

REQUIREMENTS ELICITATION AND DOCUMENTATION – RELATION TO BUSINESS CONTEXT

by

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Outline

Definitions

- ④ Four Types of Companies
- ④ Tips for Success
- ④ Summary

“Standard” Definitions

- ⦿ Requirements Engineering: The Organized Process of
 - ⦿ Determining the Stakeholder Needs
 - ⦿ Pruning/Aligning those Needs with Corporate Goals
 - ⦿ Documenting the Resulting External Behaviors
- ⦿ Requirements Elicitation: Determining the Needs of the Stakeholders
 - ⦿ Requirements Documentation: Documenting the Resulting External Behaviors

And Yet

- ⦿ Few People Agree on What

- ⦿ Requirements Elicitation Is in Practice

- ⦿ Requirements Documentation is in Practice

- ⦿ WHY?

Outline

- ⦿ Definitions

-  Four Types of Companies

- ⦿ Tips for Success

- ⦿ Summary

What is Requirements Elicitation and Documentation?

- It Depends Entirely on the Type of Company *and* Where You Are in the Company

	Marketing	System Engineer	SW Engineer
Custom (-ized) SW for "Single" Customer (incl outsource house)			
SW for Mass Market, (incl SaaS & pkged SW)			
Custom (-ized) Embedded Systems for "Single" Customer			
Embedded Systems for Mass Market			

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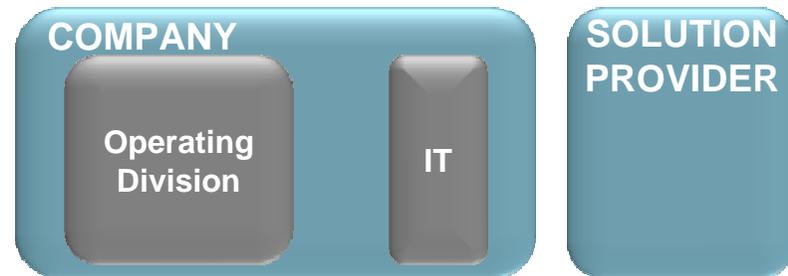
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Characteristics

- ⦿ The “simplest” of the alternatives
- ⦿ The individual(s) demanding requirements are clearly identified
 - ⦿ Their knowledge of their own needs may be wrong but at least we know who they are

Three Basic Kinds

- Company needs SW for use in-house and plans to build a solution in house using their own “IT Resources” (This is the “classic” RE problem from the 1970’s)
- Company needs SW for use in-house and outsources the development of the solution to an independent company
- Company wants to sell product but wants to outsource development of part of it to an independent company



Let's Talk About Roles and Challenges in All 3 Cases (1 of 3)

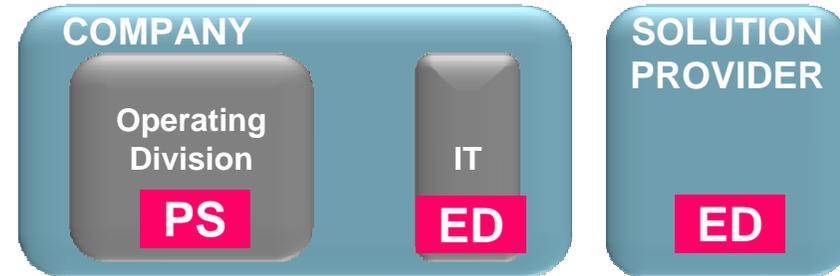
- Company needs SW for use in-house and plans to build a solution in house using their own "IT Resources" (This is the "classic" RE problem from the 1970's)



- Who has the problem/need/pain? **P**
 - The operating division of the company
- Who will "speak" for them? **S**
 - The operating division of the company (that's good!)
- Who will "do" elicitation? **E**
 - Most likely "analysts" in the IT Division
- Who will document requirements? **D**
 - Most likely "analysts" in the IT Division
 - Biggest challenges
 - Different "languages"
- Biggest advantages
 - Aligned cultures

Let's Talk About Roles and Challenges in All 3 Cases (2 of 3)

- Company needs SW for use in-house and outsources the development of the solution to an independent company



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- Who will “do” elicitation? **E**
 - Most likely “analysts” in the IT Division, but could be solution provider
- Who will document requirements? **D**
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 - Biggest challenges
 - Different cultures, goals, styles
 - Biggest advantages
 - Lets company focus on core competencies

Let's Talk About Roles and Challenges in All 3 Cases (3 of 3)

- Company wants to sell product but wants to outsource development of part of it to an independent company



- Who has the problem/need/pain? **P**
 - The target customer of the company
- Who will “speak” for them? **S**
 - The marketing division of the company
- Who will “do” elicitation? **E**
 - Marketing performs market research; solution provider performs elicitation
- Who will document requirements? **D**
 - Most likely solution provider
 - Biggest challenges
 - Different cultures, goals, styles
 - Elusive, changing customer/market needs
 - Mismatch of P and S

Note: This is custom development, not mass market!

- Biggest advantages
 - Lets company focus on core competencies

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Characteristics

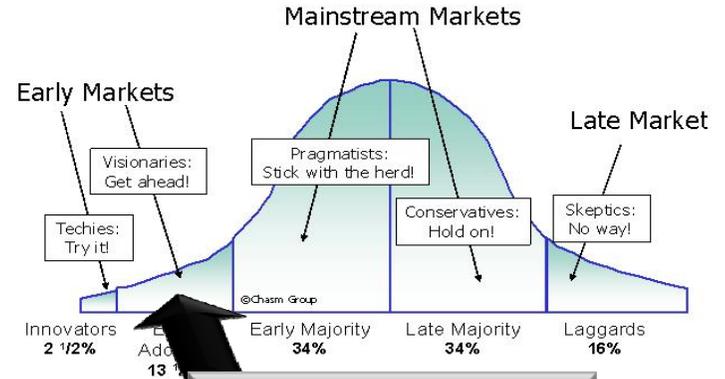
- ⦿ The result of the commoditization of software in the 1990's
- ⦿ Has same problem that all mass-market products have
 - ⦿ Need to target specific markets
 - ⦿ Need to differentiate

Two Basic Kinds

- Totally Innovative SW Products
 - Entirely New (Differentiation)
 - New Ways to Segment Market
 - and
 - Same or Higher Priced
 - Examples
 - Entirely new genres of software games
 - New simulators
 - Animation
 - New Education Mechanisms for Children . . .

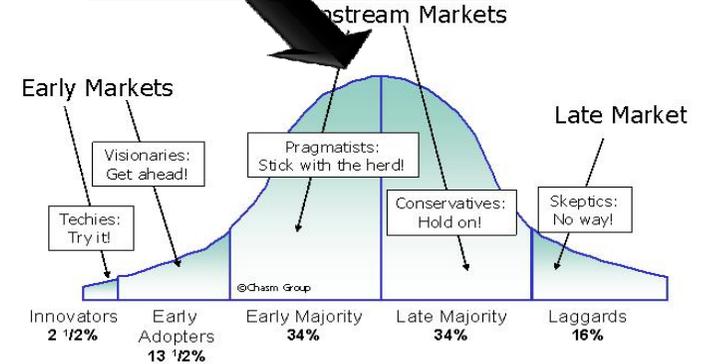
- Incrementally Better Products
 - Better Features
 - and/or
 - Lower Priced

- And this Affects Requirements

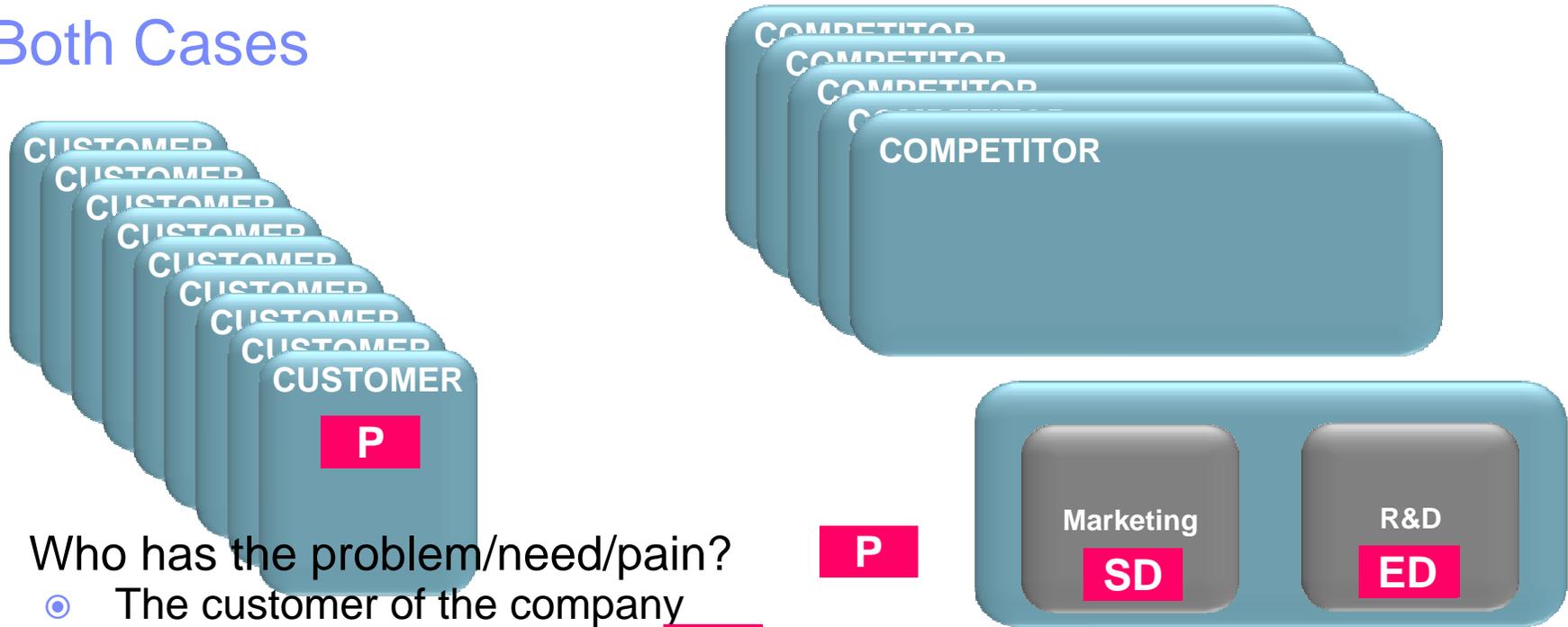


These products (or services) force us back to earlier stages

Keep us in current stages



In Both Cases



- Who has the problem/need/pain?
 - The customer of the company
- Who will “speak” for them? **S**
 - The marketing division of the company
- Who will “do” elicitation? **E**
 - Most likely “analysts” in the R&D Division
- Who will document requirements? **D**
 - Marketing documents general reqts; R&D documents specific reqts
 - Biggest challenges
 - Mismatch of P and S
 - Constant iteration of target sub-segment, beta, reqts, revenues
 - Elusive, changing customer/market needs

Some Differences Between Two Cases

⦿ Totally Innovative Software Products

- ⦿ These types of products are very rare
- ⦿ Origin of requirements: often a combination of R&D and marketing
- ⦿ Google is rare example of established company that proves the exception
- ⦿ Validation of new requirements: surveys, SMEs, lab tests, Pepsi challenge, not QFD

⦿ Incrementally Better Products

- ⦿ These represent most software products
- ⦿ Origin of requirements: sales, marketing, channels, lost sales reports, competitor analyses
- ⦿ Validation of new requirements: surveys, SMEs, lab tests, Pepsi challenge, not QFD

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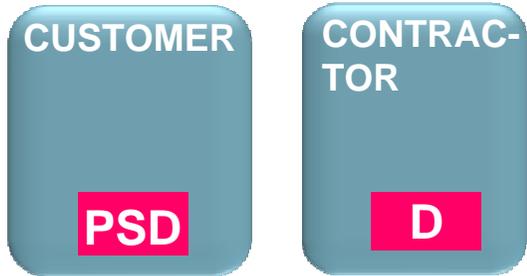
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Most Common Scenario

- ⦿ Client describes unique problem and environment in a RFP or RFQ
- ⦿ Solution provider writes proposal describing proposed solution

The Situation



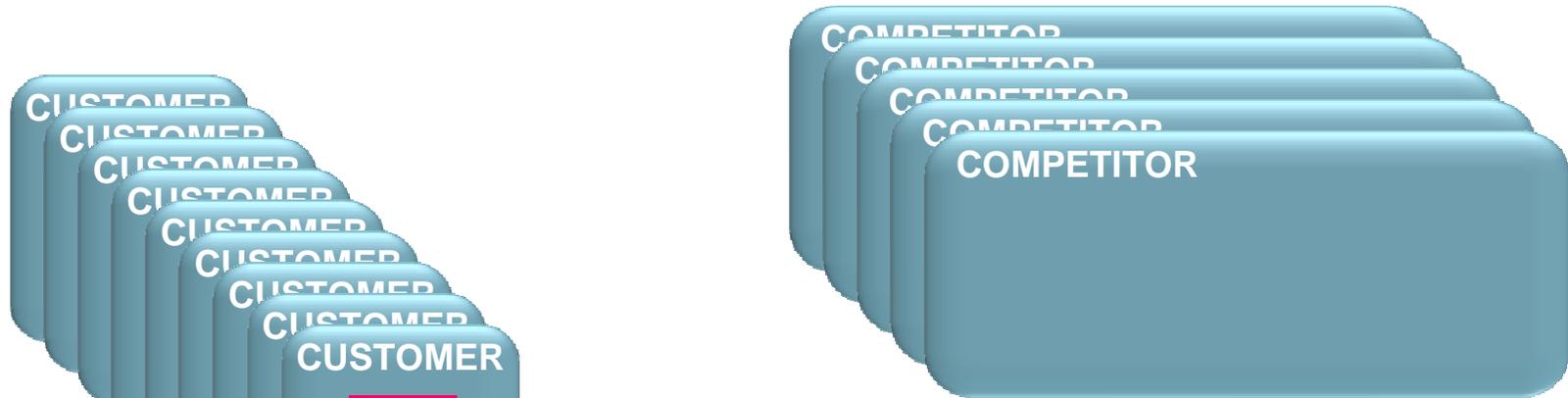
- Who has the problem/need/pain? P
 - The customer
- Who will “speak” for them? S
 - The customer
- Who will “do” elicitation? E
 - Not sure what elicitation is in this case; proposal process so formalized
- Who will document requirements? D
 - RFP documents general reqts; contractor documents specific reqts
 - Biggest challenges
 - Complexity of system of systems
 - Complexity of “customer”
 - Elusive, changing customer needs

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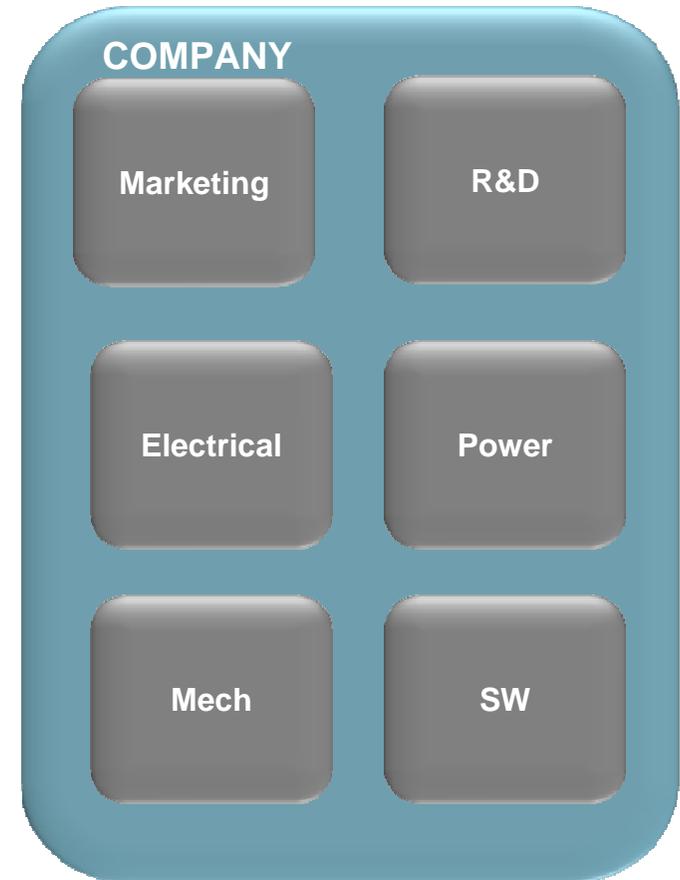
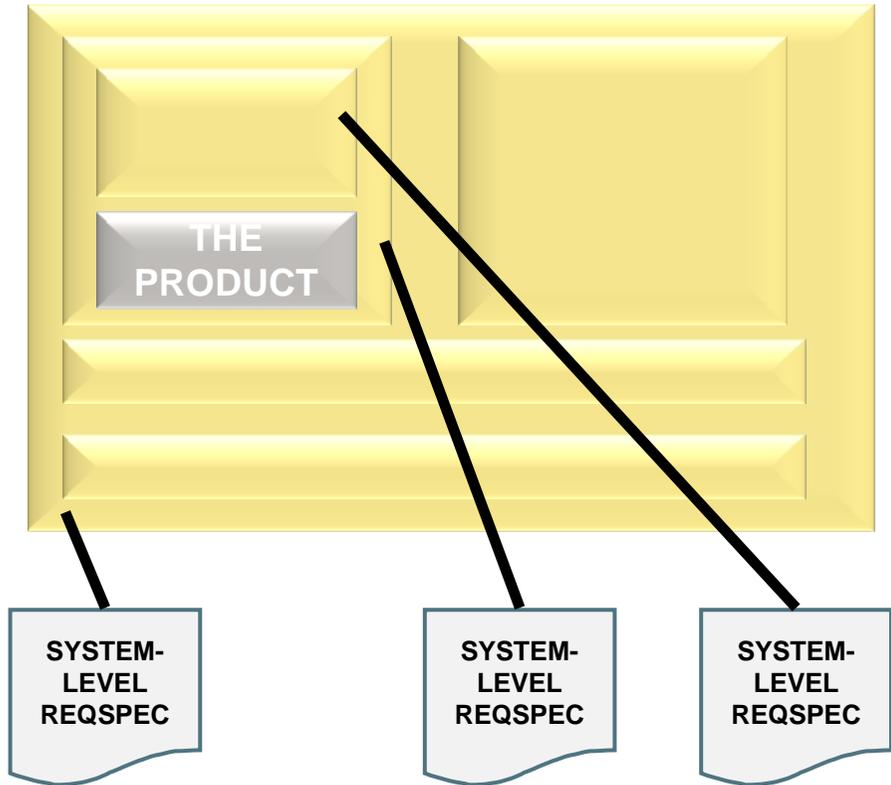
The Situation is Worst of Last Two



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The Situation is Worst of Last Two



- More Challenges
 - Complexity & Flux of Related Systems
 - SW, HW, mechanical, etc, interfaces

Outline

- ⦿ Definitions
- ⦿ Four Types of Companies
-  Tips for Success
- ⦿ Summary

Tips for Requirements Elicitation and Documentation

- ⦿ There are *No Silver Bullets*
 - ⦿ No Magic Answers
 - ⦿ No Magic Tools
 - ⦿ No Magic Methods
- ⦿ There is Good Advice/Guidance to Follow
 - ⦿ In All Cases: Understanding and Thinking is Better than Following the Advice/Guidance!
- ⦿ The Four Types of Development Create Very Different Situation
- ⦿ Often Reqts Advice Inseparable from Product Development Advice

Advice/Guidance for Reqts Elicitation and Documentation

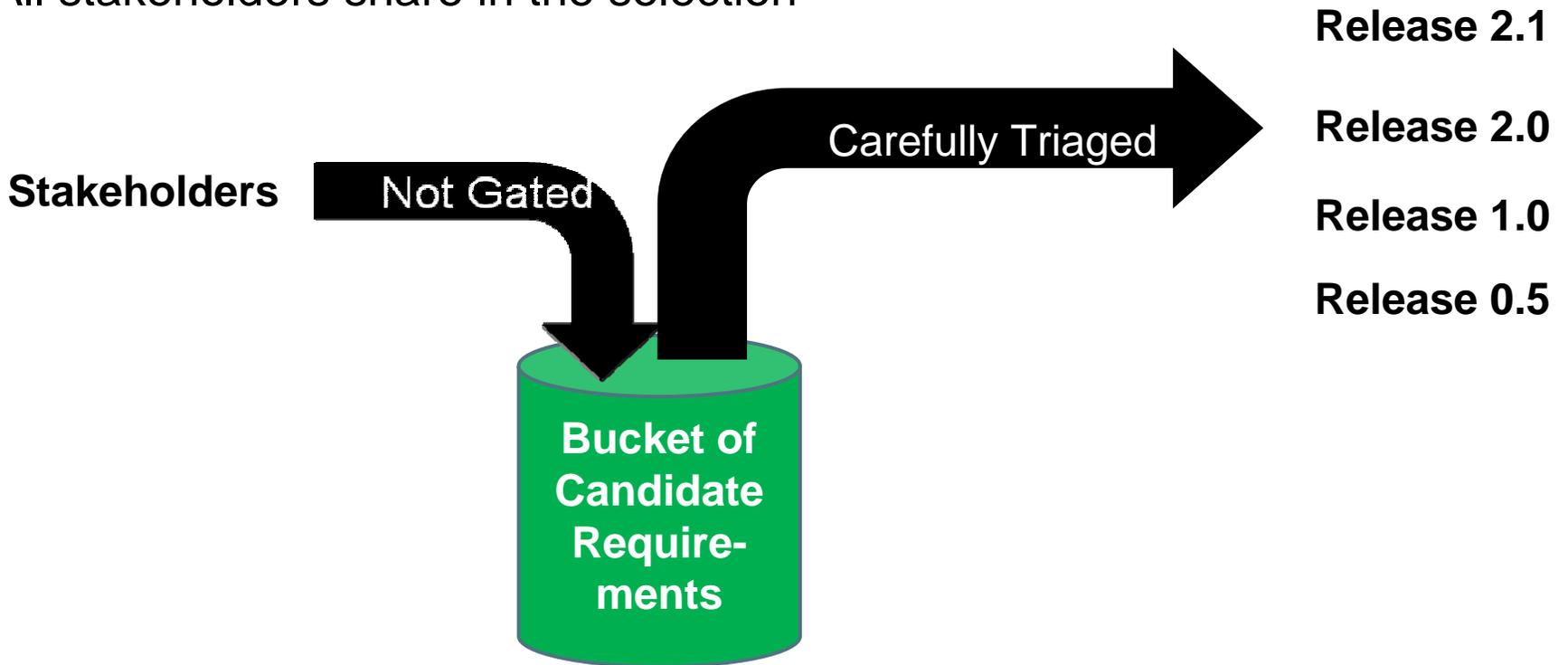
- ⦿ Build Simple Products Before Complex Ones (for mass market)
- ⦿ Build in Small Iterations
- ⦿ Maintain Requirements Backlog
- ⦿ Requirements Selection and Marketing are Inseparable, e.g., positioning, segmenting, pain identification, pricing, differentiation (for mass market)
- ⦿ Documenting Very Different Based on Size of Company (for mass market)

Build Simple Products Before Complex Ones (for mass market)

- Tell Omni-Vista story

Maintain Requirements Backlog

- Always “accept” new requirements (from marketing or customer)
- Keys to it working
 - Communication
 - All stakeholders share in the selection



Reqs Selection & Marketing are Inseparable,
e.g.,
positioning, segmenting, pain id, pricing,
differentiation (for mass market)

Documenting Very Different Based on Size of Company (for mass market)

⦿ Small (Start-Up) Mass Market Companies

- ⦿ Just Flags in the Bucket of Candidate Reqt's
- ⦿ Changes Based on New Market Insights or Strategic Direction
 - ⦿ Not on Whims
- ⦿ (Small) Marketing Team Intimately Familiar w/Contents
- ⦿ (Small) Development Team Intimately Familiar w/Contents

⦿ As Company Gets Larger, More Formality Necessary

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Summary

- ⦿ Requirements Elicitation and Requirements Documentation Vary Widely By
 - ⦿ Type of Industry
 - ⦿ Size of Company
 - ⦿ Role You are Playing

A Requirements Process

