



**UGS**

*Transforming the  
process of innovation*



## **New Product Development**

**Winning the Race to Get New Products to Market in the High  
Tech and Electronics Industry**



# It's all about Profitable Growth *and* out-Innovating your Competition



“A company can’t **outgrow** its competitors unless it can **out-innovate** them.”

Harvard Business Review

“... **90%** of the executives said that generating **organic growth through innovation is essential** for success”

The Boston Consulting Group  
Innovation 2005

“Over the next six years... **more than 70% of today’s products ...will be obsolete...**”

Mastering Innovation  
Deloitte



# Innovation : A Key to Growth

“Time to put ideas into practice”

The Economist, April 21, 2005

stand out from the crowd

“Companies should shift their attention from cost-cutting to business-building”

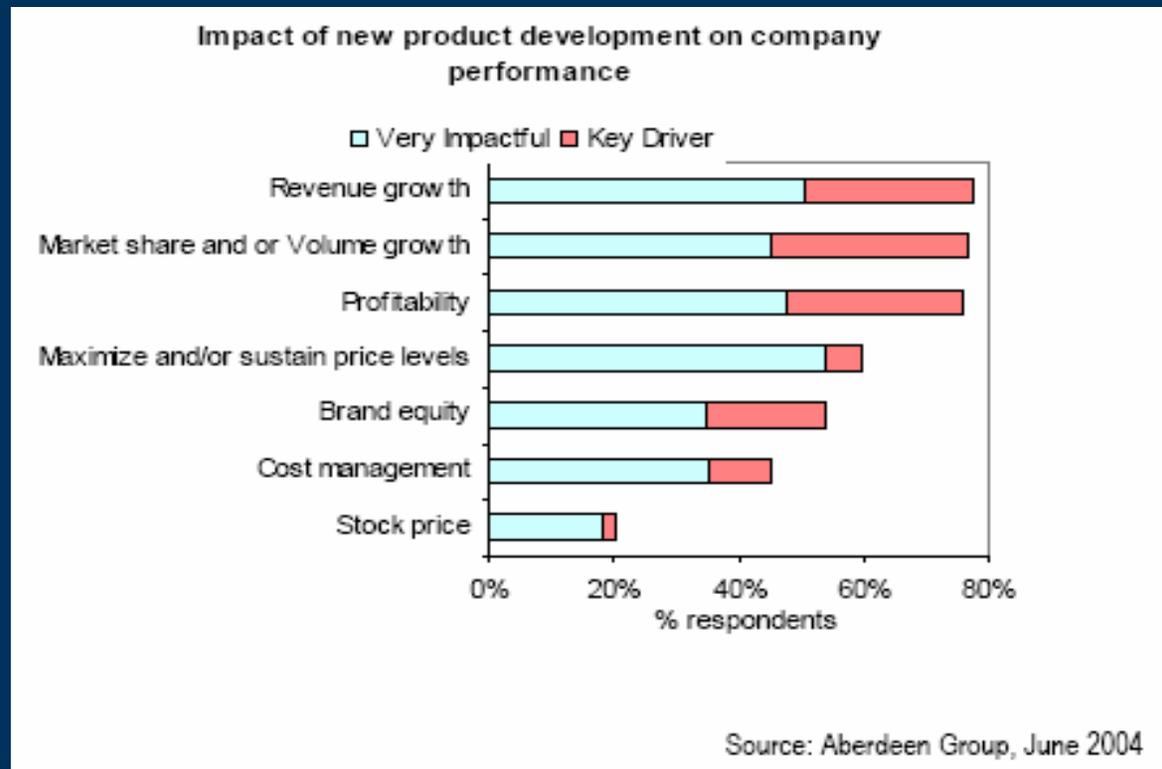
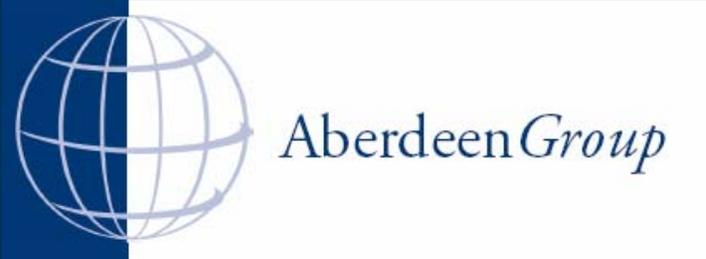
“With so many firms stressing cost-cutting, it might be clever to try, like Intel, to stand out from the crowd.”





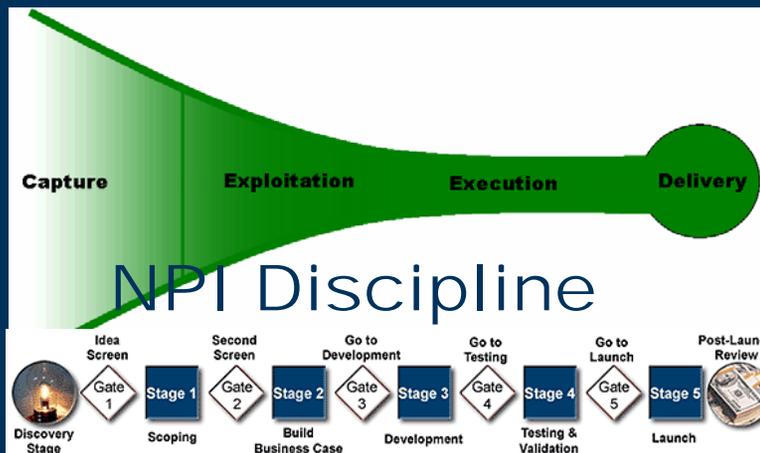
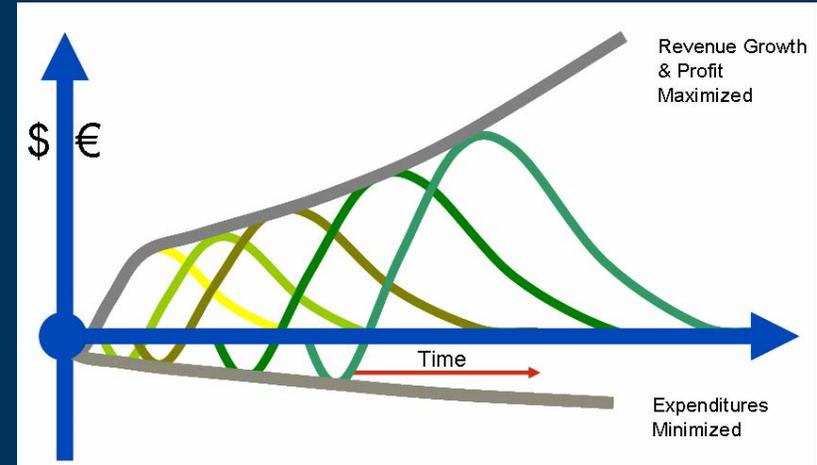
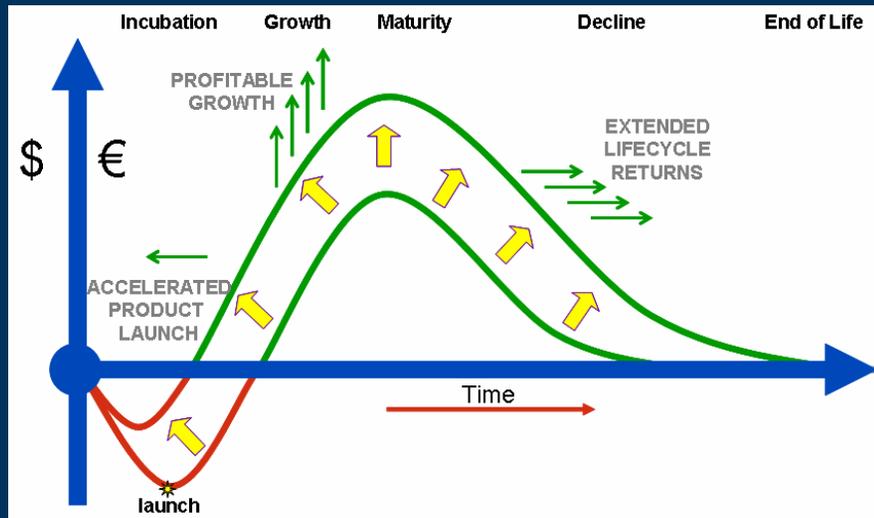
# New Product Development is a Leading Revenue Driver

*Aberdeen's Product Development in the Consumer Industries Benchmark Study* found that more than three-quarters of consumer companies view new product development as a leading driver for revenue, profit, and market share growth. And more than two-thirds of these firms will rely on new products to contribute a growing portion of total revenues over the next three years.





# Growth from Innovation



## Organic growth requires

- Steady drumbeat of Product Introductions
- Faster Time to Market
- Tight connection between Marketing/Engineering
- Platform strategy based options/variants



# UGS Solution Initiatives Impact The Entire Product Lifecycle

<b>NEW PRODUCT DEVELOPMENT</b>	Integrate people and processes
<b>VALUE CHAIN SYNCHRONIZATION</b>	Connect stakeholders and information
<b>KNOWLEDGE/IP MANAGEMENT</b>	Capture, automate and reuse information as knowledge
<b>REGULATORY COMPLIANCE</b>	Document, audit and mitigate risk
<b>PRODUCTION EFFICIENCY</b>	Integrate product and process

▸ Ideation and concept development

▸ Portfolio planning

▸ Obsolescence

▸ sustainment

planning



# Fast to Market with New Product Development

## NEW PRODUCT DEVELOPMENT

**Integrate people and processes** to link key customer processes with the functional execution and management of programs to design, simulate, validate and manufacture Innovative products

## VALUE CHAIN SYNCHRONIZATION

- ▶ Capture, track and verify customer requirements throughout the design process

## KNOWLEDGE/IP MANAGEMENT

- ▶ Capture and reuse the incremental knowledge invested throughout the development process
- ▶ Managed environment with all product information to enable decision support through each phase of the product life cycle

## REGULATORY COMPLIANCE

- ▶ Collaborate globally, refining design concepts ensuring engineering and manufacturing feasibility eliminating time consuming redesign cycles

## PRODUCTION EFFICIENCY

- ▶ Optimize production efficiency and launch readiness with mfg process analysis, BOM and assembly verification



# First to the Market

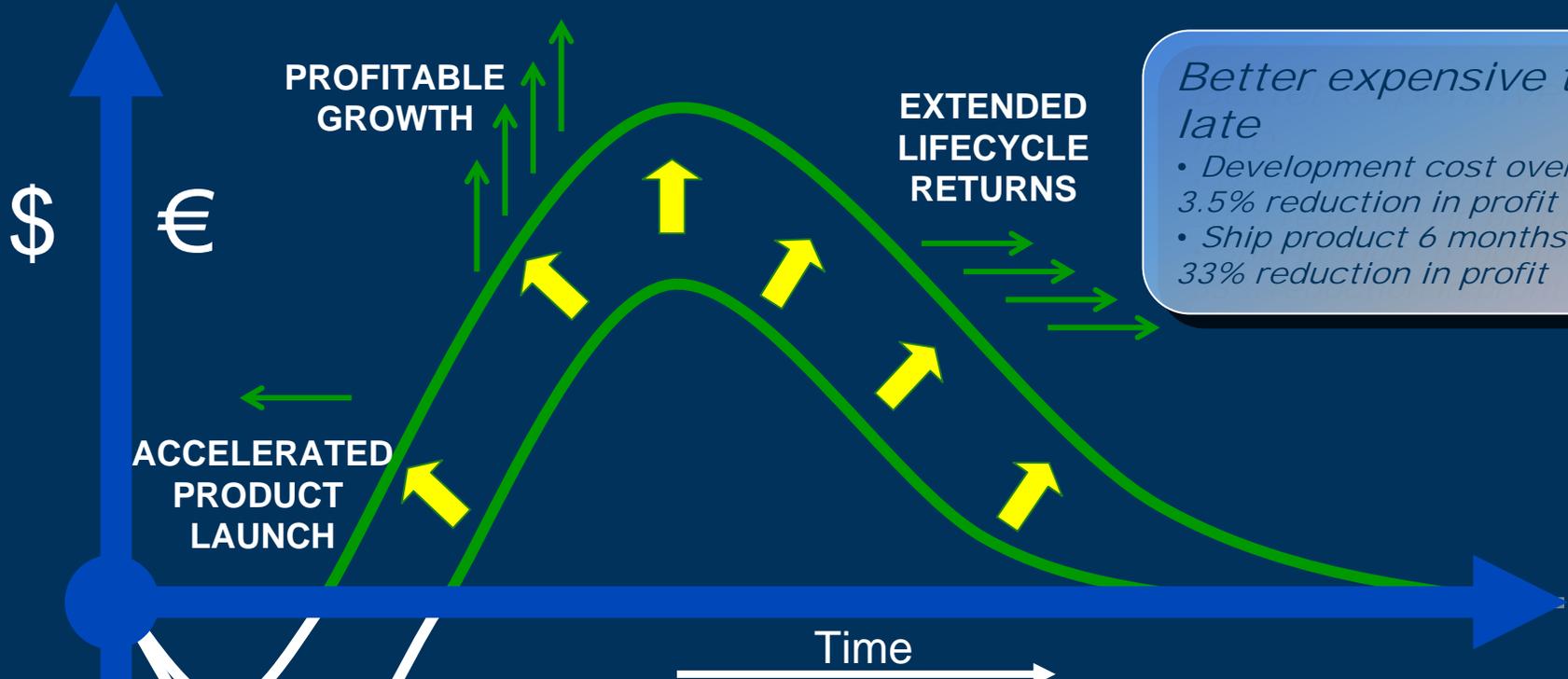
Incubation

Growth

Maturity

Decline

End of Life



*Better expensive than late*

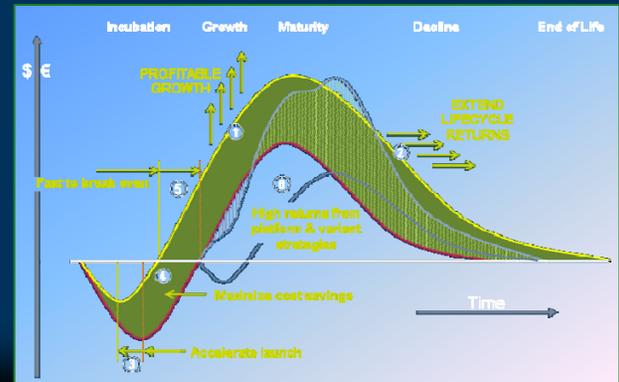
- Development cost overrun → 3.5% reduction in profit
- Ship product 6 months late → 33% reduction in profit

Time

ACCELERATED  
PRODUCT  
LAUNCH

launch

PLATFORM  
AND  
VARIANT  
RETURNS

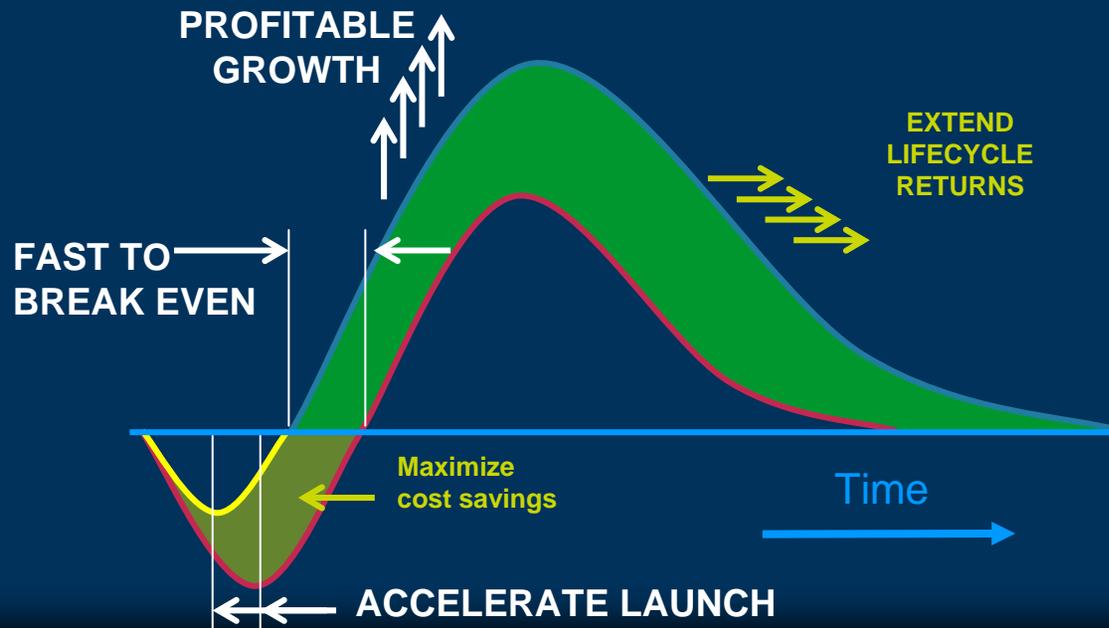




# Impact on New Product Development

## ► Why is this important –

- Being first to market with new technology and products will enable price premiums
- Provide rapid response to market/ customer requirements will enable profitable growth by developing winning products





# UGS Delivers Comprehensive Solutions for New Product Development

**UGS has the richest suite of capabilities to meet the challenges of new product development processes**

- ▶ Re-use knowledge throughout unified development process

- ▶ Early simulation of product performance

- ▶ Validate new product designs to fit existing lines
- ▶ Reduce errors in assembly process

- ▶ Make build methods and location decisions early

- ▶ Manage processes from idea capture to product launch

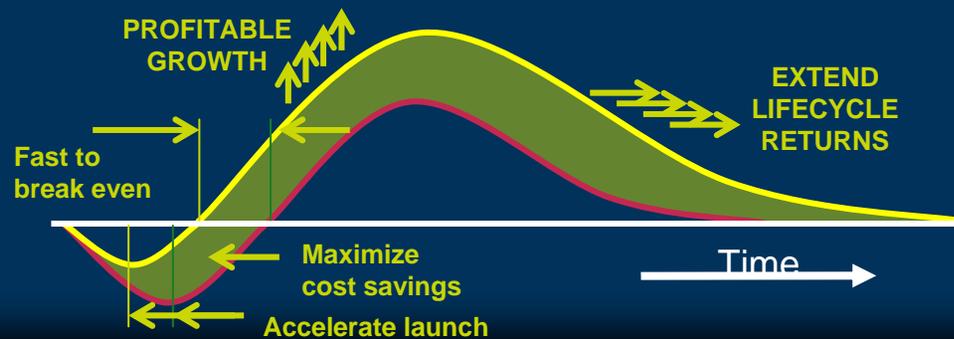
- ▶ Phase gate program and project management tightly linked to engineering process management

- ▶ Open Communities create a wide range of interoperable applications from a variety of suppliers to design, simulate and manufacture innovative products



# UGS Solutions Optimize New Product Development

- ▶ **Program Planning and Control** - enable decision support through each phase of the product development and support life cycle design disciplines and ensures design compliance
- ▶ **Lifecycle Product Management** - enable reuse of intellectual property across the product life, from Concept to End of Life
- ▶ **Globalization and Supply Chain Management** – enable real time collaboration, data access and control throughout the value chain
- ▶ **Concept, Shape and Layout** – refining rapid iteration of design concepts and ensuring engineering and manufacturing feasibility
- ▶ **Detailed Engineering with Options and Variants** – enable knowledge management reuse of model components and building blocks to rapidly develop product designs
- ▶ **Digital Simulation and Validation** – reduce physical prototyping and design iterations with computer simulation and analysis
- ▶ **Manufacturing Process Optimization** – optimize production efficiency with mfg process analysis, BOM and assembly verification

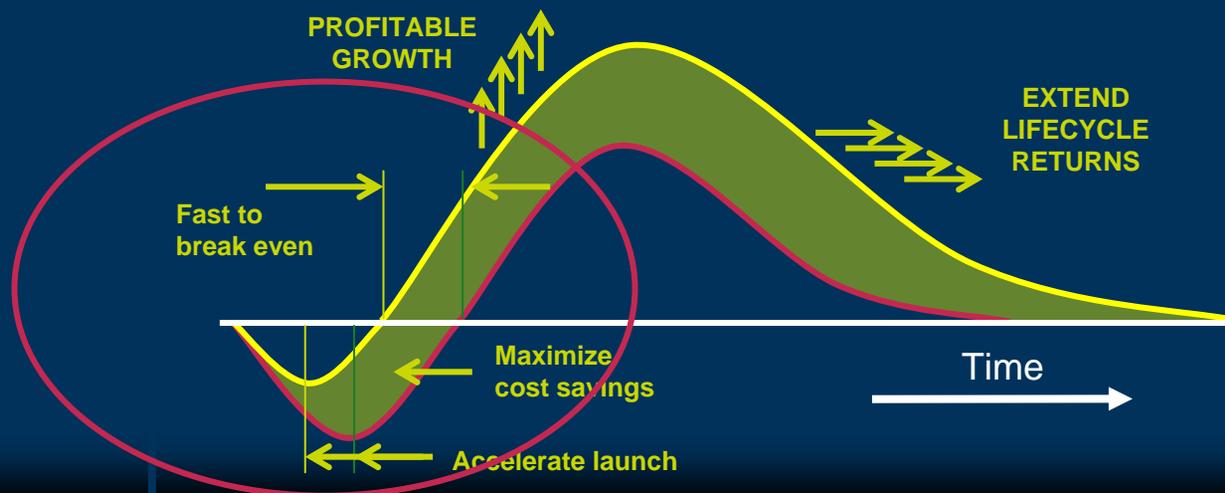




# Innovate New Product Introduction with Program Planning and Control

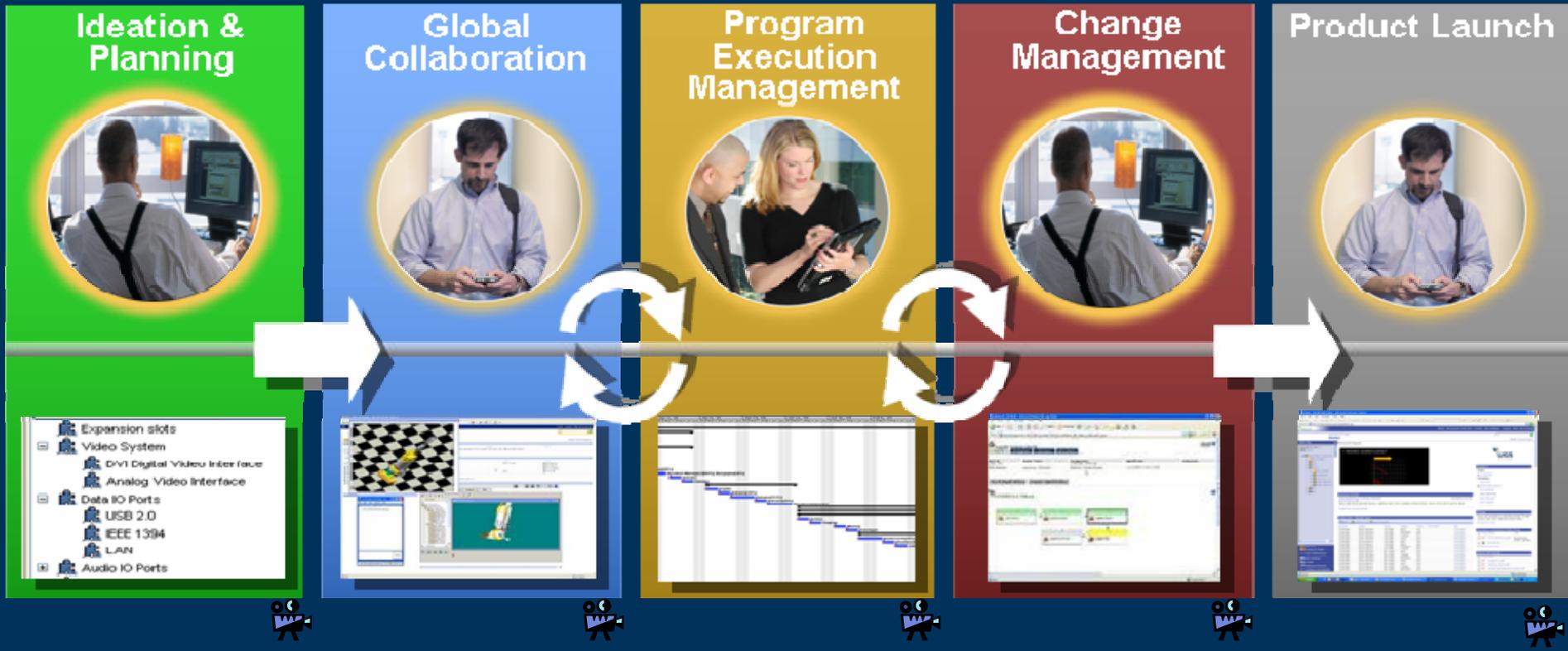
## ■ *Program Planning and Control* –

- **Concept and idea management**
  - Select the right initiatives to drive through the process and foster innovation
- **Program execution management**
  - Drive the product development process and make better decision
- **Requirements management**
  - Enable faster system validation through traceability and verification





# Orchestrating New Product Development



**Phase Gate Process**

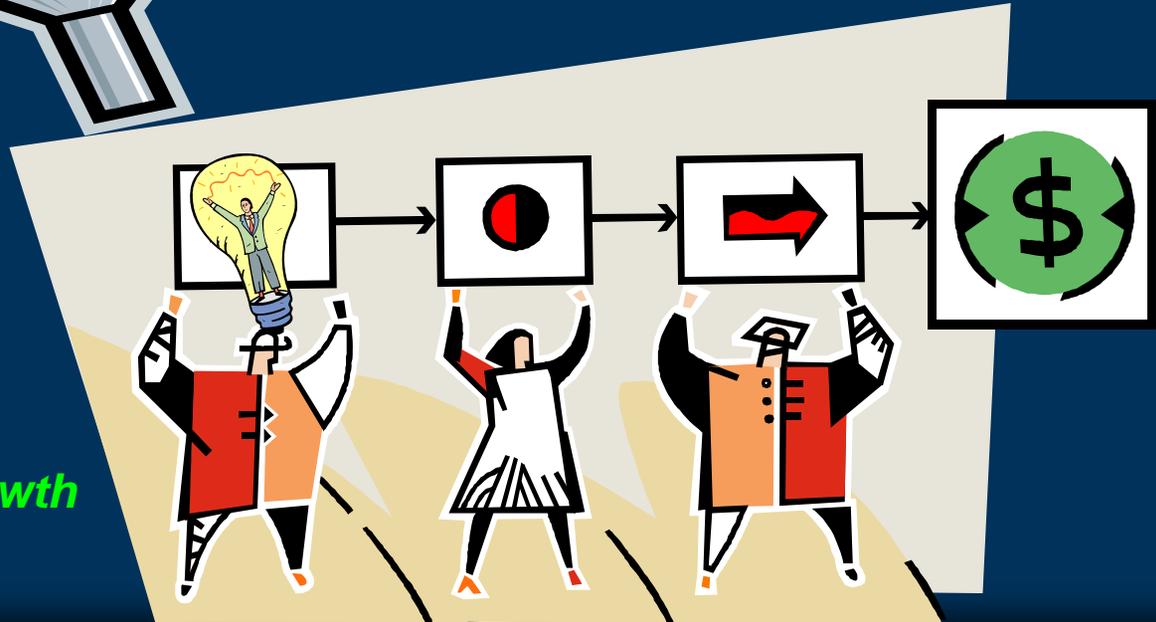


# Ideation – Capturing VOC with Concept and Idea Management



## Customer Value

- Collect ideas in a central location and allow teams to review and evaluate them
- Integrated survey capability allows ideas to be ranked across various user-defined criteria



*Foster Innovation growth*

# Idea capture and evaluation integrated to Teamcenter Requirements

## ► Idea Capture

- Automatically promote Ideas into Requirements
  - Copy Ideas from Teamcenter Community Idea List
  - Paste them into Teamcenter Requirements WebPart to convert them into Requirements

Title	Description	Category	Overall Ranking	Code
<input type="checkbox"/> Long Range ATV - Oversized Fuel Tank	Lower cost alternative to Hybrid ATV - include an oversized Fuel Tank to allow longer treks with the ATV.	General	281	3
<input type="checkbox"/> Turn your ATV into a mobile Wi-Fi Hot Spot - Internet, GPS, Maintenance Manual, Emergency	Always available internet connection to link with sophisticated GPS mapping system, maintenance manual, emergency system, etc.	General	212	3
<input type="checkbox"/> Downloadable 'horn-tunes' TM	Get away from the startling and boring horn sound. Reflect your personality with downloadable horn-tunes.	Youth	212	4
<input type="checkbox"/> Seat Warmer	Stay warm on your ATV in the fall and winter.	General	190	3
<input type="checkbox"/> Xtreme Sport Package - alloy wheel, sport suspension, silver trim	Alloy wheel, sport suspension and sleek silver trim finishes to handle the roughest terrain in style	Professional	189	3

Address: \\Project1\TcC Test

- dfws2
  - Project1
    - Customer Enhancement Requests
    - Design
    - Developer Area
    - FAQ
    - GM MM
    - Organizations
    - Process
    - Product Management
    - Rejected Requirements
    - Release 5 Requirements
    - Release 5.1 Requirements
    - Release 6 Requirements
    - Release 7 Requirements
    - Requirements
    - Snikes

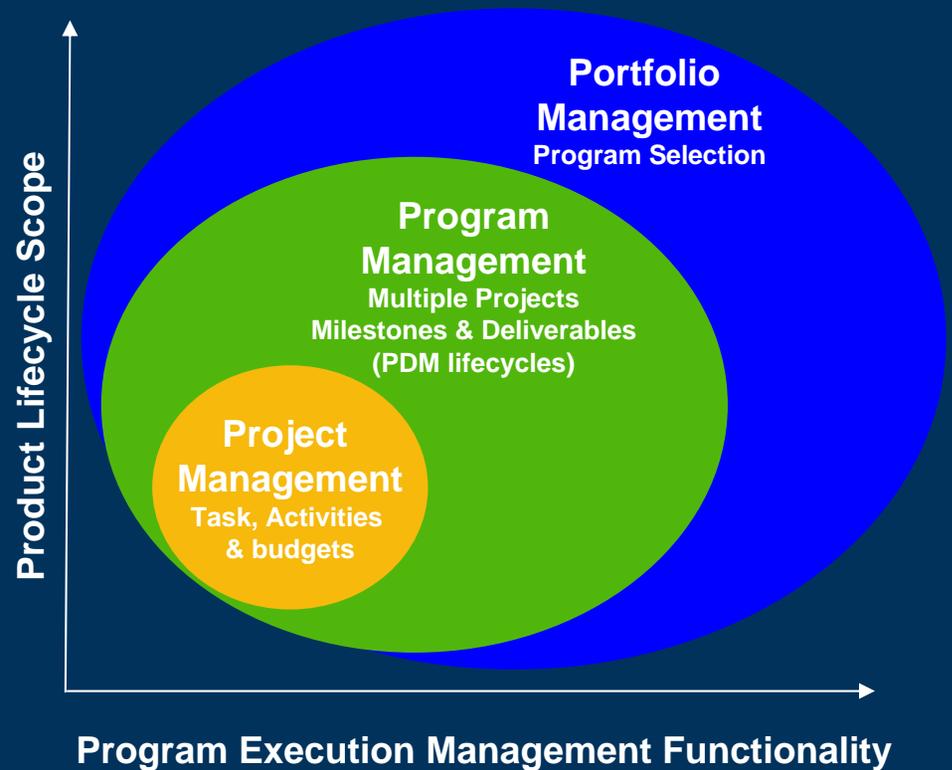


# Program Planning and Control

## Program Execution Management

### *Decision support throughout the product lifecycle ...*

- ▶ Leverage program knowledge and intellectual assets
  - Partners, allies and suppliers
- ▶ In the context of defined business processes
  - Phase-gate
  - Schedule-driven workflow
  - Metrics
  - Thresholds and triggers
- ▶ To meet business objectives (revenue/growth, investment, cost, quality, timing)



*Enabling a project schedule to drive process automation*



# Teamcenter Project Planning and Phase-Gate Automation

Workplace View - HP New Workstation 11000 - Microsoft Internet Explorer

LOG OUT PERSONALIZE Teamcenter

Schedule Collaboration Documents Team Members

File Edit Schedule Documents Team Help

<click here to add tasks> Work 8h Filter by: All Tasks View: Zoom: View By Qtrs Active Baseline: Phase 1

Name	Scheduled Start	Status	Sc
HP New Workstation 11000			
1 About the NPD&L template	Sep 29, 2004	Complete	Se
2 Product Line Planning Phase	Oct 4, 2004	In Progress	Oc
14 Product Line Planning Gate	Nov 1, 2004	Complete	No
15 Product Line Planning Complete	Nov 1, 2004	Complete	No
16 Requirements Phase	Nov 1, 2004	Complete	De
30 Requirements Gate	Dec 13, 2004	Complete	De
31 Requirements Complete	Dec 13, 2004	Not Started	De
32 Development Phase	Dec 14, 2004	In Progress	De
33 Development Phase Start	Dec 14, 2004	Not Started	De
34 PRODUCT DEVELOPMENT			
35 Software Development			
36 Software Engineering			
37 Architect/Design	Dec 14, 2004	In Progress	De
38 Develop Software	Dec 28, 2004	Not Started	Fel
39 Integrate	Mar 1, 2005	Not Started	Ma
40 Product Test	Feb 28, 2005	Not Started	Fel
41 Code Complete	Mar 21, 2005	Not Started	Ma
42 Install scripts (new and upgrades)	Mar 21, 2005	In Progress	De
52 Candidate Final Code	Mar 21, 2005	Not Started	Ma
56 Software Development Infrastructure			
56 Graphics Development			
56 Documentation Development			
56 Testing			
56 Beta Program			
56 Localization			
56 Marketing Development			
56 Services Development			
56 Development Phase Gate			

Qtr 4, 2004 Qtr 1, 2005 Qtr 2, 2005 Qtr 3, 2005

Oct Nov Dec Jan Feb Mar Apr May Jun Jul

9/29/04 Product Line Planning Phase

11/1/04 Product Line Planning Gate

12/13/04 Requirements Gate

12/14/04 Development Phase

2/28/05 Code Complete

2/28/05 Integrate

2/28/05 Develop Software

2/28/05 Architect/Design

2/28/05 Install scripts (new and upgrades)

2/28/05 Candidate Final Code

2/28/05 Software Development Infrastructure

2/28/05 Graphics Development

2/28/05 Documentation Development

2/28/05 Testing

2/28/05 Beta Program

2/28/05 Localization

2/28/05 Marketing Development

2/28/05 Services Development

2/28/05 Development Phase Gate

Deliverable

Workflow

Gate Criteria

Milestone

Phase

Gate

Workplace: HP New Workstation 11000, total 161 tasks, 1 selected.

Local intranet

# Program Execution Management

The screenshot shows the Teamcenter Project Personal View interface. The main content area displays a tabular list of deliverables and tasks for the project 'HP New Workstation 11000 - Requirements Phase'. A yellow callout box highlights that drilling down produces a tabulated list of outstanding deliverables with the following characteristics:

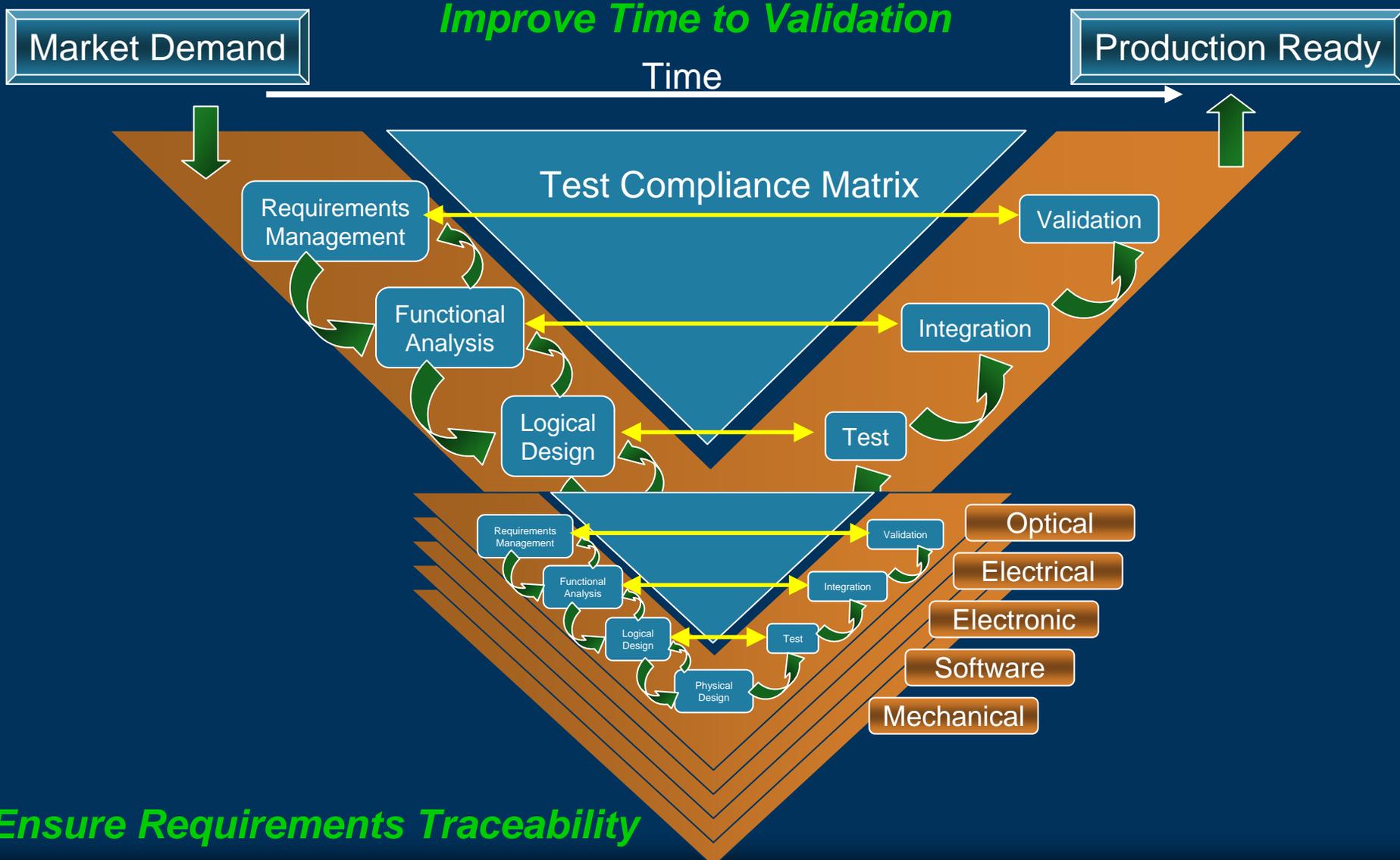
1. Due date of deliverable
2. Deliverable name
3. Current progress of deliverable
4. Task which Deliverable is associated to

A purple arrow points from the callout box to the 'Tasks' column in the table below.

Due Date	Deliverables	Deliverable Status	Tasks
Oct 8, 2004	<a href="#">ProFormas</a>	Not started	<a href="#">Perform Financial Analysis</a>
Oct 15, 2004	<a href="#">MarketResearchDoc</a>	Not started	<a href="#">Perform Market Analysis/Sizing by Target Market/Country</a>
Oct 15, 2004	<a href="#">PosnMatrix</a>	Not started	<a href="#">Determine Customer Segmentation</a>
Nov 22, 2004	<a href="#">MRD</a>	Completed	<a href="#">Create &amp; Finalize MRD</a>
Nov 24, 2004	<a href="#">Final Design Document</a>	Not Completed	<a href="#">Create Final Product Plan</a>
Nov 26, 2004	<a href="#">FuncReqsSpec</a>	Not started	<a href="#">Determine Functional Requirements</a>
Nov 26, 2004	<a href="#">InitialSRS</a>	In Progress	<a href="#">Determine Functional Requirements</a>
Dec 3, 2004	<a href="#">Analysis Report</a>	Not Completed	<a href="#">Determine Technical Requirements</a>
Dec 10, 2004	<a href="#">SRS</a>	Not started	<a href="#">Assemble SRS</a>



# Requirements Management Traceability and Validation





# Demo





# Enabling world class new product development takes vision

## 'As Is'

Lack of oversight & leadership

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Conflicting behavioral drivers across organizations

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Lack of focus across organizations

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Communication difficulties between organizations

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Lack of integrated processes & systems across organizations

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Open loop processes

## Vision

**Integrated strategic portfolio planning program & execution management**

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**Collaborative business decision framework**

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**Market, customer & regulatory requirements management**

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**Real time collaboration for all participants**

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**Optimized & repeatable processes tied together**

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**Validated closed loop processes for continuous improvement**



# Success

Turning a concept into a profitable product is not an easy task. It requires coordinating the innovation efforts of many to meet a common goal

## ▶ Top performers

- Four times more likely to have integrated data and process automation,
- Three times more likely to measure key performance indicators
- 60% have a chief product officer, or equivalent, compared to less than 25% generally.
- Four times more likely to have PLM-related technology

