Sailing in cross currents: setting your course amidst the many current approaches to requirements

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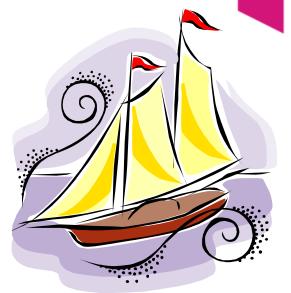
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Abstract



Web development? Manufactured products? Packaged applications? SOA? Agile? System requirements specifications? Use cases? User stories? Faced with the many competing types of projects and approaches to creating and managing requirements, how can you determine which are right for your organization?

This session will survey major approaches, provide a framework to help you assess them, and offer some keys to successful implementation based on years of IBM Rational and Telelogic experience.



In your current project ... which ship are you sailing?





On terminology

For today let's consider all of these "RM"

- Requirements Management
- Requirements Engineering
- Requirements Definition

 Sometime we'll use "practices" to mean "process"

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Why do you need a requirements process? Isn't a requirements tool enough?

- Effective RM is about people and process
- Process is whole-team behavior
- Tools enable and accelerate process



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The Business Environment Determines Project Parameters

- Are you the customer or contractor?
- What are the financial terms?
- Who is responsible for what?





Projects are commissioned to meet business goals Program & Portfolio Management

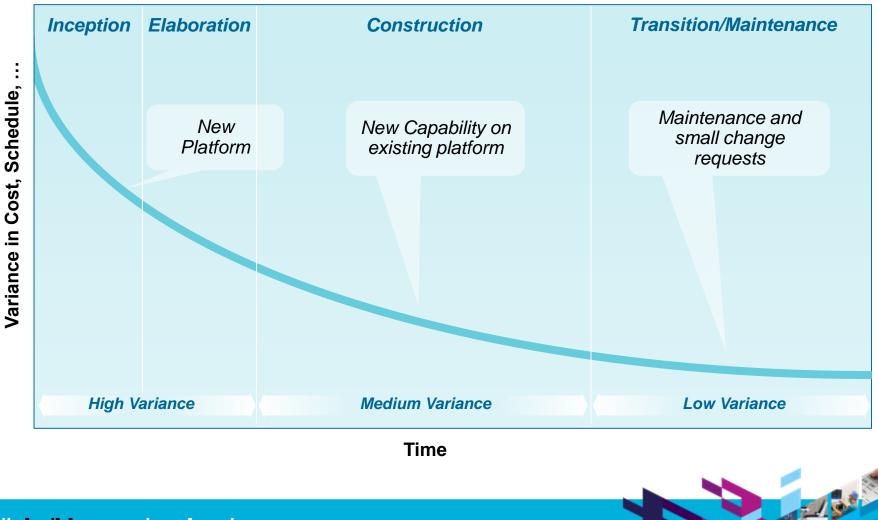
Business strategy **Objectives & priorities Business cases** Project proposals Project selection **Project charters** Vision documents **Requirements identified Project execution**

Project Management



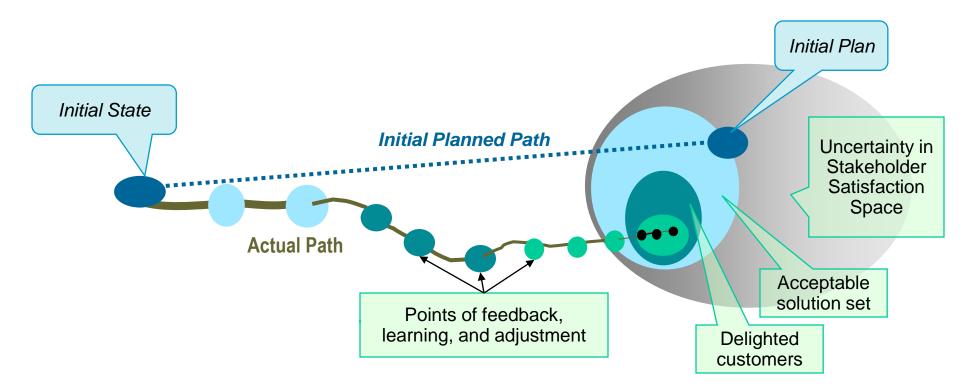
Different projects need different governance

Uncertainty and risk are the key discriminators





Project delivery is an exercise in removing uncertainty

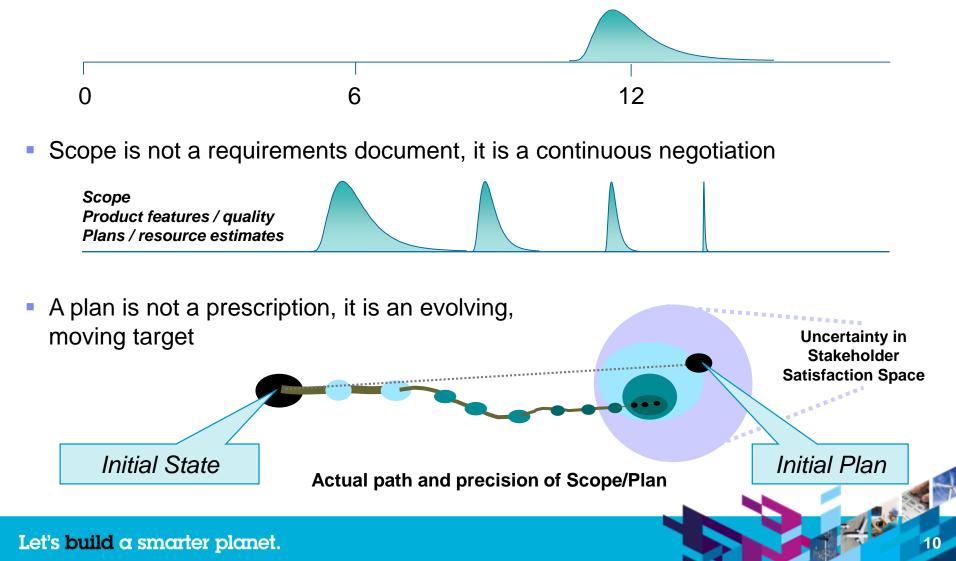


Feedback \rightarrow course corrections \rightarrow better outcomes



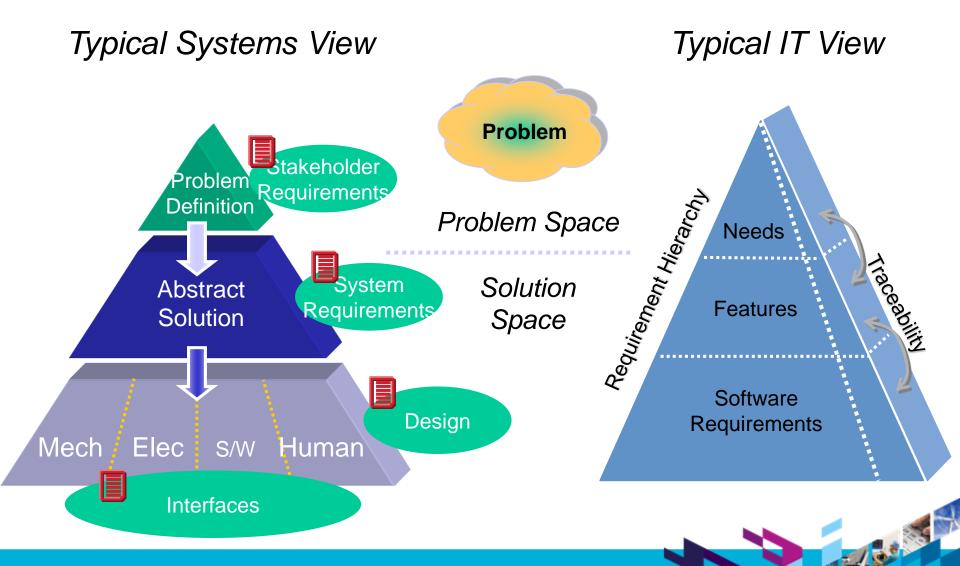
Managing Uncertainty = Managing Variance

• A completion date is not a point in time, it is a probability distribution





Typical Requirements Hierarchy – two views



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Not every requirement is called a requirement

Gaps in Packaged Applications



Capability Gap (military)



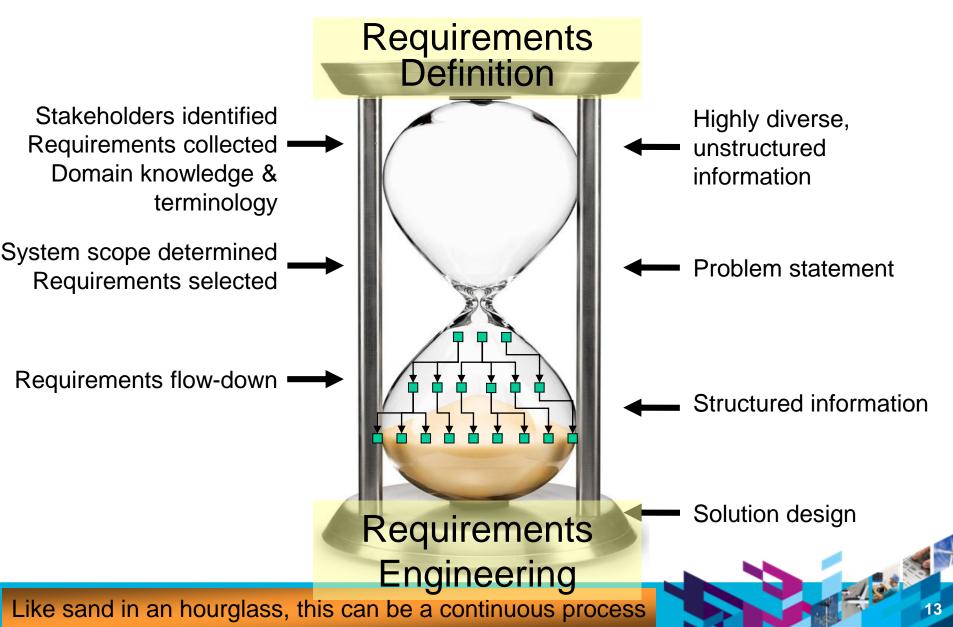


Business Rules



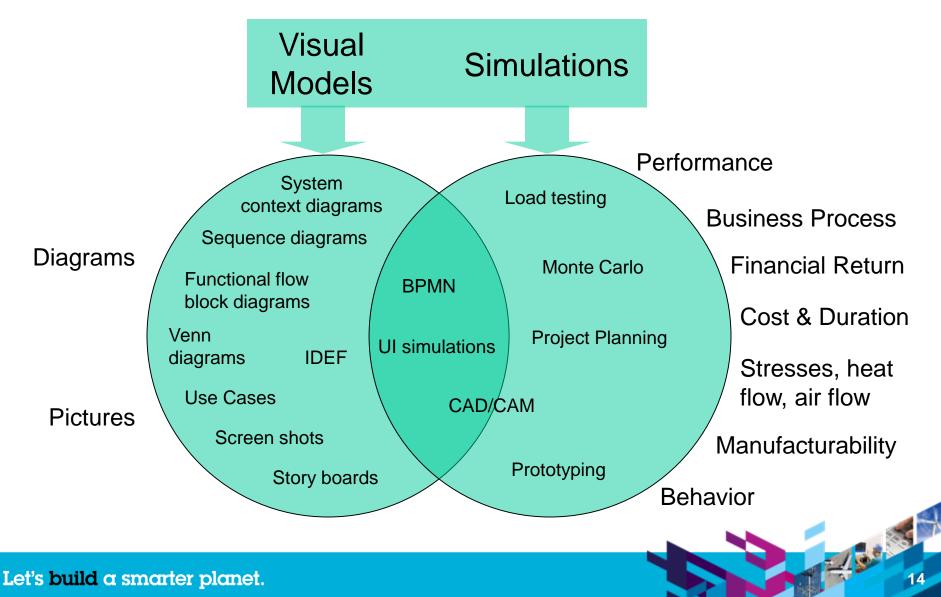


Progressive removal of uncertainty





Models: Low-cost ways to learn early Optimize for learning / adjusting





Economics determine many of the possible optimizations

Optimize for learning and adjusting as much as possible within your constraints

- What can you optimize?
- What are the underlying economics?
 - Value of being fast-to-market
 - Cost of failure
 - Cost of change
 - Cost of communication
 - Cost of non-compliance
 - Cost of design and manufacture





Industry patterns reveal optimized groupings

- Unique industry characteristics
 - Government / private
 - Manufactured systems / IT
- Patterns are reflected in culture



Project have various cultures

Group	Requirements Focus
Engineering & Compliance culture Good outcomes are the result of good, controlled processes. "Have we missed anything?"	 RM in an engineering process Formal process Manufactured systems Mission-critical systems Regulated, compliance, and contract-driven industries
Market-driven culture Balance process and expedience. "How can we get this out faster with good quality?"	Effective teams, efficient tools Business-oriented software applications Fast-to-market manufacturers
ALM minimalist culture "We use our main tools for requirements too"	Use development and test tools Requirements by and for dev and test Typically business analysts are not involved
Ad-hoc culture <i>"What is RM?"</i> <i>"We don't do RM"</i> <i>"We get by with office docs"</i> Let's build a smarter planet.	 Using general-purpose tools at hand May employ some RM, "pure agile" methodologies or no defined methodology at all

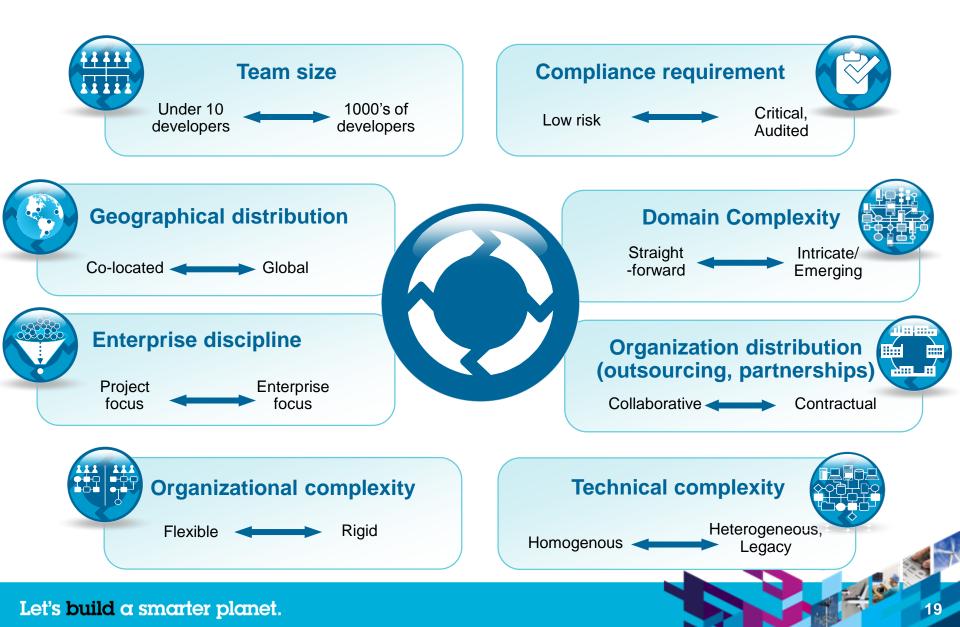


Management Techniques in Organization Culture (extract)

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Base	Technique	Engineering -	Market-	ALM	Ad hoc	
Lifecycle		Compliance	driven	minimalist		
Waterfall	BDUF	Y				
	Complete stages	Y				
	Single release	Y				
	Complete plan	Y			Plan, what plan?	
Incremental	BDUF	Y				
	Parallel implementation	Y	Y	Y		
	Early release		Y	Y		
Iterative / Evolutionary	Large-scale iteration	Y	Y			
	Plan complete at high level	Y	Y			
	Cost-benefit driven	Y	Y	Y		
	Value at every release		Y	Y		
	Each release "complete"		Y	Y		
	Small releases		?	Y	Y	
	Just enough planning		Y	Y		
Agile	User stories		Y	Y	Y	
	Time-boxing		Y	Y		
	Test-driven		Y	Y		
	Work-item list		Y	Y	Y	
Common	Evaluate against plan	Y	Y	Y		
	Compliance-checking	Y	?			
	Feedback	Y	Y	Y	Y	
	Consistency check	Y	Y	Y		

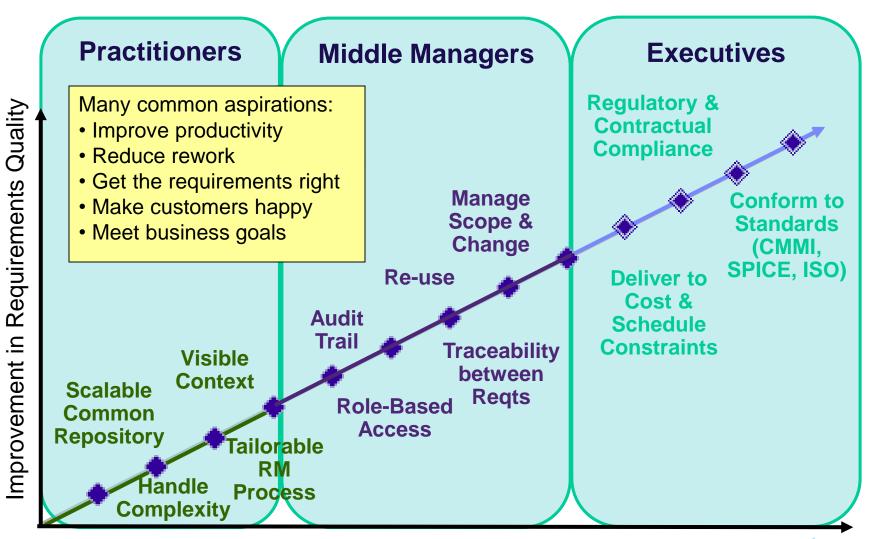


Consider other constraints – Example: IBM agility@scale[™]



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Value to stakeholders should determine RM priorities



Increased use of Requirements Management Good Practices

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The RN Vision Leeberg



Buying RM Tool Process Definition Enterprise Tool Deployment Tiered Support Tailoring omoting Adoption Traini Metrics



People impose significant constraints

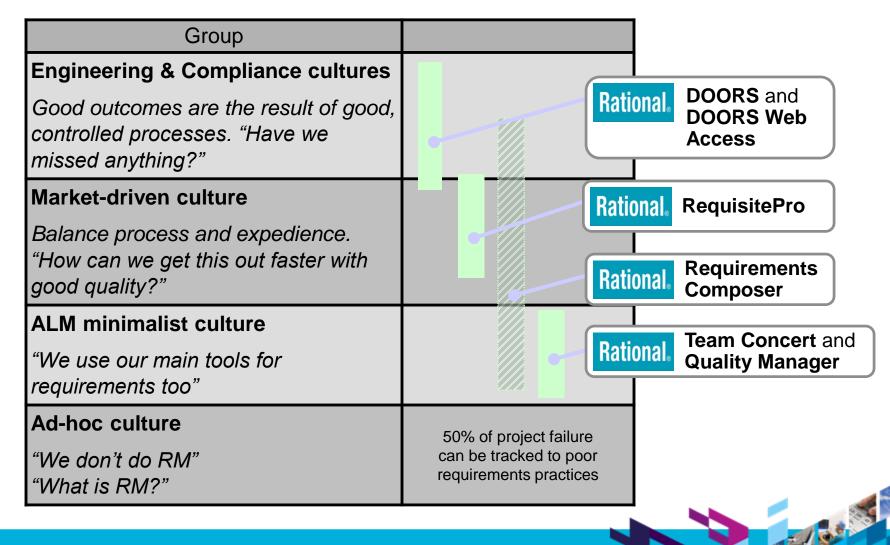
And in one company there are many project team cultures





Rational RM portfolio today

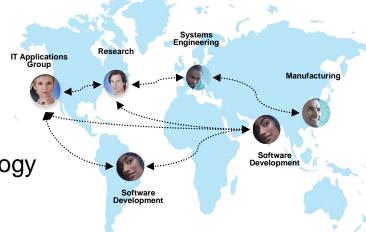
Addressing different cultures and different needs



Summary

An effective requirements process will ...

- Fit the business environment and project methodology
- Recognize where there is scope for optimization (and where there isn't)
- Recognize (and reduce) the degree of uncertainty in the solution throughout the project lifecycle
- Be adaptable ... not "one size fits all teams"
- Be well communicated, understood, and followed
- Be relevant to the entire project lifecycle
- Include measurement, reflection and continuous improvement
- Be supported by (embodied in) tools









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