

# Watermark Learning

Technical skills for business

Watermark is a PMI Global Registered Education Provider

## Prepare for Six Sigma by Honing Your Process Analysis Skills

**PMI La Crosse**

**September 22, 2005**

Richard Larson, PMP



# Watermark at a Glance

- Established in 1992 in Minneapolis
- Offering a broad range of skill development programs:
  - Project Management Training
  - Business Requirements Analysis Training
  - Process Management Training
  - Speaking and Publications
- Our training blends a practical approach, industry best practices, and an engaging experience.
- Numerous clients in many industries, including insurance, financial, retail, manufacturing, and government.
- A PMI® Global Registered Education Provider since inception of program.
- An IIBA International Sponsor.
- Offering BA and PM Masters Certificate programs through Auburn University.



# Overview

- Why Six Sigma?
- Why Process Analysis?

# Overview

- Challenges of working with processes
- How Six Sigma meets the challenge
- Analysis tools and techniques that work with Six Sigma or any other approach.

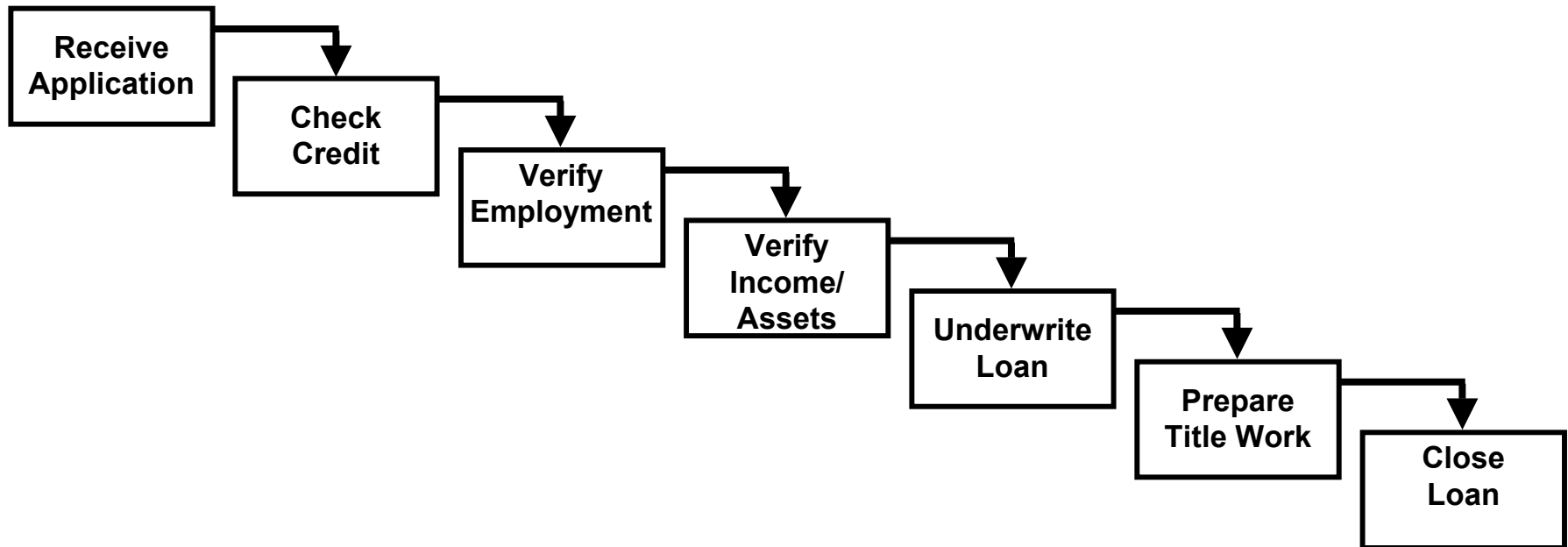
# Objectives

- Describe what Six Sigma does and what its benefits are.
- List and define the steps in the DMAIC methodology - Define, Measure, Analyze, Improve, and Control.
- Describe some tools used in doing process analysis, and will be useful in a Six Sigma project.

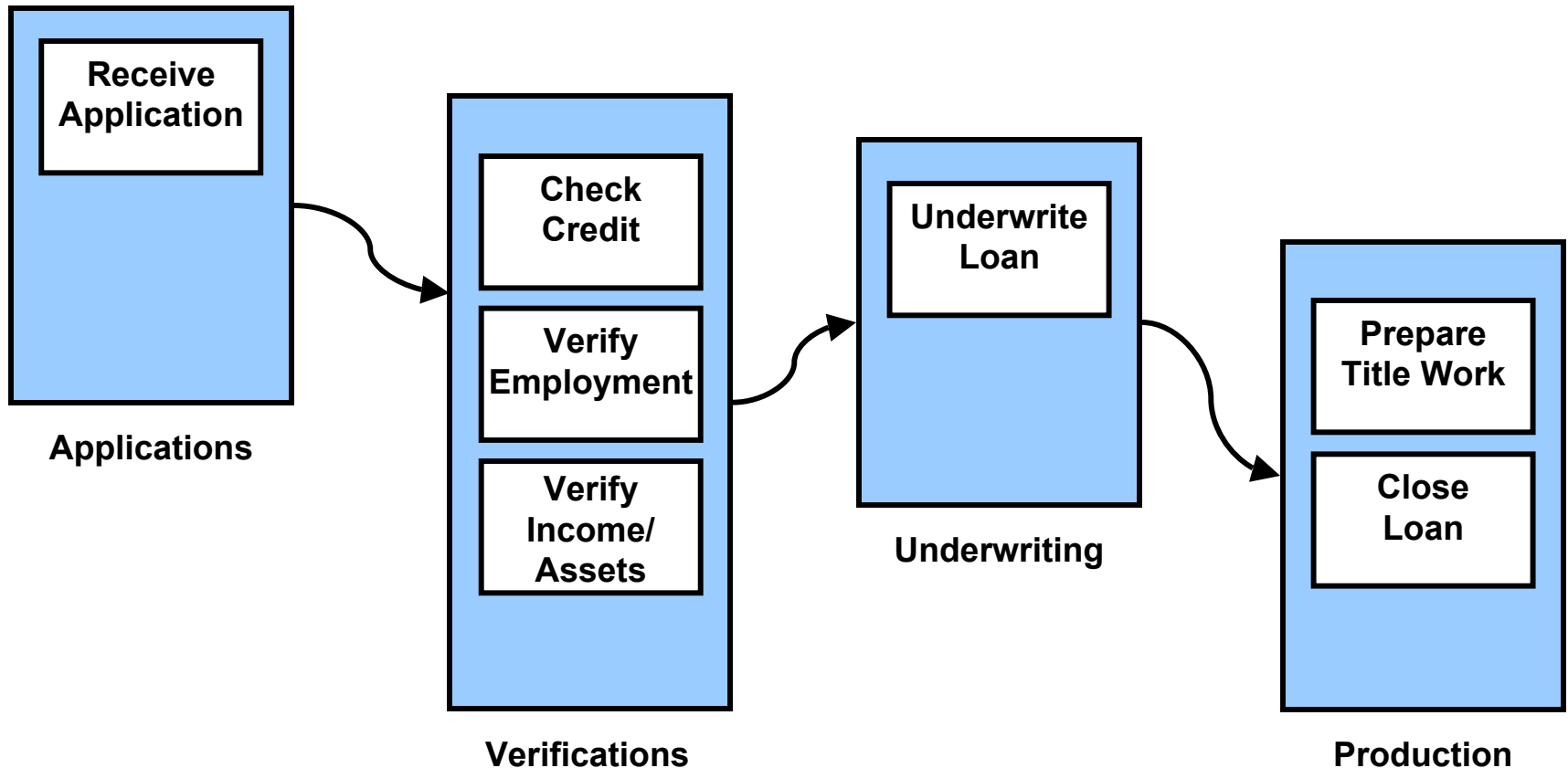
# Challenges

- Process boundaries “fuzzy”
- Process owners hidden or non-existent
- Functional divisions within organizations
- Disagreements about the “best” process
- Inefficiency vs. Inertia.

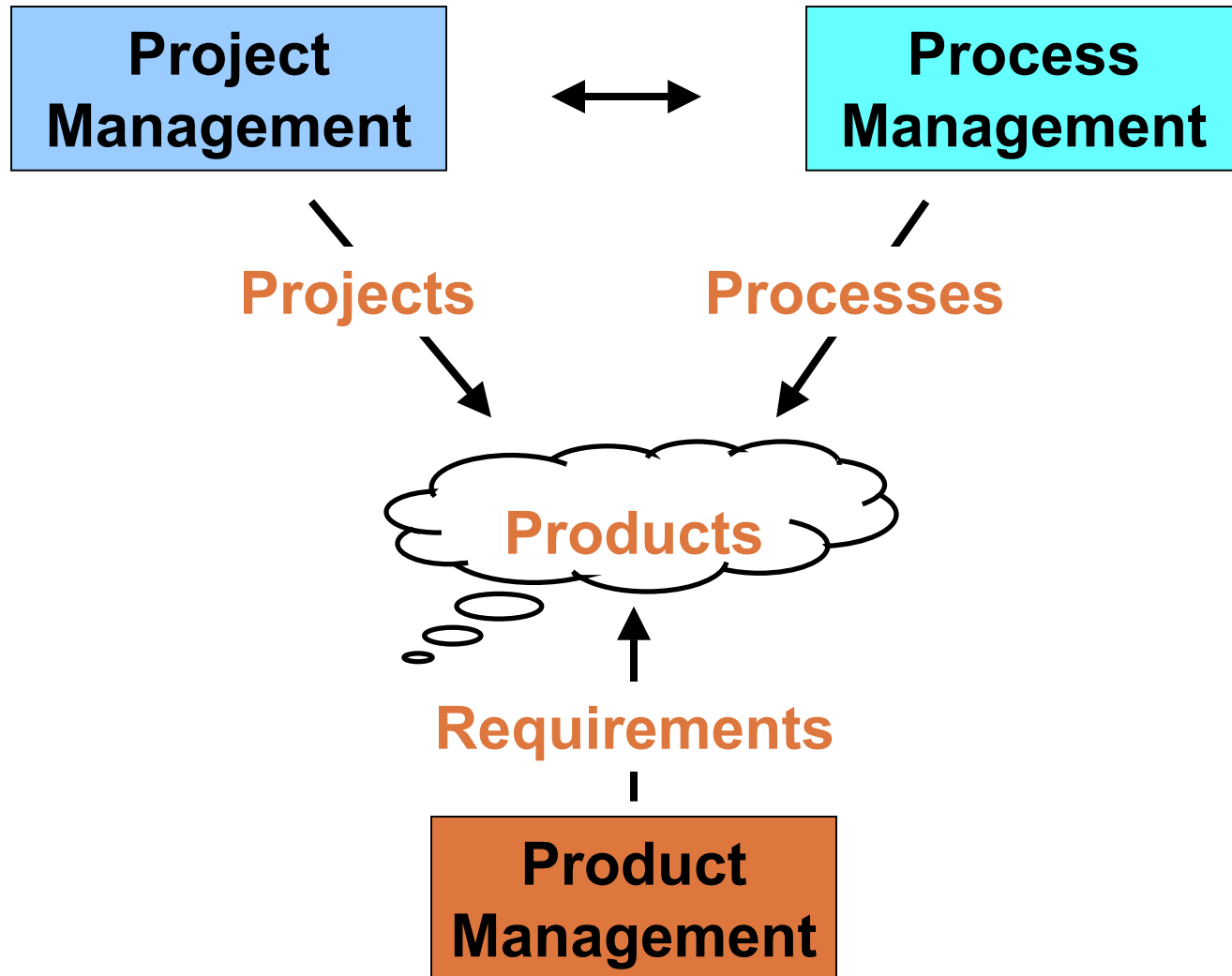
# Mortgage Processing Process



# Challenges – Functional Silos



# The Productivity Triangle



# How do Organizations Benefit by Managing their Processes?

- Time/Cost Savings
- Improve Customer Service
- Compliance with Regulations
- Several Intangibles:
  - Captures Corporate Knowledge
  - Easier to Manage
  - Increases Confidence in Outputs.



“Big 3”

# Six Sigma

		Process Management Frameworks				
Phases	Generic	Identify	Define	Refine	Implement	Control
	Six Sigma	Define	Measure	Analyze	Improve	Control
Tools	Tools	<ul style="list-style-type: none"> <li>• <b>Business Process Analysis</b></li> <li>✓ Function/Process Hierarchy</li> <li>✓ SIPOC Charts</li> <li>✓ Process map/swim lane</li> <li>✓ Specialty diagrams/models</li> </ul>			<ul style="list-style-type: none"> <li>• <b>Process Execution</b></li> <li>✓ Measurement</li> <li>✓ Compliance</li> <li>✓ Automation</li> <li>✓ Continuous Improvement</li> </ul>	

# Six Sigma

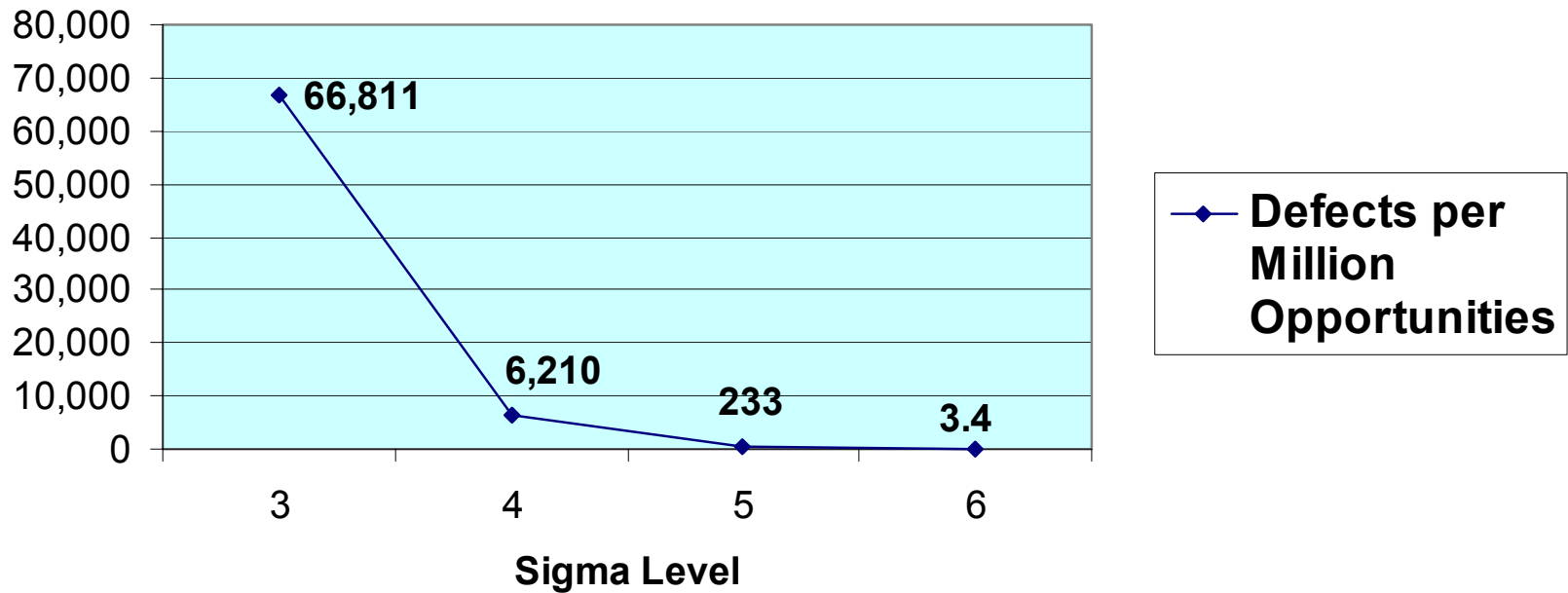
		<b>DMAIC</b>				
<b>Phases</b>		<b>Define</b>	<b>Measure</b>	<b>Analyze</b>	<b>Improve</b>	<b>Control</b>
<b>Tools</b>		<ul style="list-style-type: none"> <li>• Project charters</li> <li>• VOC tools</li> <li>• SARIE</li> <li>• SIPOC</li> <li>• Process Maps (As-Is)</li> <li>• Matrices</li> </ul>	<ul style="list-style-type: none"> <li>• Data measurements</li> <li>• Statistics</li> <li>• Pareto analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Process Maps</li> <li>• Cause-&amp;-effect diagrams</li> <li>• Brainstorming</li> </ul>	<ul style="list-style-type: none"> <li>• Process Maps (To-Be)</li> <li>• Prototypes</li> <li>• Project plans</li> </ul>	<ul style="list-style-type: none"> <li>• Automation</li> <li>• Reports</li> <li>• ISO 9000</li> </ul>

# Evolution of Six Sigma

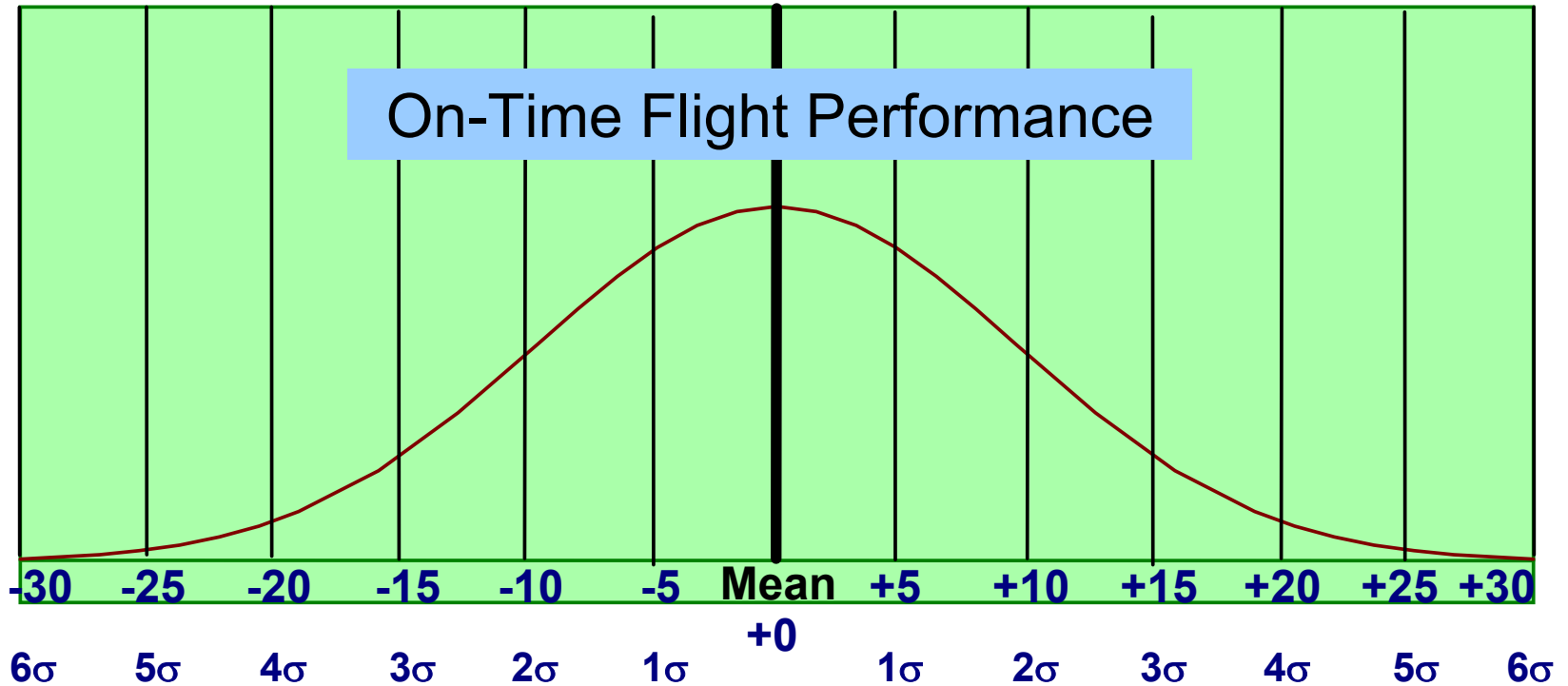
- 1980s – Motorola
- 1990's – GE
- 2000's – Service and Manufacturing

# Six Sigma Basics

## Sigma Levels and Process Defect Rates



# Six Sigma Basics - Example



# Six Sigma Basics - Define

- Establish the business case for the improvement project
- Project scope and deliverables
- Stakeholder identification
- Map the current and future states

From Pyzdek, The Six Sigma Handbook

# Six Sigma Basics - Measure

- Key metrics for the business process
- Accurate and reliable?
- Adequate data on the process?
- Key measures:
  - Progress
  - Project Success

# Six Sigma Basics - Analyze

- Current State Analysis
- Gap analysis
- Resources required to make the change
- Major obstacles to completing the project?

# Six Sigma Basics - Improve

- Managing Six Sigma projects
  - WBS - Work Breakdown Structures
  - Project tasks and schedules
  - Performance measures
  - Budget and cost control
  - Risk assessment
- Overcoming barriers to change
- Design of Experiments

# Six Sigma Basics - Control

- Maintaining the improvements
- Automation
- Reporting
- Statistical Process Control

# What is Business Process Analysis (BPA)?

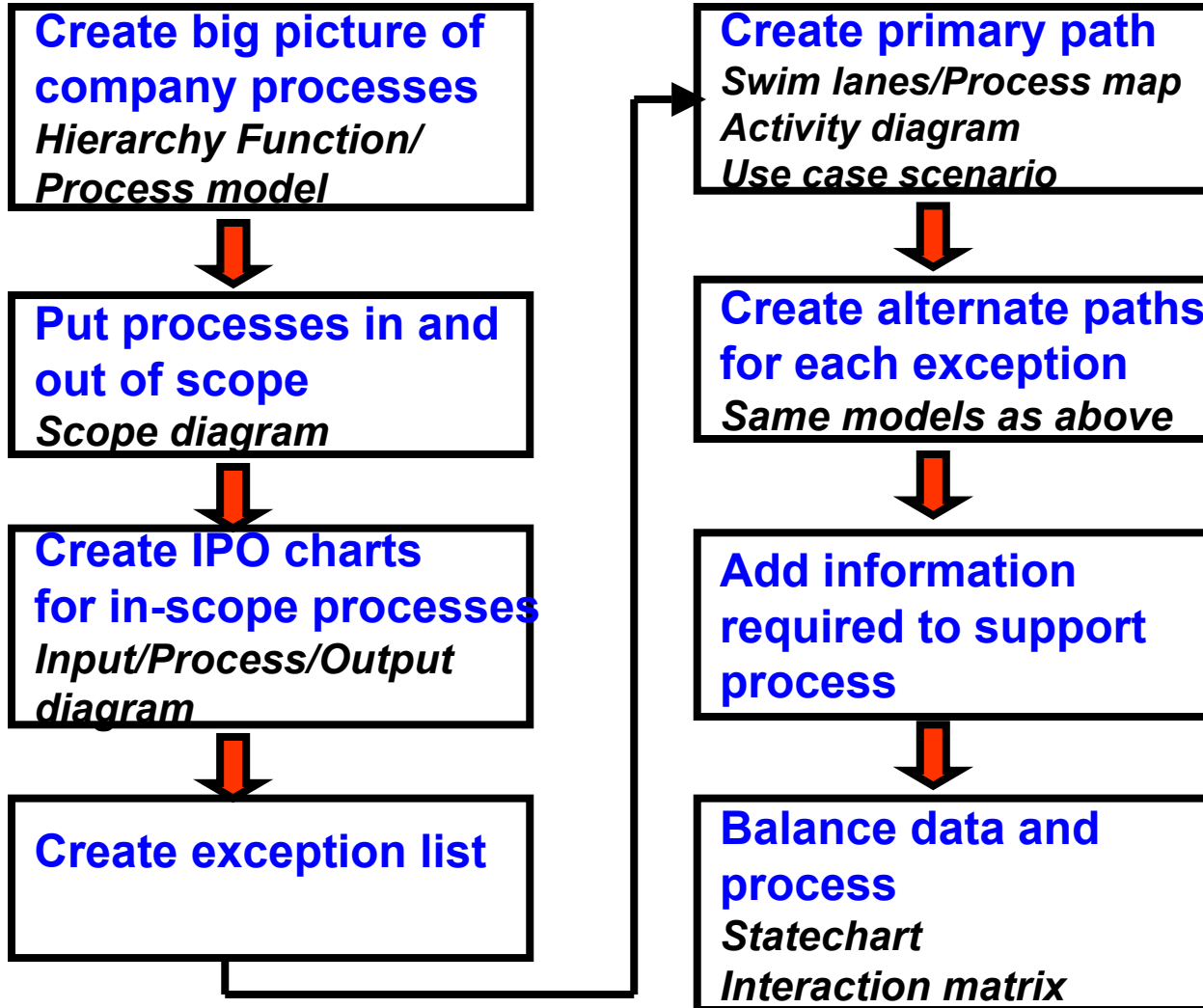
- Analysis and modeling tools and techniques to identify, document, and analyze processes
- Have one/more of these characteristics:
  - Show links between missions, goals, and processes
  - Create visual picture of processes
  - Document sequence and dependencies

Adapted from Gartner article (see Resources)

# What is BPA Used For?

- Process requirements for automation projects
- Process improvement
- Quality and compliance checks
- Process creation (e.g., for new products and regulations)
- Training aids.

# Method for BPA



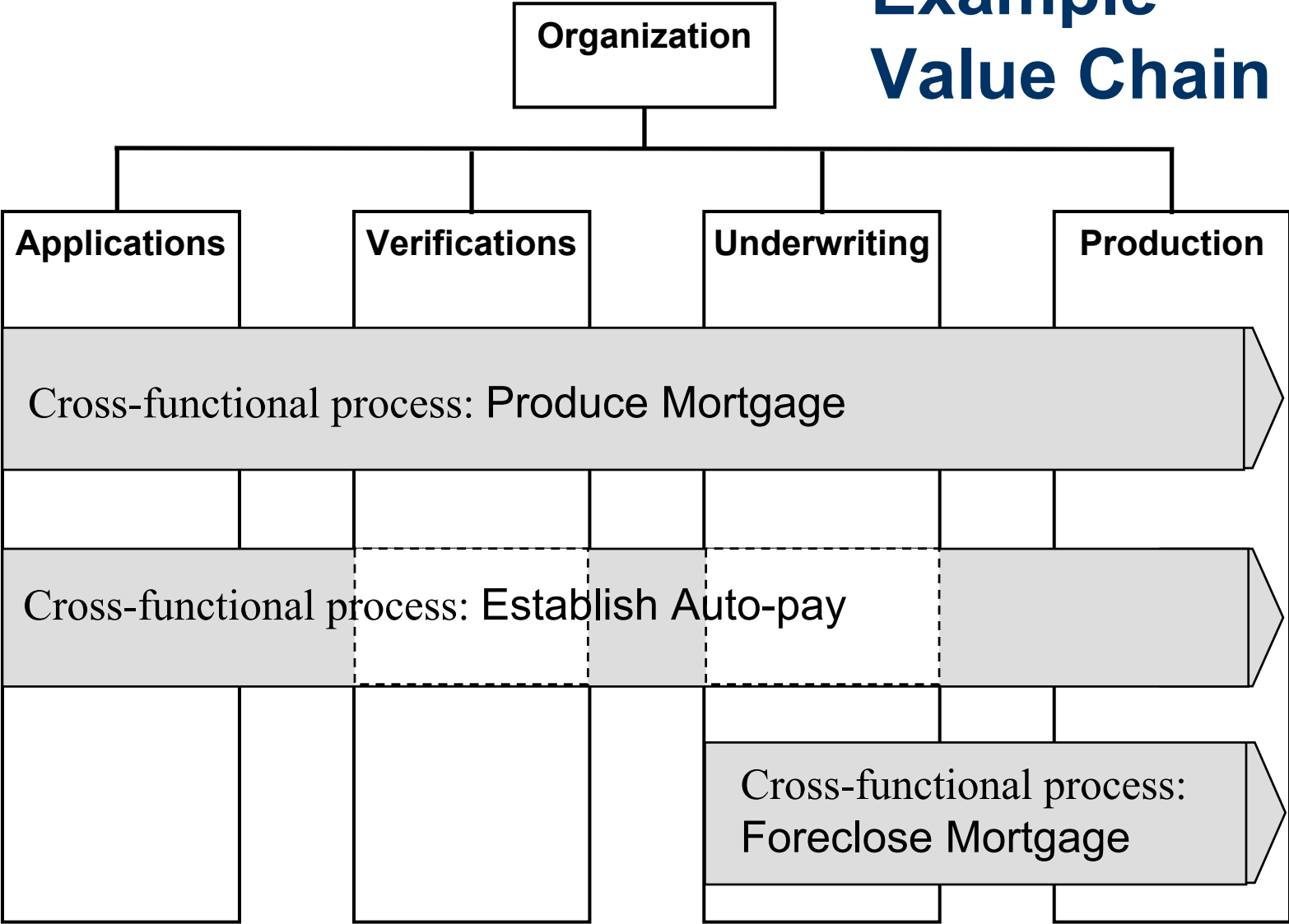
# BPA Steps: Identify and Define

		DMAIC				
Phases		Define	Measure	Analyze	Improve	Control
Tools		<ul style="list-style-type: none"> <li>• <b>Project charters</b></li> <li>• <b>VOC tools</b></li> <li>• <b>SARIE</b></li> <li>• <b>SIPOC</b></li> <li>• <b>Process Maps (As-Is)</b></li> <li>• <b>Matrices</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Data measurements</b></li> <li>• <b>Statistics</b></li> <li>• <b>Pareto analysis</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Process Maps</b></li> <li>• <b>Cause-&amp;-effect diagrams</b></li> <li>• <b>Brainstorming</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Process Maps (To-Be)</b></li> <li>• <b>Prototypes</b></li> <li>• <b>Project plans</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Automation</b></li> <li>• <b>Reports</b></li> <li>• <b>ISO 9000</b></li> </ul>

# BPA Steps: Identify

- Big Picture
  - **Value Chain/Hierarchy** to organize
  - Tie vision/strategy to processes
  - Use **Project Charter** to document vision
- ID Processes, Stakeholders
- Prioritize Processes for Analysis
  - Highest value first: **SARIE Forms**
  - Decide which are in scope: **Scope Diagrams**
  - **Prioritization Matrices** can help

# Example Value Chain



# Example SARIE Form

**S**ituation

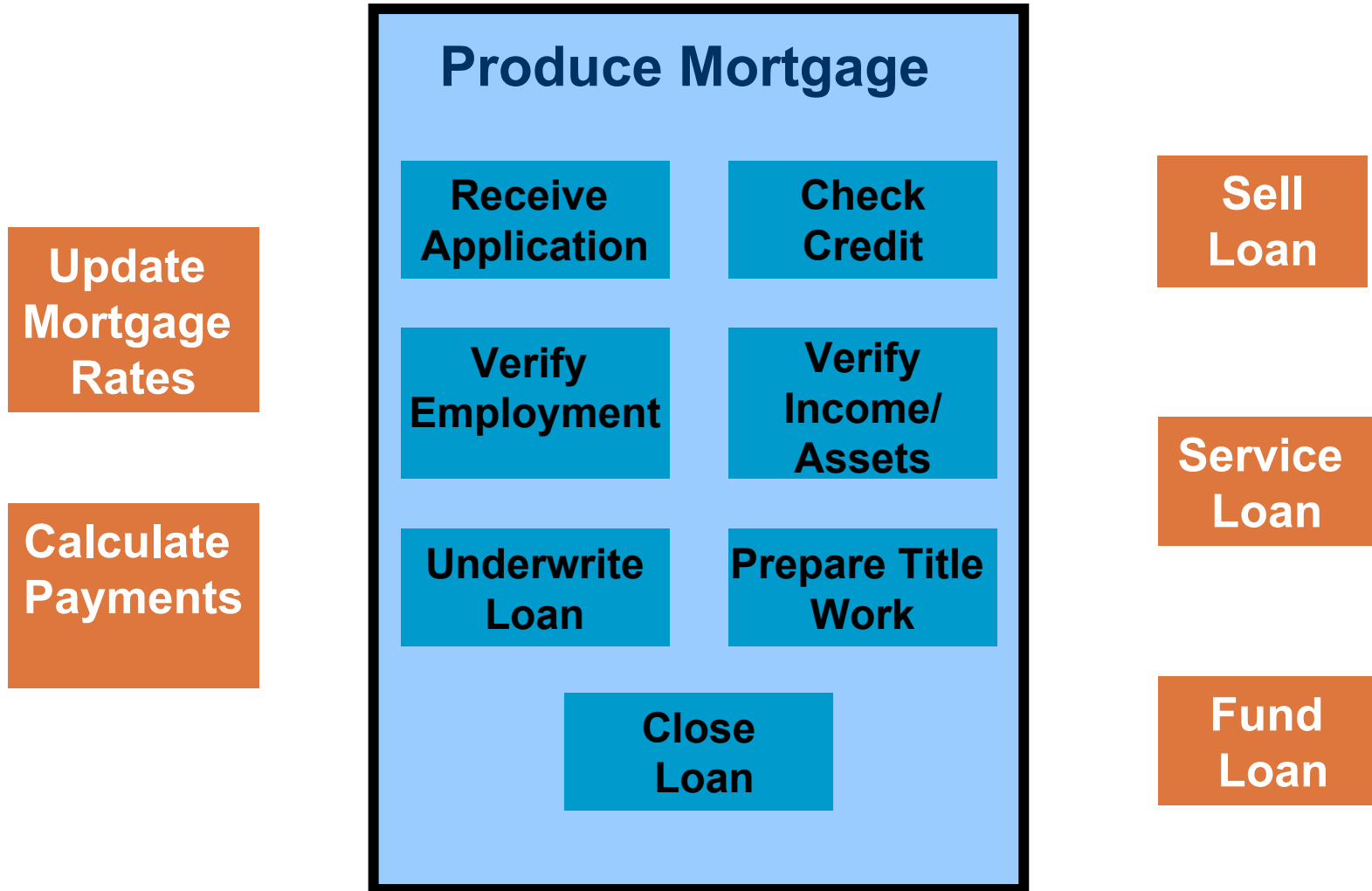
**A**nalysis

**R**ecommendations

**I**mplementation

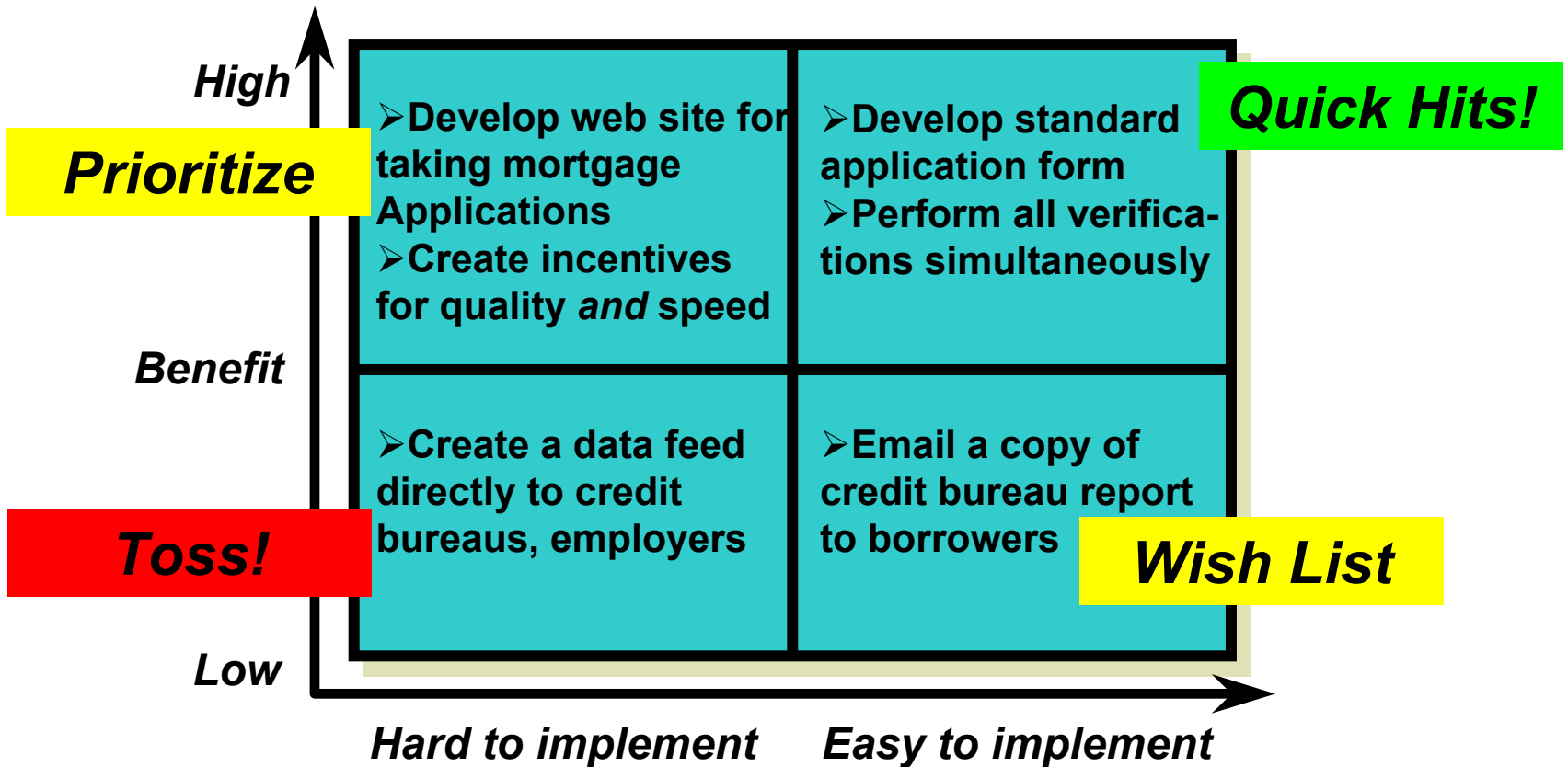
**E**valuation

# Example Scope Diagram



In Scope

# Example Prioritization Matrix For Selecting Processes



# BPA Steps: Define

- Frame the Process
  - Uses a modified **SIPOC Chart**
  - Helps to clarify process boundaries
  - Identifies stakeholders

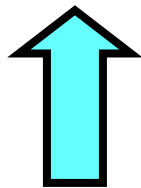
# Example SIPOC Chart

Pre-Condition:  
Mortgage Request

Post-Condition:  
Mortgage Applied for

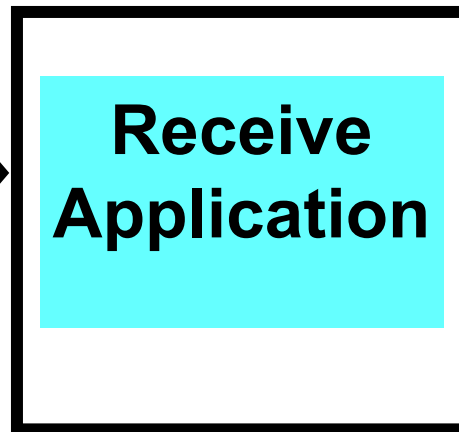
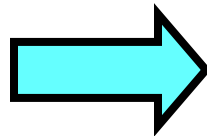
**Inputs:**

- Financial Information
- House Information

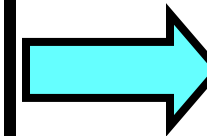


**Suppliers:**

- Requester (property purchaser)

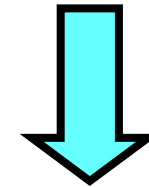


Process



**Outputs:**

- Completed Mortgage Application
- Application added to database



**Customers:**

- Verification Staff

# Short Exercise

- In small teams, frame the following process:

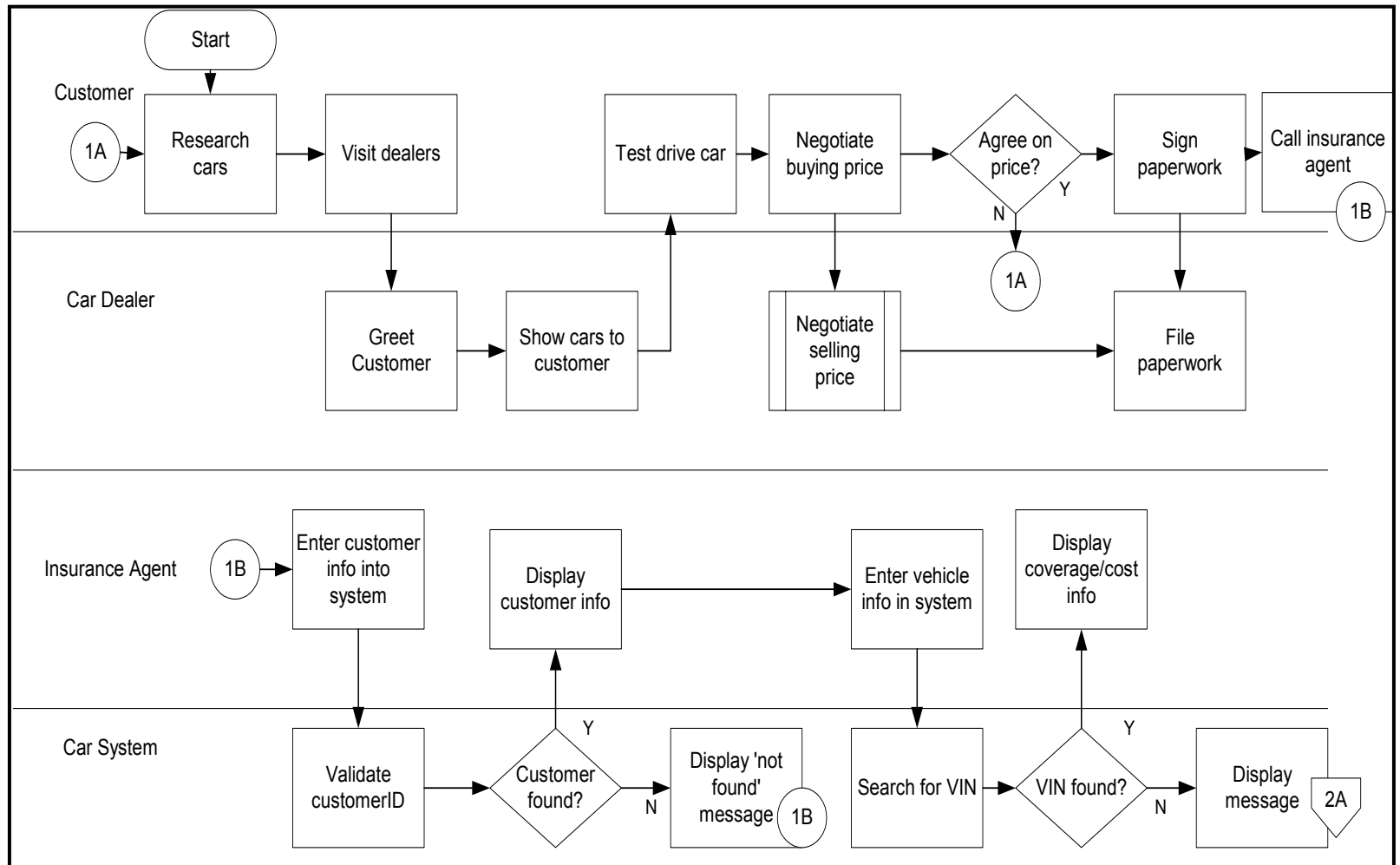
## Buy a new house

- List the following on paper:
  - Process Start (pre-condition)
  - Process End (post condition)

# BPA Steps: Define

- Model/Map the Current Process
  - **As-Is Process Maps**
  - Primary, alternate paths
  - Beware those exceptions!
  - Handoffs between participants
  - Helps find where a process can **B.O.G.** down
- Why is it valuable to map the “as is”?

# Example Process Map

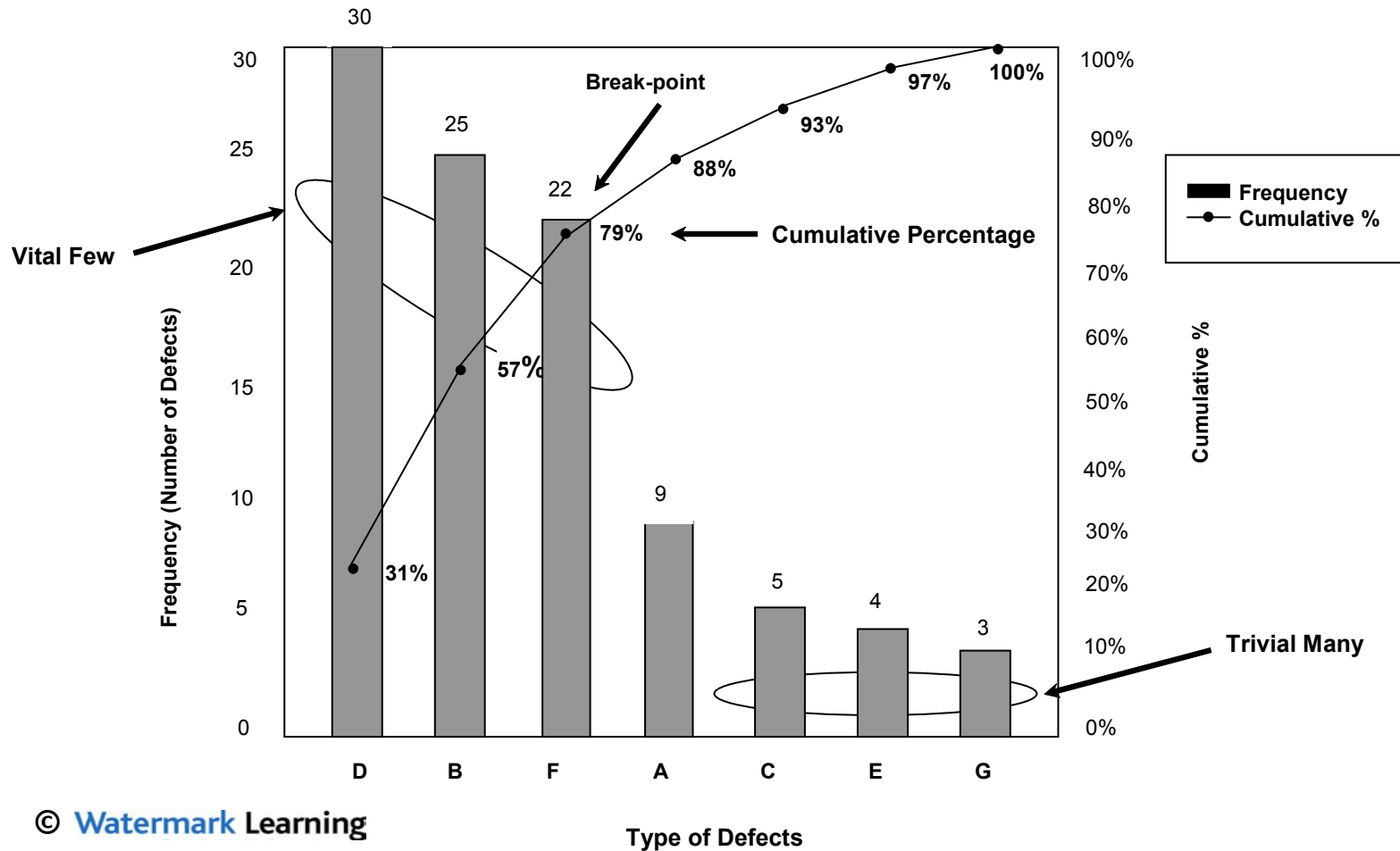


# BPA Steps: Identify

- Gather Data and Analyze Problems
  - Questionnaires
  - Check Sheets
  - Data Sheets
  - **Pareto Charts**
  - Histograms

# Example Pareto Chart

## Common Pareto Terminology



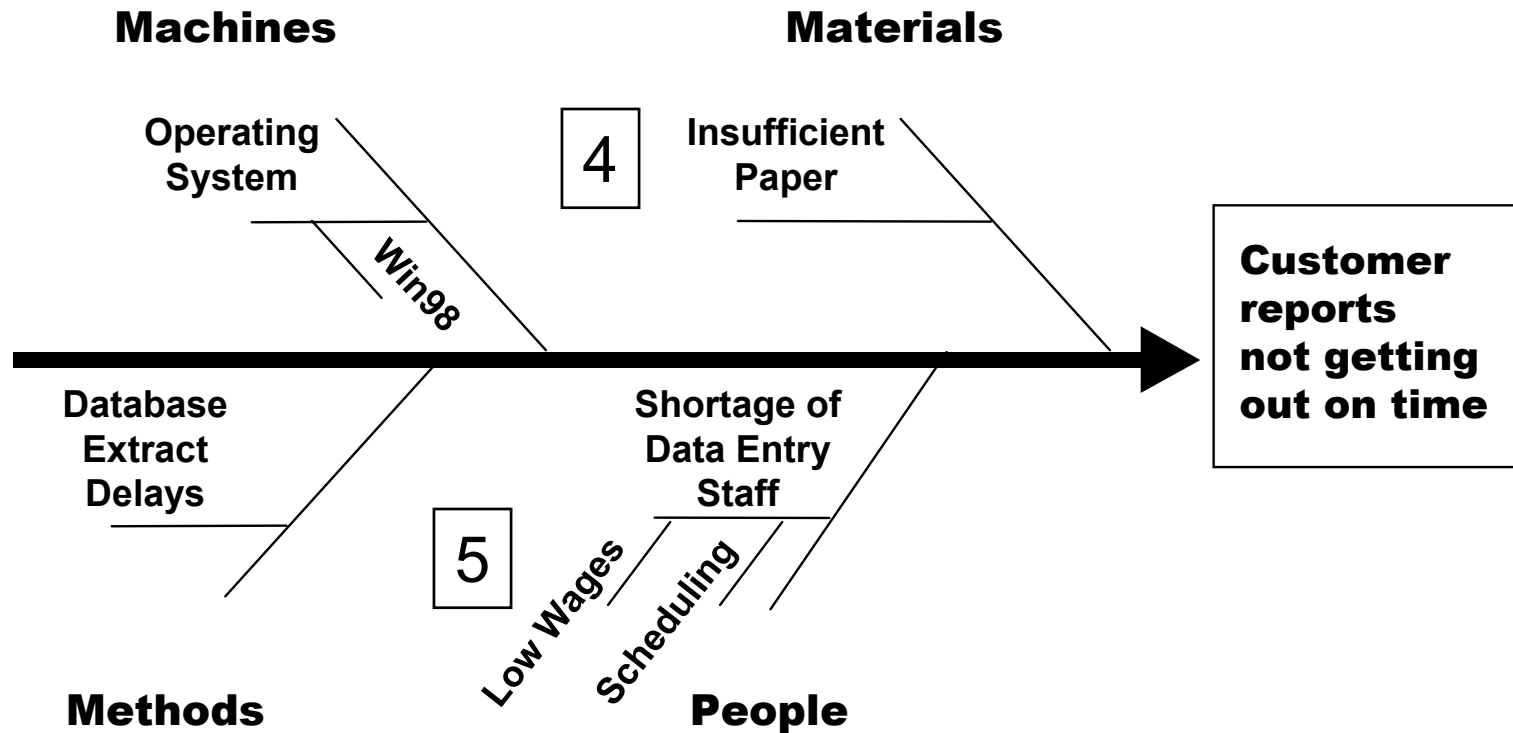
# BPA Steps: Refine

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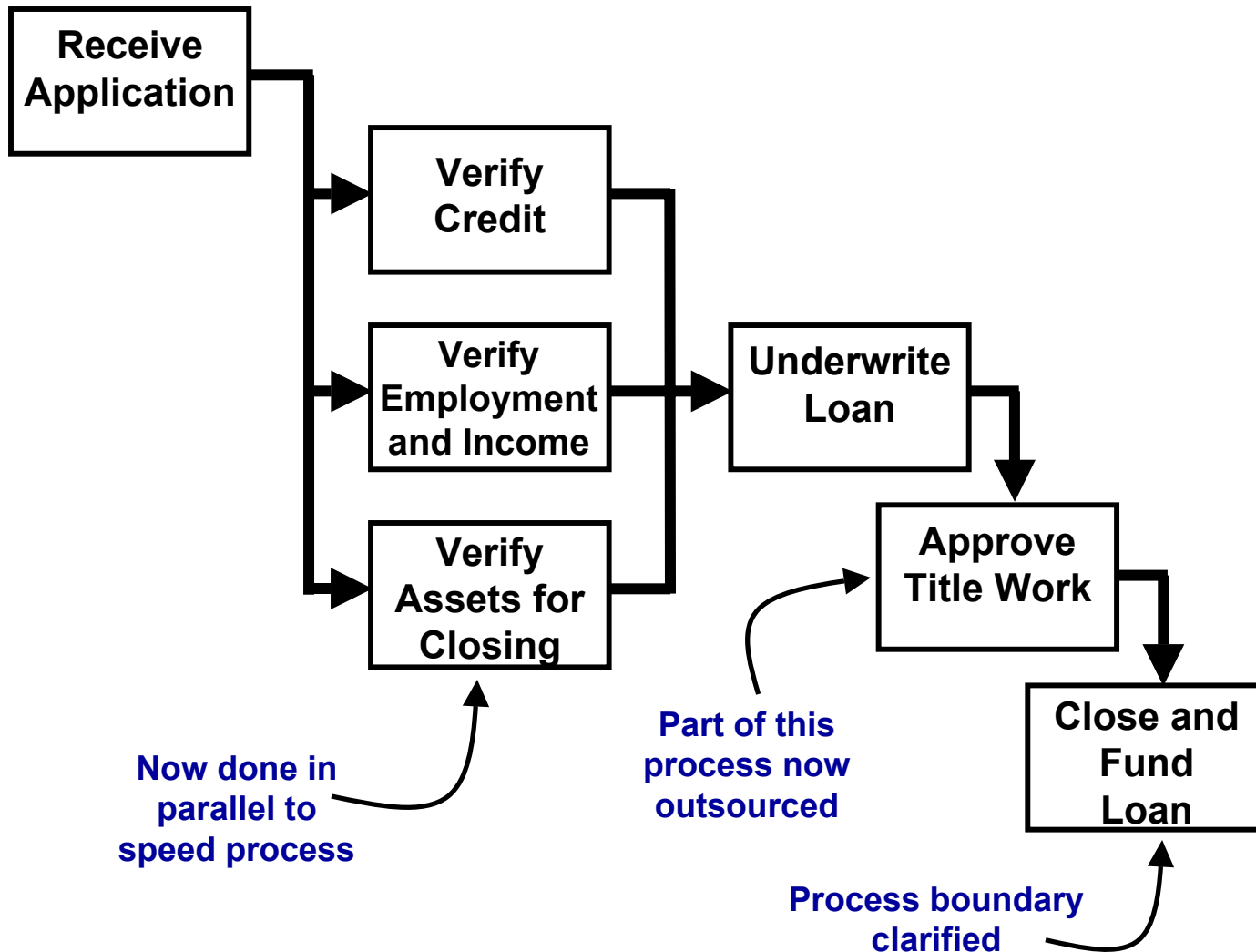
# BPA Steps: Refine

- Map future, desired state
  - **To-Be Process Maps**
- Analyze gaps
  - **Cause and Effect Diagrams**
- Identify obstacles
- Plan implementation to fill gaps and overcome obstacles

# Example Fishbone Cause-and-Effect Diagram



# Example Refined Process



# BPA Steps: Implement

		DMAIC				
Phases		Define	Measure	Analyze	Improve	Control
Tools		<ul style="list-style-type: none"> <li>• Project charters</li> <li>• SARIE</li> <li>• SIPOC</li> <li>• Process Maps (As-Is)</li> <li>• VOC tools</li> </ul>	<ul style="list-style-type: none"> <li>• Data measurements</li> <li>• Statistics</li> <li>• Pareto analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Process Maps</li> <li>• Cause-&amp;-effect diagrams</li> <li>• Brainstorming</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Process Maps (To-Be)</b></li> <li>• Prototypes</li> <li>• <b>Project plans</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Automation</b></li> <li>• Reports</li> <li>• ISO 9000</li> </ul>

# BPA Steps: Implement and Control

- Pilot new processes
  - **Project Plans**
  - **To-Be Process Maps**
- Measure, Evaluate and Enforce
  - Automation
  - Check Sheets
  - Data Sheets
  - **Pareto Charts**
- Select more processes
  - Rinse and Repeat!

# Questions:

- Which of these tools does your organization use?
- How can you see using them in your job?

# How can we Apply BPA?

- Help define a BPA framework
- Adopt a repeatable process for BPA
- Use BPA tools on projects
- Build in suitable process measures and enforcement into *everything* you create.

# Resources

## ■ Web Sites

- SEI CMM: [www.sei.cmu.edu/cmm/](http://www.sei.cmu.edu/cmm/)
- Business Process Management Initiative:  
[www.bpmi.org](http://www.bpmi.org)  
[www.bpmi.org/specifications.htm](http://www.bpmi.org/specifications.htm)  
(BPML specification and info on BPQL; also see [www.bpmn.org/](http://www.bpmn.org/))
- Business Process Management Group:  
[www.bpmg.org](http://www.bpmg.org)
- Business Process Trends  
[www.bptrends.com](http://www.bptrends.com)

## ■ Articles

- “Fundamentals of Process Management: Best Practices in Optimizing Cross-Functional Business Processes,” By Robert M. Curtice, © Performance Improvement Associates, LLC
- “Process Management Technology Makes Compliance Easier,” © 2003, Gartner, Inc.

# Resources

## ■ Selected Training

– Watermark’s Business Process Modeling and Consulting Skills courses

## ■ Selected Books

Davenport, Thomas H., Process Innovation: Reengineering Work through Information Technology, 1993, ISBN 0-87584-366-2.

Eriksson, Hans-Erik and Magnus Penker, Business Modeling with UML, Business Patterns at Work, 2000, ISBN 0-471-29551-5.

Hammer, Michael. Beyond Reengineering: How the Process-Centered Organization Is Changing Our Work and Our Lives. 1997.

Harmon, Paul. Business Process Change, 2003, ISBN 1-55860-758-7.

Jacka, J.Mike and Keller, Paulette J., Business Process Mapping: Improving Customer Satisfaction, 2002, ISBN 0-471-07077-4.

Sharp, Alec et. al., Workflow Modeling: Tools for Process Improvement and Application Development, 2001, ISBN 1-58053-021-4.

Smith, Howard and Fingar, Peter, Business Process Management: The Third Wave, 2002, ISBN 0-929-65233-9.

# Resources

- BPA Software Vendors:
  - Corel, IDS Scheer, Proforma, Popkin Software, Casewise, EPlance, Mega International, Microsoft and ProActivity
- BPM Software Vendors:
  - FileNet, Staffware, Pegasystems, Metastorm and DST Systems
  - BPM vendors with compliance templates include Axentis, CommerceQuest, Fuego and HandySoft.

# E.T.C.

**Indicate on a business card if you want:**

**E** = Electronic Newsletter (monthly)

**T** = Templates, articles, summaries, etc.

**C** = Contact me to talk further

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