disruptive	Sustaining
<p>«Idea» <input type="checkbox"/></p> <p>Use IoT for predictive and preventative airplane maintenance</p> <hr/> <p><i>tags</i></p> <p>Status = Rejected</p>	<p>«Idea» <input type="checkbox"/></p> <p>Use machine learning to create business moments to proactively push products and services to passengers</p> <hr/> <p><i>tags</i></p> <p>Status = Reviewed</p>	<p>«Idea» <input type="checkbox"/></p> <p>Identify suspected terrorist with image recognition via airport cameras</p> <hr/> <p><i>tags</i></p> <p>Status = Reviewed</p>	<p>«Idea» <input type="checkbox"/></p> <p>Expand boarding pass monitoring to entire terminal, not just gates; offer up vendor specials based on preferences</p> <hr/> <p><i>tags</i></p> <p>Status = Deferred</p> <p>«Idea» <input type="checkbox"/></p> <p>Monitor passenger gate traffic with trackable boarding passes (RF ID or digital via smartphone)</p> <hr/> <p><i>tags</i></p> <p>Status = Reviewed</p>	<p>«Idea» <input type="checkbox"/></p> <p>Offer expedited security program for prescreened participants based on biometric data (fingerprints and face)</p> <hr/> <p><i>tags</i></p> <p>Status = Reviewed</p>

# Investigate Ideas

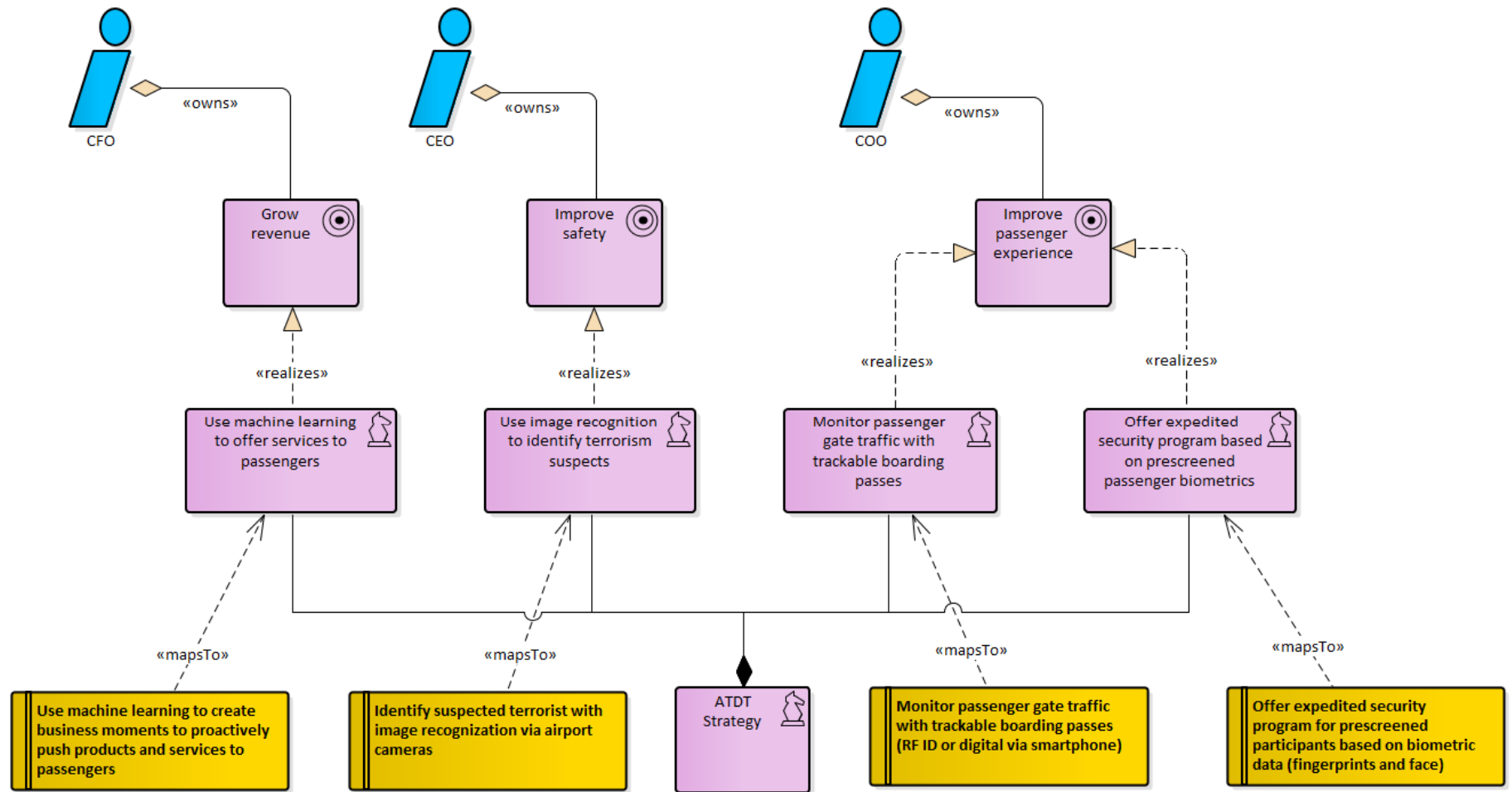


# Cross-Map Ideas to Capabilities & Value Streams





# Cross-Map Ideas to Business Strategies



# Conclusions

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- Innovation management is an emerging tool for exploiting agility and delivering greater value
  - Number of innovation management standards under development
- Innovation management has intersection with various planning and decision-making processes
- Integrate innovation management with business and enterprise architecture to provide
  - Architecture context
  - Platform for assessment, planning, execution, and evaluation

# Q&A



[chris.armstrong@sparxsystems.us](mailto:chris.armstrong@sparxsystems.us)  
<http://www.sparxsystems.us>

***Thanks for your attention  
and participation!***

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