



"BEING AN AGENT OF CHANGE"

Understanding and Overcoming Barriers to Your Success

Burton Greenberg, Process Management Group, Ltd.

The merits of sound IT process and testing disciplines are widely documented and are accompanied by an abundance of metrics. Although this evidence is widely understood and accepted, metrics alone are not enough to overcome continued resistance to embracing and implementing new disciplines. Individuals and organizations regularly reject discipline and process changes required for effective software development.

In his presentation, Burt will help you recognize the human and cultural characteristics that contribute to common barriers within IT and User organizations. Barriers discussed focus on human characteristics, not technical issues that prevent the integration of sound processes. This program is targeted to raise awareness of the barriers and behavioral issues that inhibit implementation of required changes. The techniques to be presented closely match proven techniques to those used when "marketing" a new service.

About the speaker...

Burton (Burt) Greenberg is founder and President of Process Management Group, Ltd. (PMG), an organization dedicated to the implementation and support of IT quality assurance, business analysis and testing. Burt has worked in the IT field for over 35 years holding positions that include Programmer, Business Analyst, Manager and Director of Development. Burt complemented his technical experience with an MBA from Loyola University. For over 20 years, he has been devoted to IT quality and testing, founding PMG in 1992. PMG works effectively with clients to ensure that business goals are satisfied, while establishing practical quality assurance and testing disciplines.

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"BEING AN AGENT OF CHANGE"

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PRESENTATION AGENDA

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- **Common Approach**
- **Root Cause & Means to Instill Change**
 - Marketing Concepts
 - Organizational Characteristics
 - Product Life Cycle
- **Potential Action Plan**
- **Recap**
 - Questions & Answers

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Source of Defects (SPR Research) % Distribution by Project Phase

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	Require ments	Design	Coding	Bad Fixes	Docu- ments	Admin	Total
IBM (MVS)		45	25	20	5	5	100%
SPR Studies	20	30	35	10	5		100%
TRW Corp		60	40				100%
Mitre Corp		64	36				100%
Nippon Electric		60	40				100%

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NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY (NIST) May, 2002 Report

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- **Buggy software costs users, vendors nearly \$60B/Year**
- **Better testing infrastructure could reduce the cost by \$22.5 billion, though it wouldn't eliminate all software errors**

Relative Costs of Defect Removal

Baziuk Study (1995)

	Requirements	System Testing	Installation Testing	Acceptance Testing	Operations & Maintenance
Costs	1x	90x	90x~440x	440x	470x~880x

Published in NIST

"The Economic Impact of Inadequate Infrastructure for Testing" 5/2002

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The Bigger They Are

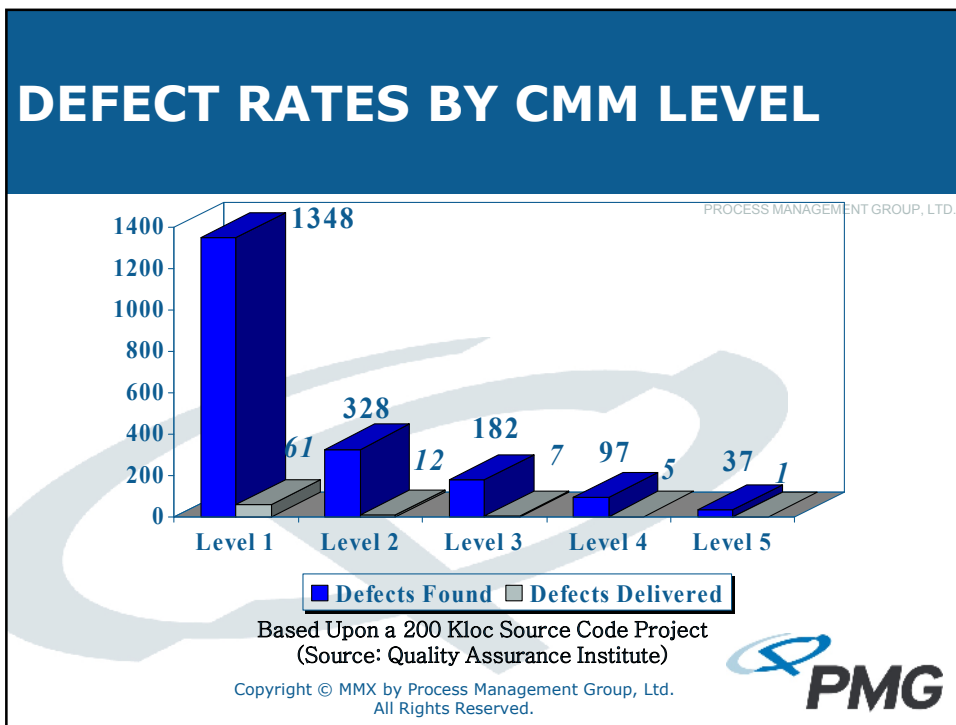
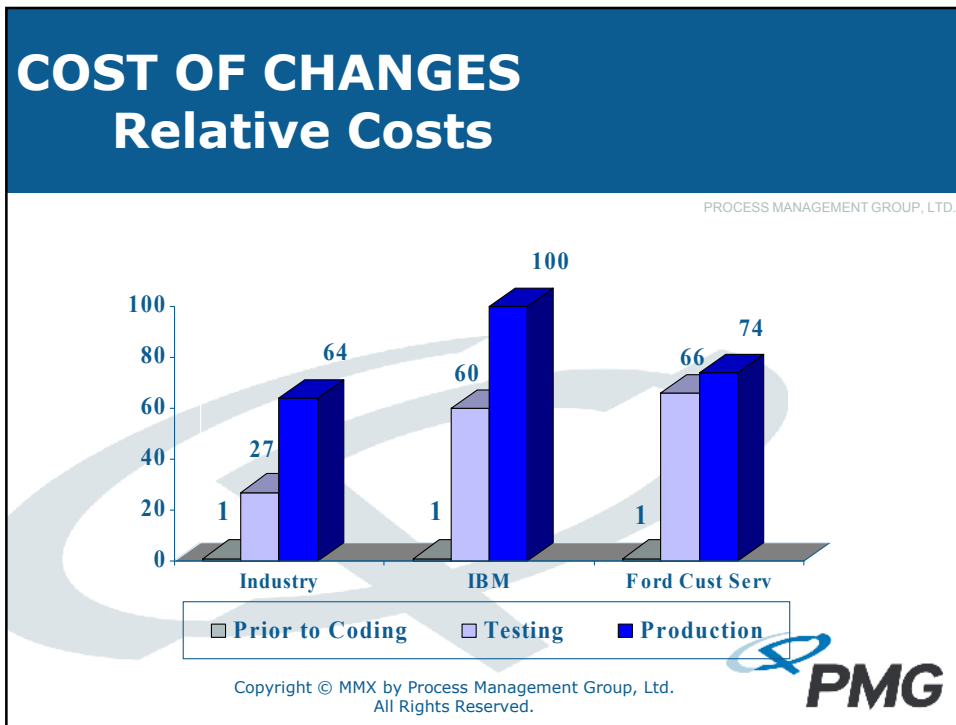
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- **The Larger the Project, The greater the chance of Failure**
 - < \$750,000 55% Succeed
 - \$1 Million ~ \$2 Million 18% Succeed
 - \$5 Million ~ 10 Million 7% Succeed

Source: The Standish Group International Inc., Dennis, Mass

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SAMPLE METRICS BY CMM LEVEL

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	<u>1</u> <u>Initial</u>	<u>2</u> <u>Repeatable</u>	<u>3</u> <u>Defined</u>	<u>4</u> <u>Managed</u>	<u>5</u> <u>Optimizing</u>
Duration (Months)	29.8	18.5	15.2	12.5	9.0
Person Months	593.5	143.0	79.5	42.8	16.0
Cost	\$1.7M	\$1.3M	\$0.7M	\$0.4M	\$0.2M

Based Upon a 200 Kloc Source Code Project
(Source: Quality Assurance Institute)

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FOCUS ON ECONOMICS

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- **Typically Does Not Lead to Changes**
- **Economic Focus Ignores Key Elements Required of Change**



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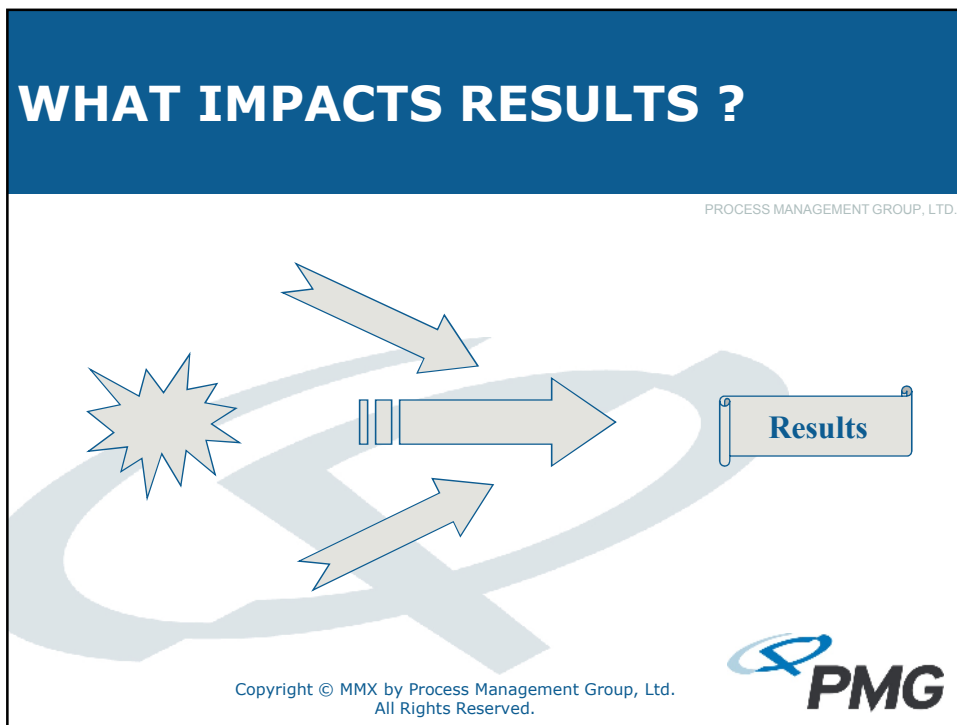
REVIEW OUR OBJECTIVES ...

PROCESS MANAGEMENT GROUP, LTD.

- **Introduce New Service**
- **Overcome Resistance to Change**
- **Successful Projects**

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NOT A CHALLENGE UNIQUE TO IT ...

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- **New Products & Services Are Introduced Daily**
- **Similar Problems**
- **Accepted Process to Gain Results**
- **We Can Learn From Other Industries**

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PARADIGM SHIFT ...

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- **PARADIGM**
 - set of rules and understandings (i.e. our lens) for viewing the world and events around us
- **PARADIGM SHIFT**
 - when we change the foundation by which we view the world and events

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"Components" of Marketing

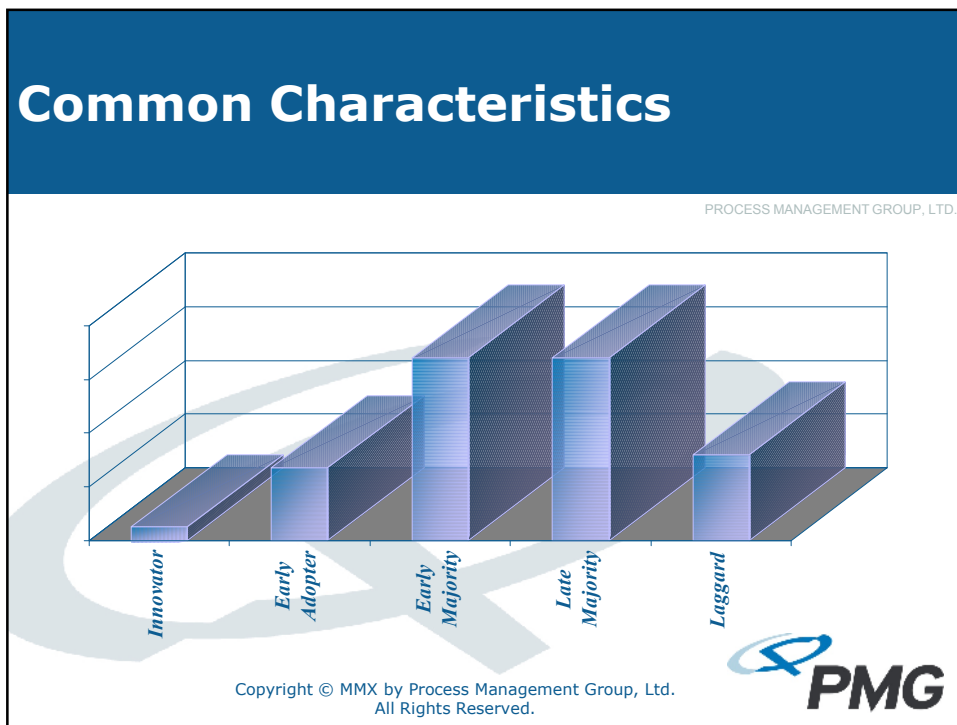
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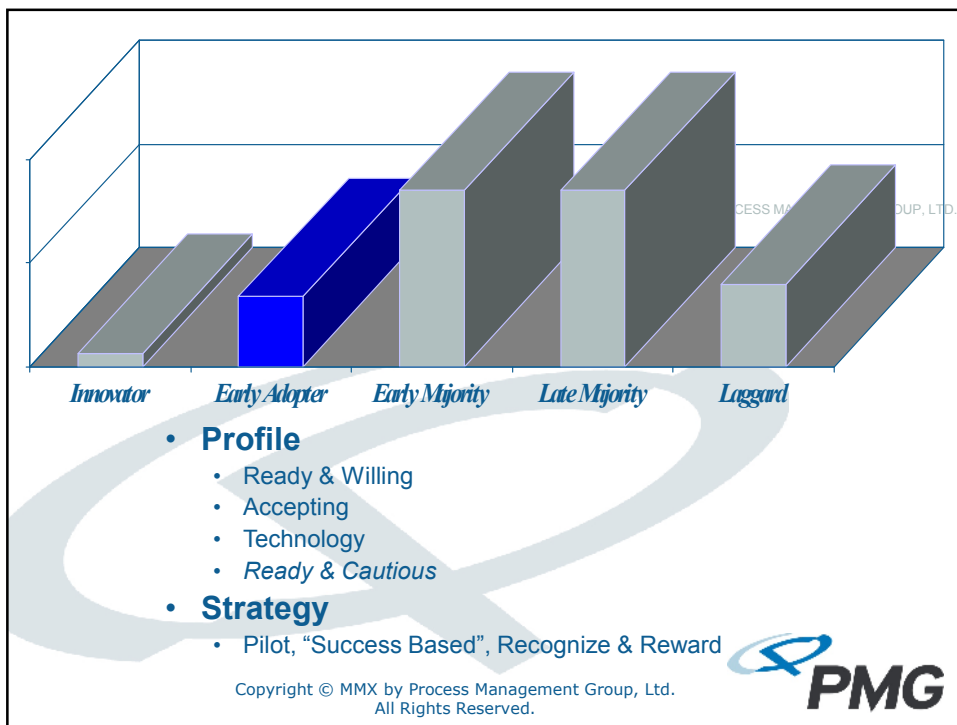
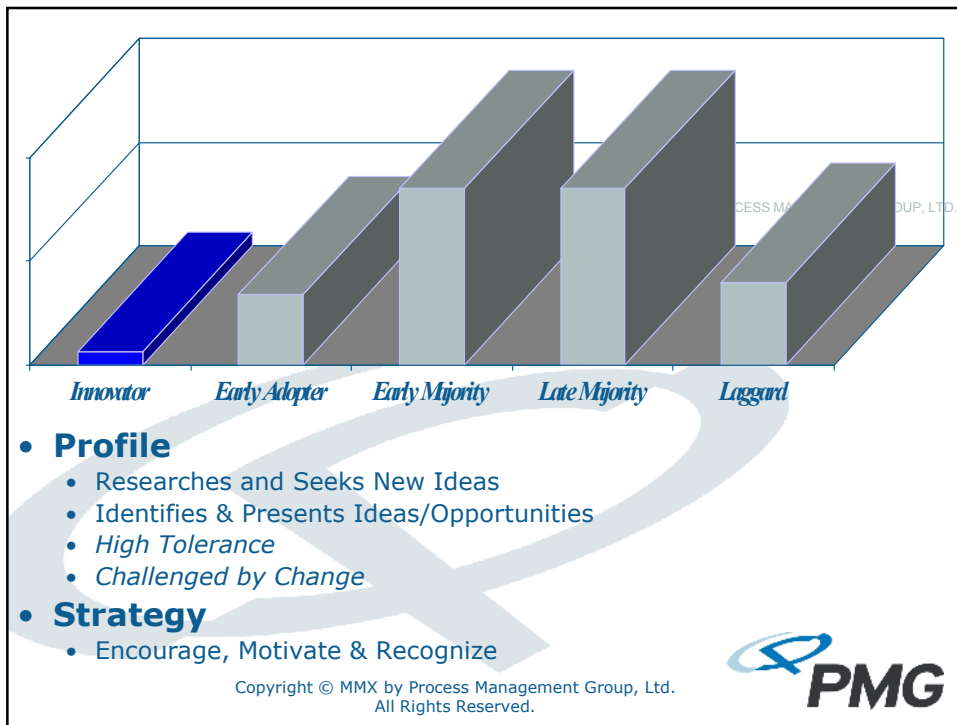
- **Economics**
 - Information Processing
 - Rational Thinking
- **Sociology**
 - Group Influence
- **Anthropology**
 - Cultural Influence

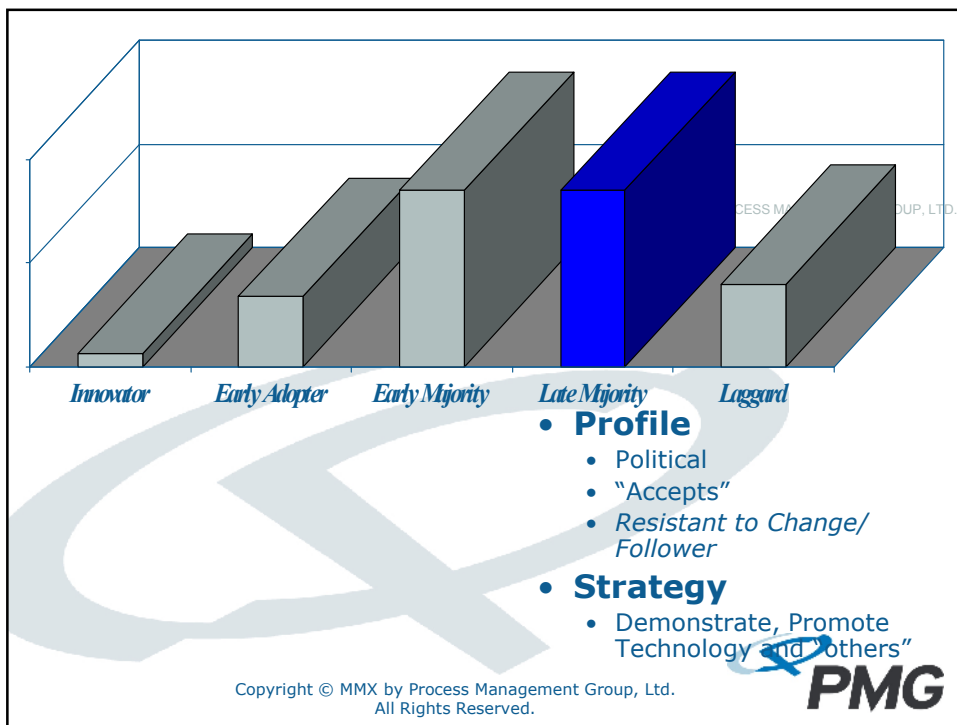
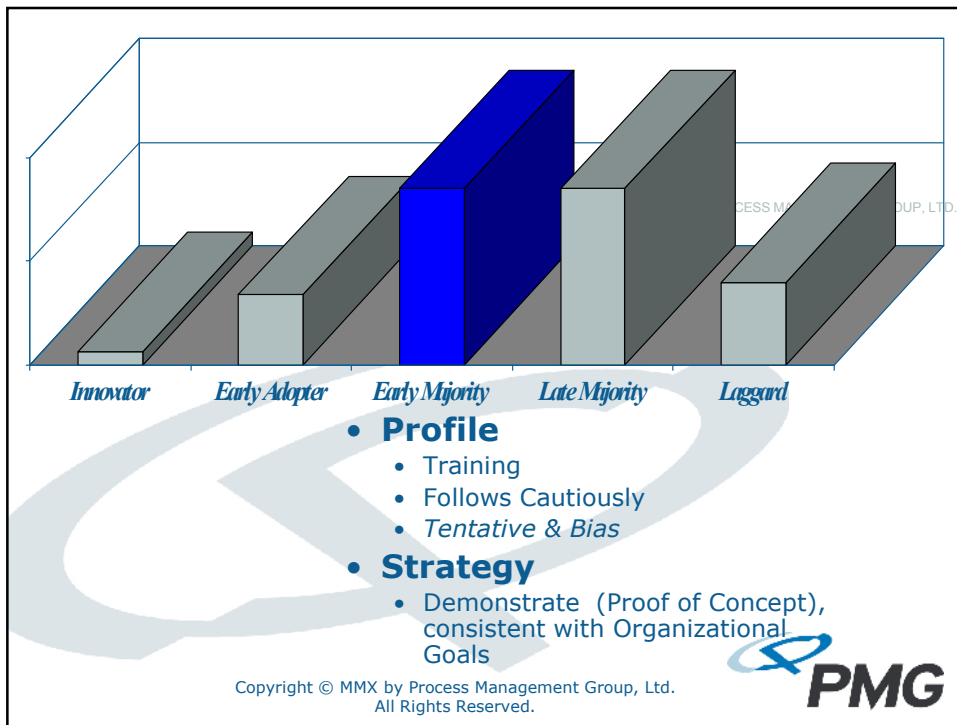
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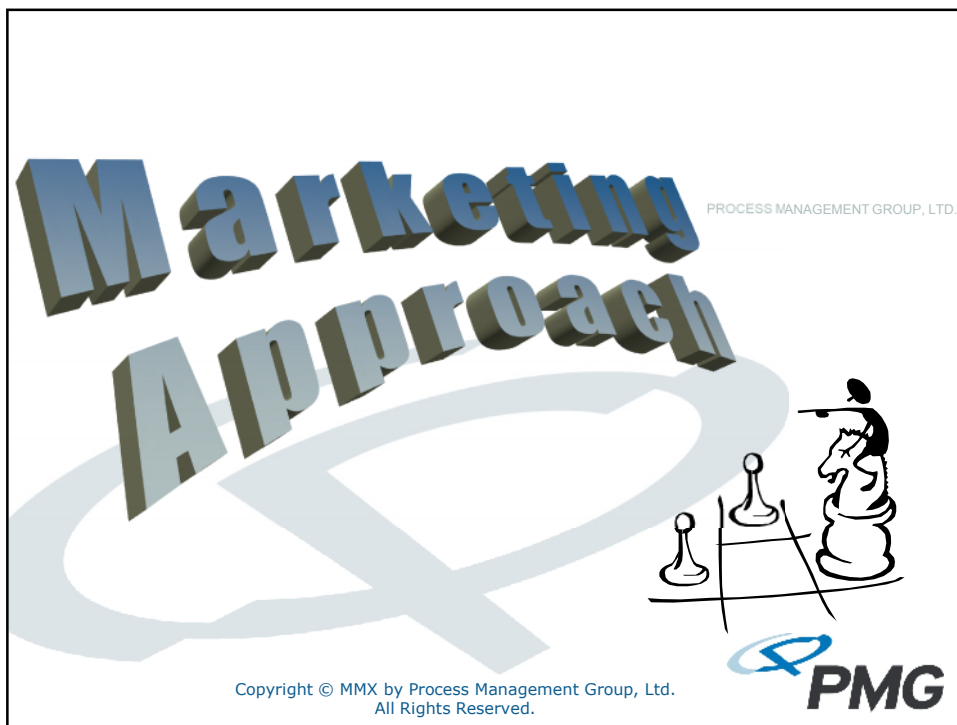
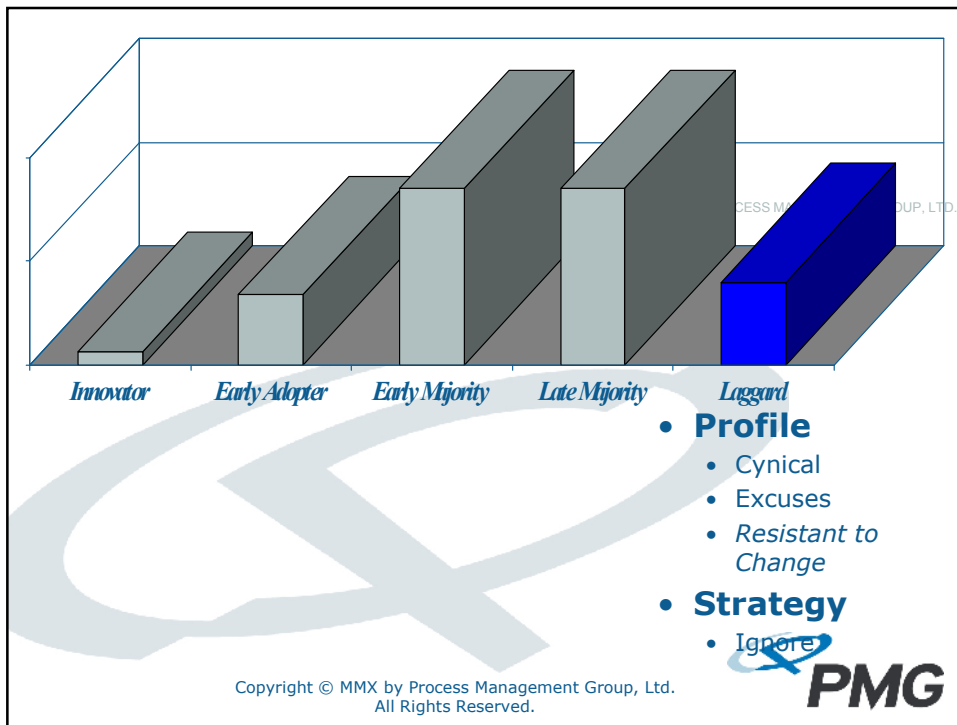
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The slide has a dark blue header with the title "Components" of Marketing in white. The main content area is white with a large, light blue shadow of a stylized 'P' shape in the background. The text is in a dark blue font. The PMG logo is in the bottom right corner.









Types by Product Life Cycle

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- **Introduction**
 - Innovators + Early Adopters
- **Growth**
 - Early Adopters + Early Majority
- **Maturity**
 - Early + Late Majority + Laggards
- **Decline**
 - Late Majority + Laggards

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Approach

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- **Leverage "Innovators" and "Early Adopters"**
- **Select Areas of Change where success can be obtained**
- **Turn Pilots into Successes**
 - Innovators
 - Early Adopters
- **Use Successes for Demonstration**
 - Early Majority
 - Late Majority
- **Be Patient**
- **Take small, incremental steps**

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Implementing QA / Testing Using Product Life Cycle

- **Introduction**

- Building Product Base
 - Simple
 - Promotion

- **Growth**

- Awareness Increases
 - Highlight Attributes
 - Focus on Features

- **Maturity**

- Market Momentum
 - Differentiate
 - Retain Loyalties

- **Decline**

- Harvest or Decline

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Implementing QA / Testing Using Product Life Cycle

- **Introduction**

- Build Your Base
 - Innovators & Early Adopters
- Simple
 - Focus on Areas Where Change Can Lead to Success
 - Easy "Wins"
 - Short Timeframes
- Promotion
 - Exposure & Support for Successes

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Implementing QA / Testing Using Product Life Cycle

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• Growth

- Awareness Increases
 - Early Majority & Late Majority
 - Incremental Implementation
 - Recognize All Contributions (not only QA/Testing)
- Highlight Attributes
 - Positive Project Impacts
 - (Time, Cost, Defect Delivery)
- Focus on Features
 - Improved Communication & Understanding
 - Effective Risk Management

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Implementing QA / Testing Using Product Life Cycle

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• Maturity

- Market Momentum
 - Differentiate
 - Contrast to Past Projects & Implementations w/o Processes
 - Retain Loyalties
 - Share Credit

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Implementing QA / Testing Using Product Life Cycle

- **Decline**
 - Harvest or Decline

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IMPLEMENTATION OF QA or TESTING PRACTICES

- **Selective Recruiting of Initial Participants**
- **Establish Credibility**
- **Sensitive to Organizational "Hot Buttons"**
- **Pilot Projects; Demonstrate Successes & Metrics**
- **Solid contributions to the Project & Organization**
- **Transition to 'Majorities'**

- **Be Patient**
- **Remain Flexible**

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Do Your Homework

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- **What is Motivating the Changes?**
- **How Does Your Organization Fit with the Characteristics?**
- **What are the Characteristics of Key Management?**
- **Be Honest With Yourself About Your Own Characteristics**
- **What are the Key Areas of Focus for Change?**

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Presentation Review

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SUMMARY

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- **Understand the Evidence**
 - Do Not Expect Data to Drive Changes
- **Incorporate Human & Cultural Factors**
 - Target Those Who will Facilitate Changes
- **Implementation Plan with Balance**
 - Be Selective, Patient and Realistic



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