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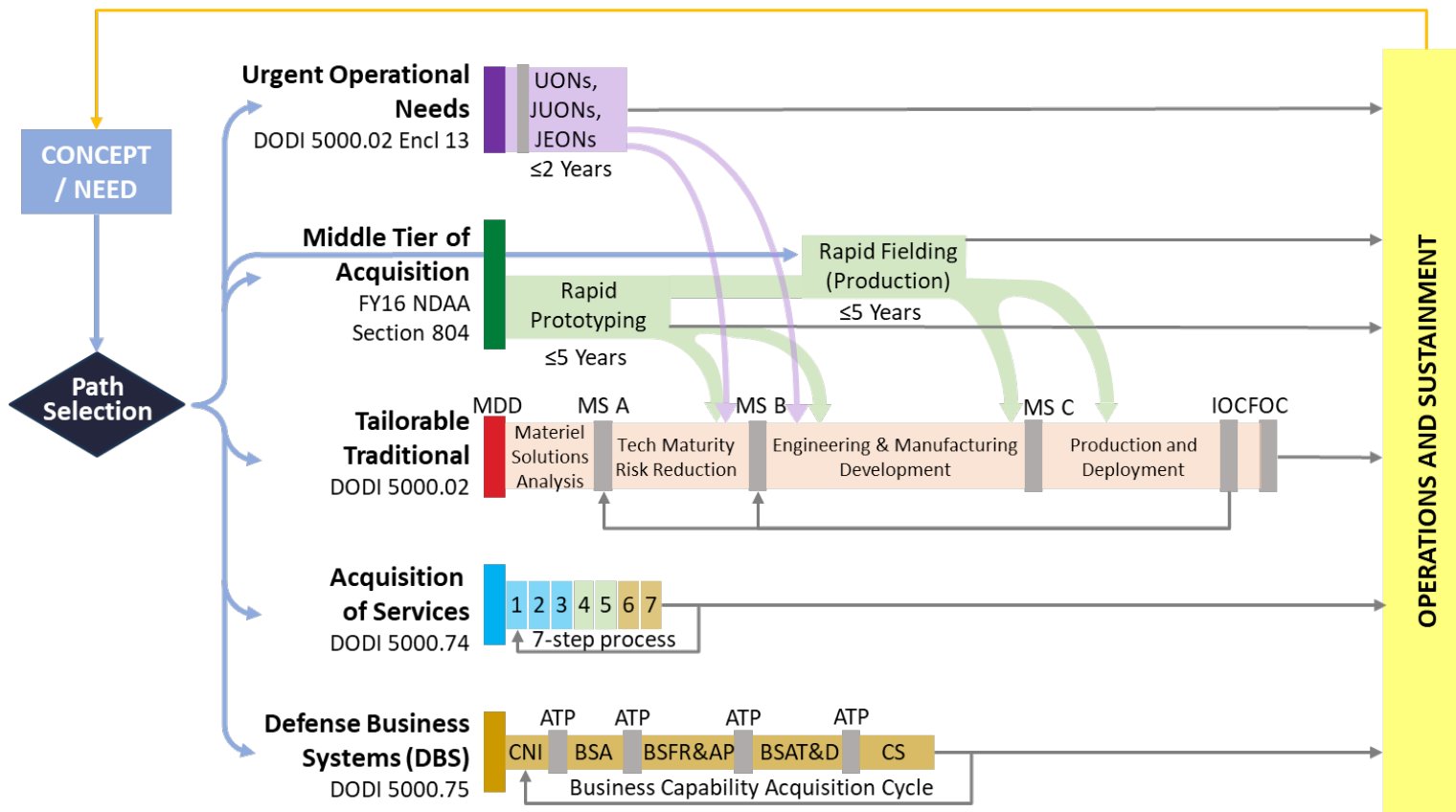
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SE Approach to Acquisition Pathways

Dr. Judith Dahmann



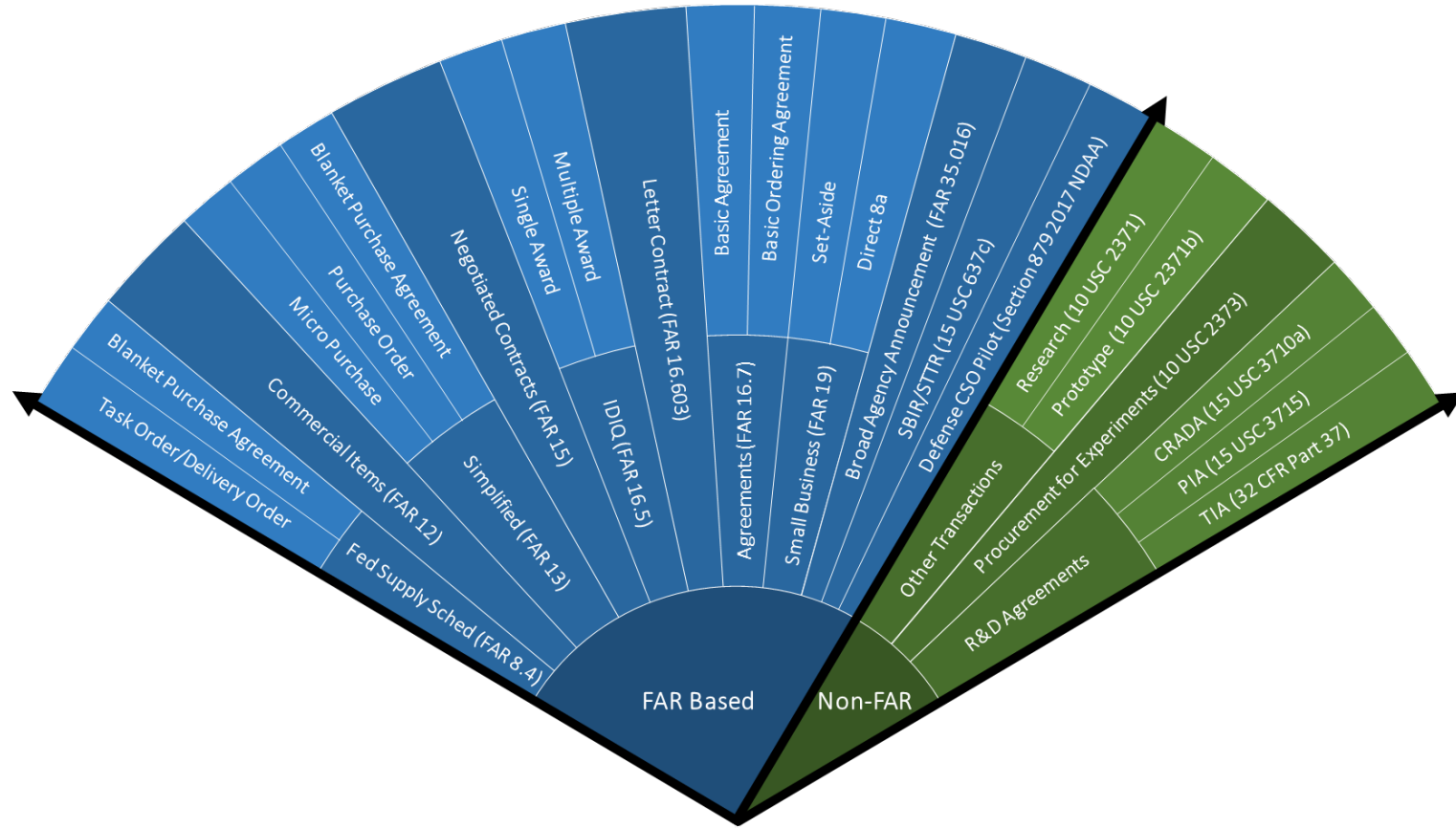
Adaptive Acquisition Framework



There are Many Pathways to Deliver Capabilities

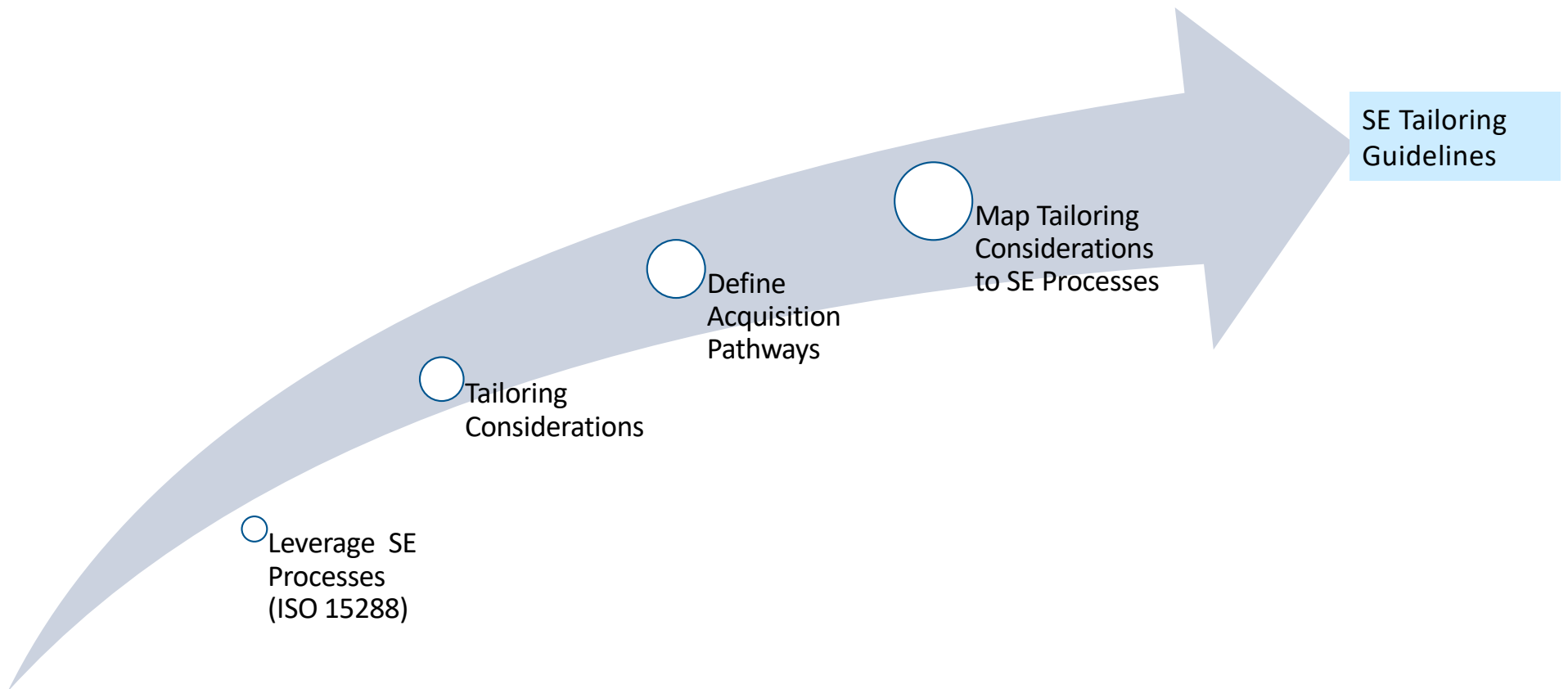


Contract Strategies



An Array of Options for Contracting

Approach to SE Tailoring



Define Appropriate SE Processes

Technical

Business or Mission Analysis
Stakeholder Needs and Requirements
Definition
Architecture Definition
Design Definition
System Analysis
Implementation
Integration
Verification
Transition

Technical Management Processes

Project Planning
Project Assessment and Control
Decision Management
Risk Management
Configuration Management
Information Management
Measurement
Quality Assurance

Reference: ISO/IEEE/IEC 15288

Define Tailoring Considerations

	Key Question	Discuss Impact on SE Process Needs	Cite Sources
Time to deliver	How soon does the product need to be delivered?	Time to delivery may in some cases override certain types of engineering rigor given priority of rapid delivery	3-3 (All Phases)
Understanding of user need	How clearly has user need been described?	Clearly understood user need may override need for detailed stakeholder and requirements processes	3-3 (All Phases)
Complexity of solution	How many components of the product are there that touch users/admins?	The more components that exist the larger V&V necessary; the more components with interfaces, the greater the potential for deployment complexity	Ch 3-2.4.1 MOSA - Defense Acq Guidebook
Understanding of product	How many of the planned interfaces/functions have been employed in a similar context?	A system can be best understood when connected to other systems, especially if inside a SoS.	Ch 3-2.4.2 Modeling and Simulation
Maturity of product	How frequently have these product have been adopted?	Well adopted COTS tools and approaches present an ability for the acquiring organization to focus less on the product and more on the enabling processes	Ch 3-3.1 Life Cycle Expectations
Anticipated length of use	What is the expected retirement date?	The shorter the full lifecycle of the system, the less risk there is in acceleration as well as potential cost. There should be expected plans to replace it.	CH 3-4 DAG. ISO/IEC/IEEE 15288
Willingness to accept risk	What is the highest level of risk (P-I) that can persist based on acquisition strategy?	The higher the level of risk acceptable, the more that	Ch 3-4.1.5

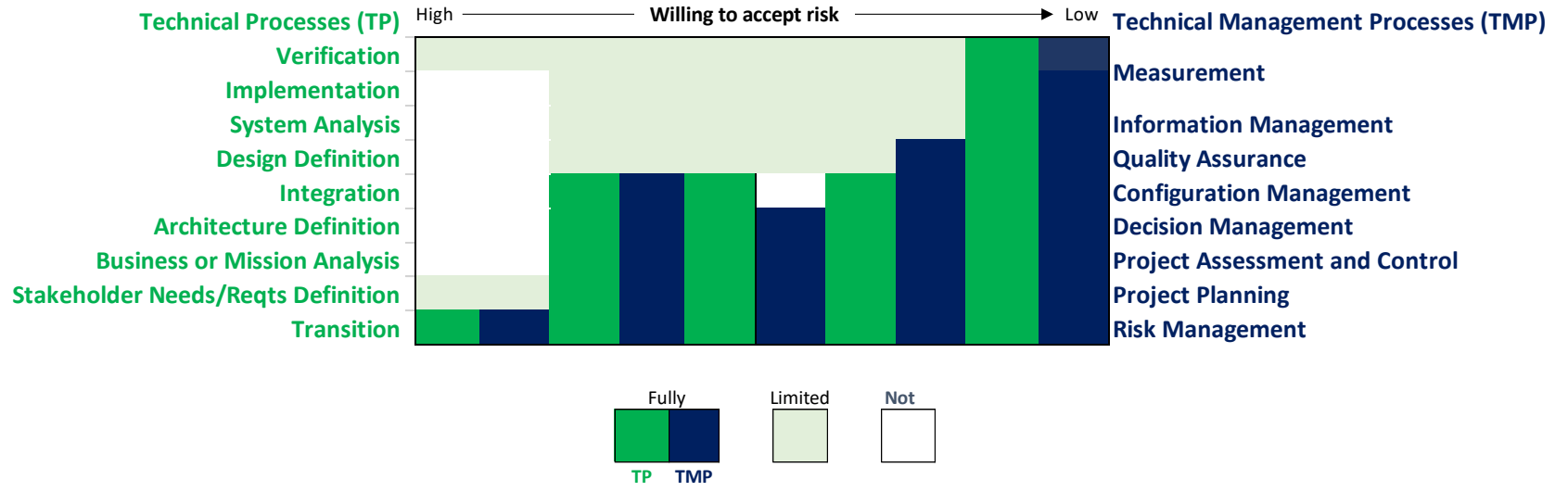
Define Acquisition Modes

	Off-the-Shelf 'Buy' to Meet Urgent Short Term User Need	Middle Tier(Rapid Prototyping and fielding within 6 mo)	Incrementally deployed software intensive program	Hybrid Acquisition Program	Traditional Large Scale New Systems Development Additions to DoD Inventory
Time to deliver	Very short - 1-3 Months	Short- 6 Months	6mo to a year for initial compoent	Multi Year	Unconstrained
Understanding of user need	Clear	Needs some definition through prototyping	Initially limited. Understanding gained through increments	Limited but need expressed in significant detail	Limited
Complexity of context	Understood	Low- must fit within an existing solution set	Medium- Can be used in multiple contexts but mostly well understood	Med/High	High
Understanding of product	Well understood	Has been employed in similar contexts before	Employed in a limited fashion in similar context	Employed in a limited fashion in multiple contexts	Not deployed significantly
Maturity of product	Very High	High- used throughout industry	Low/Medium- Limited adoption by industry	Low	New development
Anticipated length of use	Short	Short/Medium	Medium	Mid-Long Term(or unknown)	Long-term
Willingness to accept risk	High	High	Medium	Medium/Low	Low

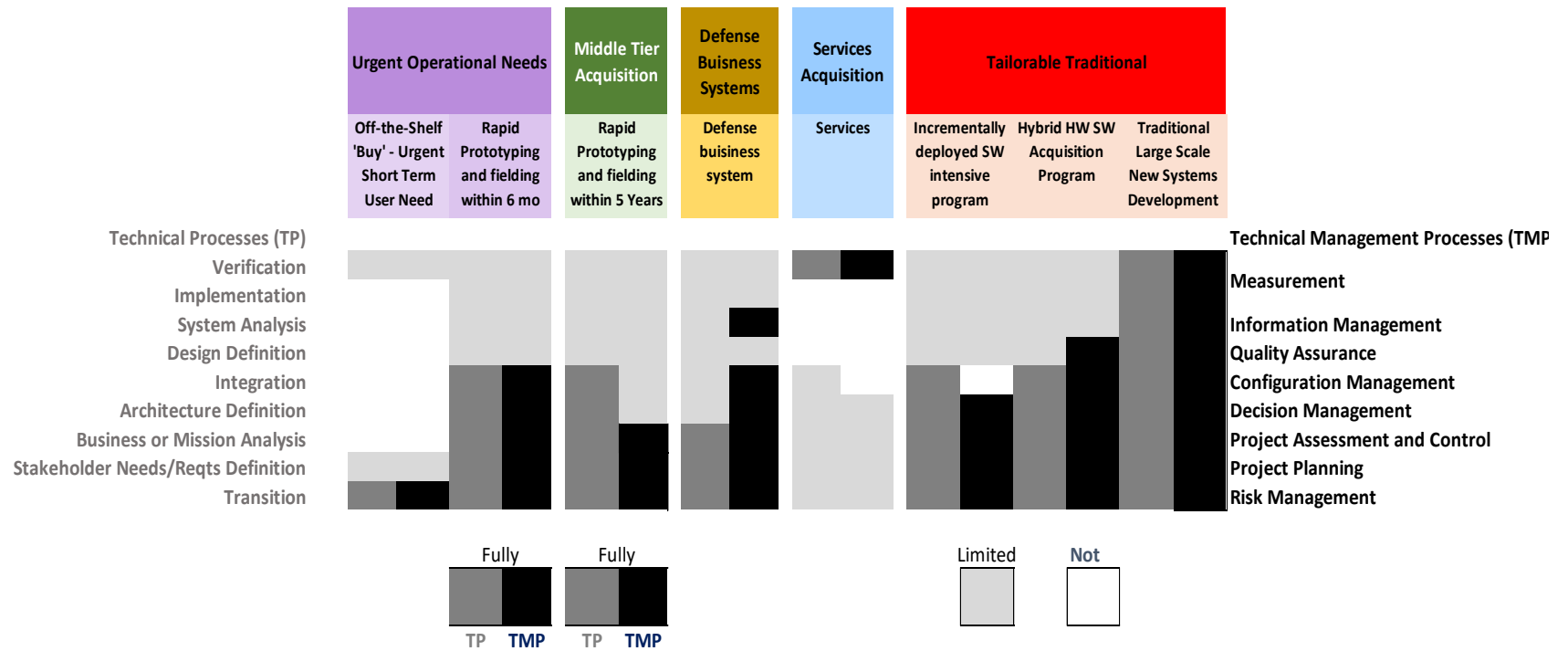
SE Pathways (1 of 3)

1	2	3	4	5
Off-the-Shelf 'Buy' - Urgent Short Term User Need	Rapid Prototyping and fielding within 6 mo	Incrementally deployed SW intensive program	Hybrid HW SW Acquisition Program	Traditional Large Scale New Systems Development

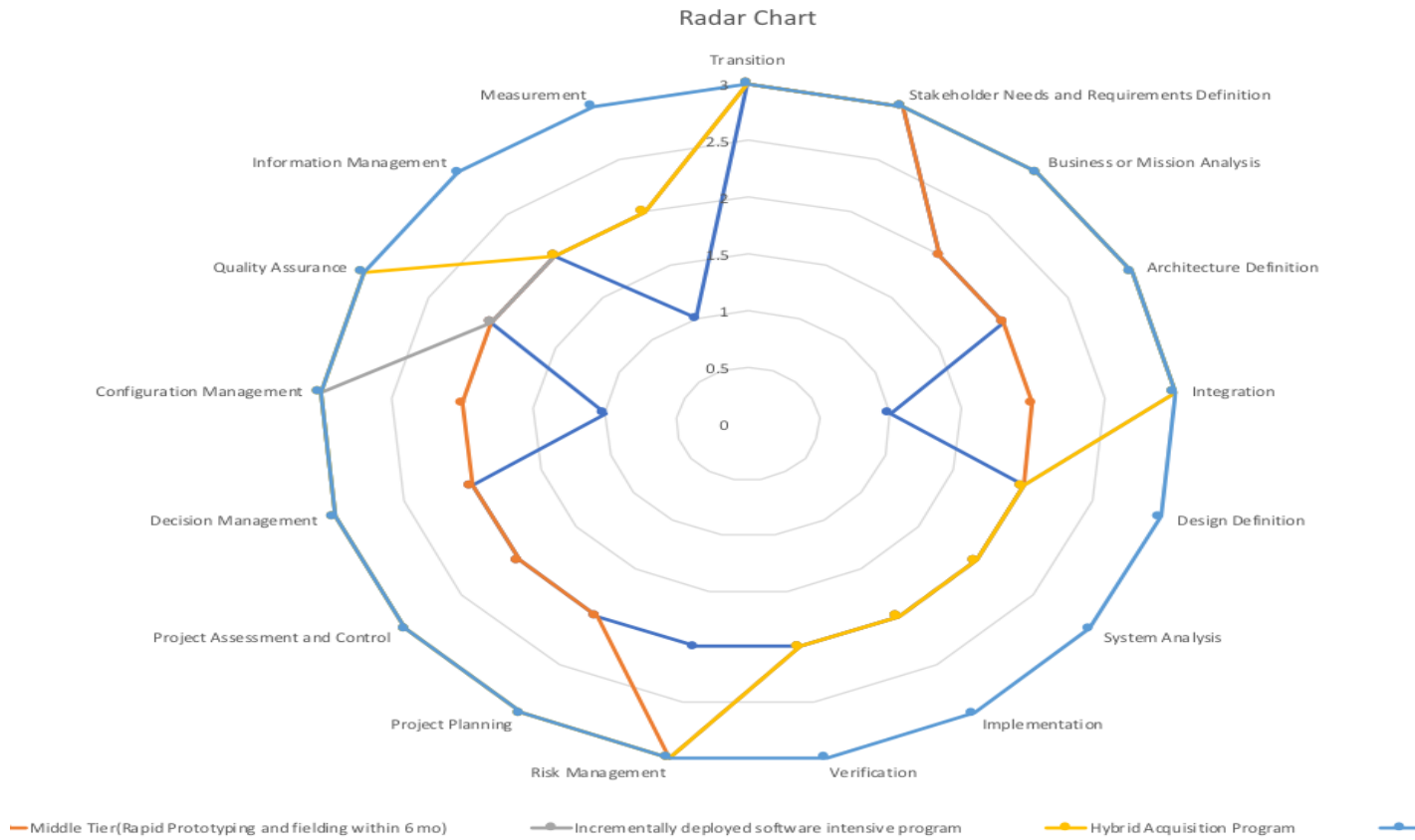
1-3 months —————> **Time to deliver** —————> Unconstrained
 Clear —————> **Understanding of user need** —————> Limited
 Understood —————> **Complexity of context** —————> High
 Well understanding —————> **Understanding of the product** —————> New technology
 Very high —————> **Maturity of the product** —————> New development
 Short —————> **Anticipated length of use** —————> Long-term
 High —————> **Willing to accept risk** —————> Low



SE Pathways (2 of 3)



Another View



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