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The Key Why And How Of CMMI

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CMMI Made Practical
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The Purpose Of This Presentation



Across the world there is an increasing interest in the Carnegie Mellon Software Engineering Institute's CMMI model. These slides provide a perspective of what the market drivers for this growing interest are and why businesses are starting to use CMMI as a strategic differentiator. These slides also outline the material benefits that can be seen to flow from the use of CMMI and discuss some of the key implementation issues that need to be overcome if the model is to be successfully deployed.

Key Lessons: *avoid complacency and be responsive to business pressures*



#1: We will always have to demonstrate high business value



#2: We will always need to be alert and responsive - the future is never assured

Market Drivers: *businesses fail to realise value from their IT investment*



Some Facts

- **About 95% of companies have a formal IT strategy which in most cases is "reasonably" aligned to the business strategy (~80%)¹**
- **However, research concludes that there is no evidence that IT spending levels positively correlate to companies' productivity (IT productivity paradox)²**
- **Paradoxically, 80% of strategic decisions related to IT are only based on "gut feeling"³**
- **Businesses typically waste 20 % of corporate IT budgets on investments which fail to achieve their objectives³**
- **The companies that manage their IT most successfully generate returns as much as 40% higher than their competitors⁴**

1) The Compass World IT Strategy Census 2001

2) Information Productivity, P. Strassmann 1999, Information Economic Press

3) Gartner Symposium News Preview 2002, Florence, Italy

4) Accenture project experience

5) Harvard Business Review, Nov 2002, Six IT decisions your IT people shouldn't make, Ross/Weill

Typical Signs and Symptoms⁴

Not doing the right things:

- IT vision and strategic objectives are not aligned with the business strategy resulting in many small, fragmented projects
- Large number of "unbudgeted" projects as well as large number of budgeted but not commenced projects
- Major one-off cost cutting initiatives typically lacking a good decision basis and running the risk to curtail IT with a short-term view
- User satisfaction with IT is low

Not doing things right:

- Kicking off of too many IT projects in parallel with neither an adequate selection process upfront nor a stringent steering and controlling during project execution
- No portfolio view of projects: conflicts or commonalities amongst programs and projects are not understood and not managed
- Skill shortages, as scarce resources are involved in many projects without being able to deliver expected results
- Realization of targeted benefits after deployment remains questionable

Patterns of IT spending:

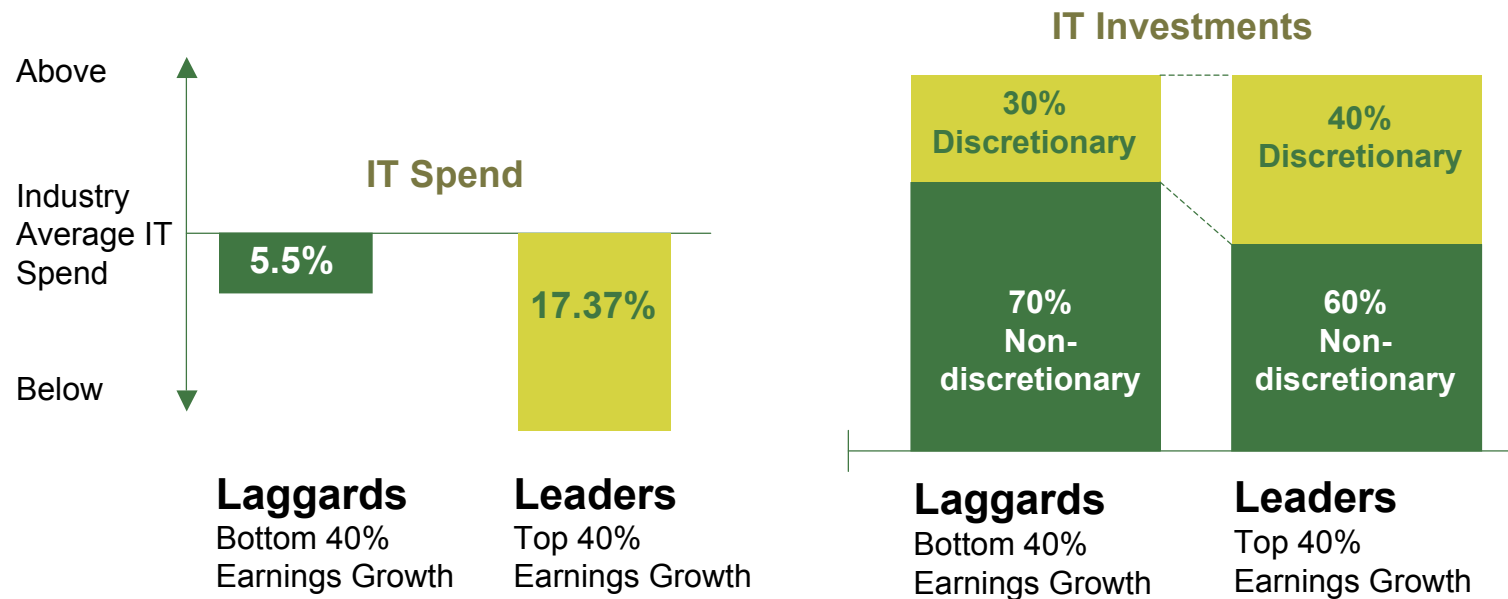
- IT spending is not transparent - users do not see what they get for their IT charges
- No or only rudimentary business cases are prepared
- Duplication of IT investments across countries and/or business units

Strategic Differentiator: CMMI helps reduce and control IT spending



Firms with superior earnings growth spend less on IT...

...and they are able to free-up more IT investment on new productivity



Source: Accenture survey of 112 manufacturing and distribution firms

Business Benefits: *Implementation improves productivity and morale*



- **Depending on work phase 17% to 25+% cumulative productivity gains are typical**
 - Reduce risk through increased predictability in delivery cost and reduced variability in delivery schedule
 - Early elimination of potential problems from work products reduces cost
- **Industrialisation and professionalism drives better staff engagement and motivation**

Productivity Gains: *depending on work phase 17% to 25+% are typical*



SAMPLE PRODUCTIVITY METRICS	Performance (Averaged)	
	Measurement Unit	Pre vs Post CMMI/L3 Performance
1. Requirements Management	person days	50% Reduction
2. Impact Assessment	days per work object	43% Reduction
3. Design Reverse Engineering	person days	33% Reduction
4. Test Coverage	cases per drop	300% Increase
5. Regression Testing Efforts	days per drop	80% Reduction
6. Unit Level Testing	days per work object	50% Reduction
7. Code Review Effort	days per work object	33% Reduction
8. Code Freeze Duration	days prior to a drop	80% Reduction
9. Work Objects per drop	number	67% Increase
10. Drop Frequency	drops per month	No restriction

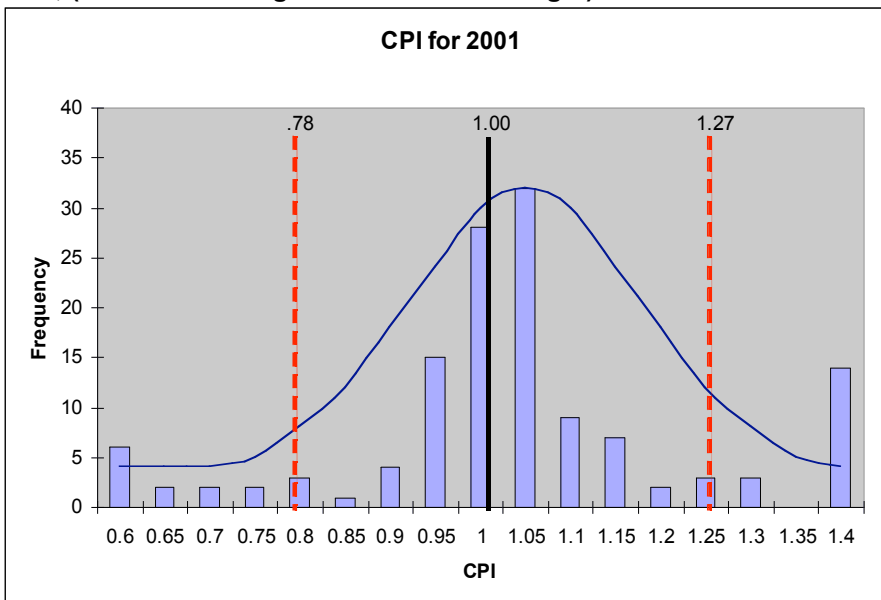
Risk Reduction: *achieved through improved cost predictability*



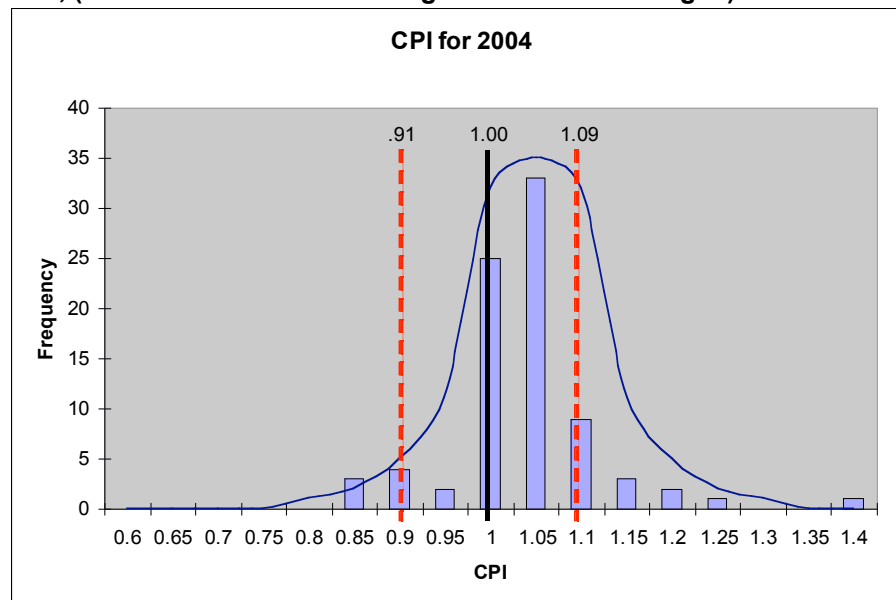
Cost Performance Index (CPI) measures the ability of projects to meet their planned effort. Vastly improved the ability to set and meet client expectations for cost.

- Improving Predictability.
- Increasing Client Confidence.
- Decreasing Risk.

In 2001, projects reported CPI between .777 and 1.267, a range of .49, (22% below budget to 27% above budget).



In 2004, projects reported CPI between .913 and 1.092, a range of .18, (narrowed to 9% below budget to 9% above budget.)



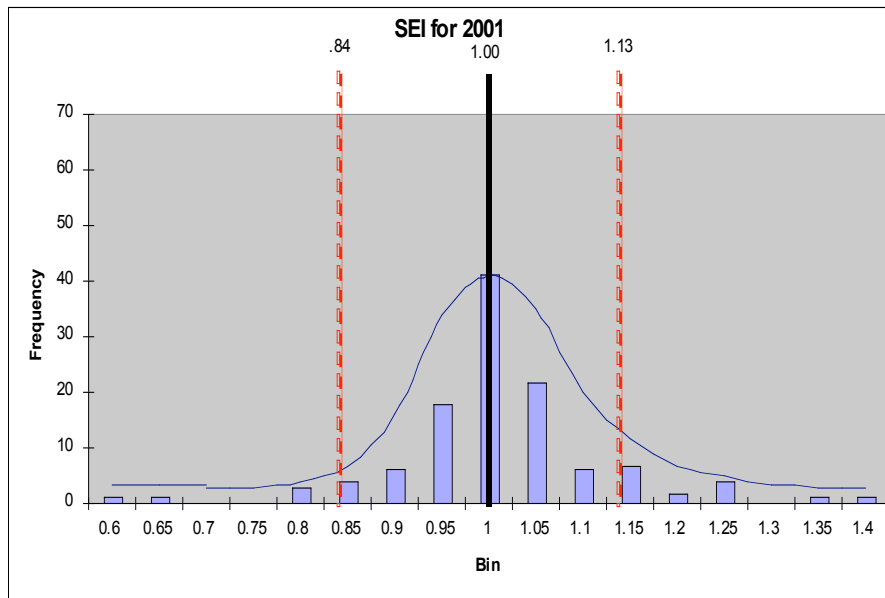
Risk Reduction: *achieved through reduced delivery schedule variability*



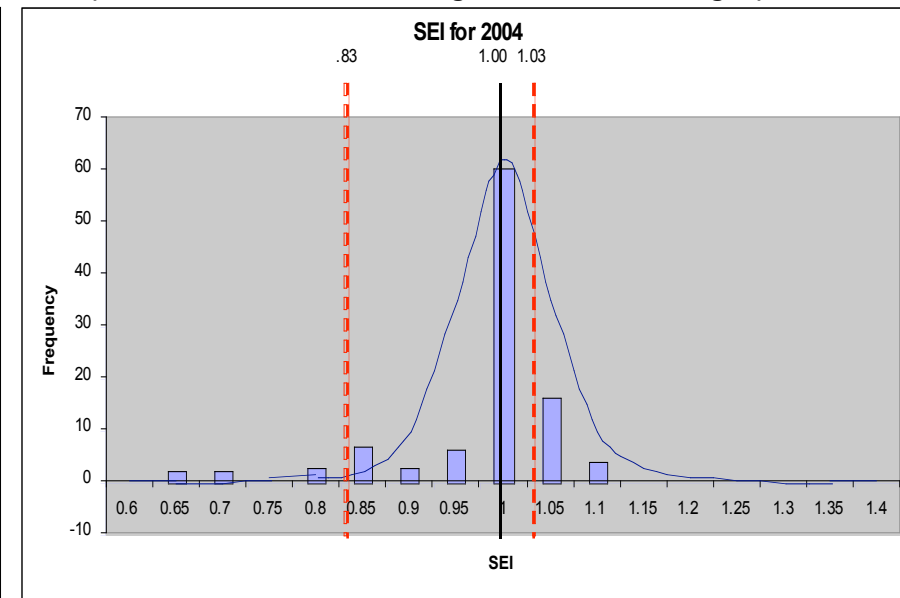
Schedule Efficiency Index (SEI) measures the ability of projects to meet their planned delivery dates. Vastly improved the ability to set and meet client expectations for schedule.

- Reducing Overtime.
- Fewer Missed Deadlines.
- Decreasing Risk.

In 2001, projects reported SEI between .842 and 1.132, a range of .29, (16% below budget to 13% above budget).



In 2004, projects reported SEI between .834 and 1.027, a range of .19, (narrowed to 17% below budget to 3% above budget.)



Cost Reduction: *early elimination of potential problems from work products*



Process Maturity Level	Requirements	Design	Construction	Functional Test	System Test	Field Use	PHASE
		10%	40%	50%			
5	5%	20%	40%	20%	10%	<5%	Fault Detection Distribution
4	3%	12%	30%	30%	20%	5%	
3	0%	2%	20%	38%	32%	8%	
2	0%	0%	3%	30%	50%	17%	
1	0%	0%	2%	15%	50%	33%	

On average, it is ten times more costly to fix a problem in a subsequent phase of work - cost to fix a problem by phase:

REQUIREMENTS \$1 DESIGN \$5 CODING \$20 TESTING \$50 MAINTENANCE \$100 (Post Production)

Sources: Rakitin, Steven R., Software Verification and Validation for Practitioners and Managers, Norwood, MA: Artech House 2001, pgs 45-49; and Boehm, B.W., Software Engineering Economics, Englewood Cliffs, NJ: Prentice-Hall, 1981.

Improved Morale: *Industrialisation and professionalism have a positive impact*

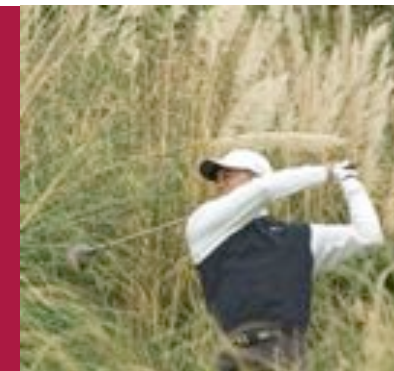


We get strong positive feed back from employee pulse groups and satisfaction surveys

A selection of quotes from the many testimonials that we continue to receive:

- *“We also got an interesting side effect since the client personnel working on the project are also using our delivery methods. It is now fully transparent how both the client and ourselves are performing in the different areas. Last but not least our people really like to use the methods.”*
- *“It's great to be able to measure, reference and compare how we're doing against the prescribed guidelines and also compared to other projects.”*
- *“... has given us the required focus and helped us in maintaining our high standards. It has helped us in taking a step back and regularly reviewing what we're doing.”*
- *“... we are able to better keep track of the project progress, efficiently predict and reduce project risks, and strongly enforce our delivery methods for higher quality project output.”*

Key Implementation Issues: *too rigid work methods and creating clear value*



- **Industrialising what people should do is hard**
 - Requirements and operating circumstances keep changing and evolving
 - Emergence of transient service processes
 - Reliance upon proxy performance data
 - Empowerment/”ability to react” is now a critical characteristic
 - New design principles and standards are needed ...
 - Flexibility
 - Robustness
 - Adaptability
- **Maintaining motivation is difficult**
 - Act of faith business case
 - Early wins are less tangible and more anecdotal
 - Systemic improvement appear in next financial year
 - Average lifespan of S&P 500 company is now only 15 years (predicted to be 10 years by 2020)
 - Less than 1 in 10 companies outperforms industry peer group over more than 10 years

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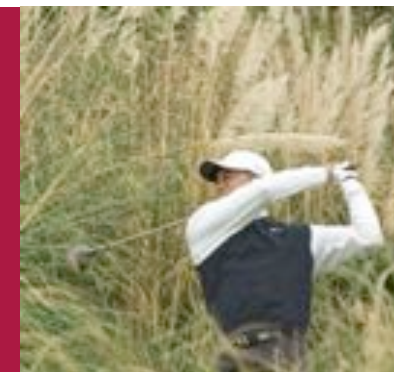
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BACKGROUND MATERIAL

ACCENTURE BACKGROUND

The scale of our business



Revenues Before Reimbursements	Fiscal Year 2005
Communications & High Tech	\$4.00 billion
Financial Services	\$3.41 billion
Government	\$2.17 billion
Products	\$3.57 billion
Resources	\$2.39 billion
Total	\$15.55 billion

- ❖ **Accenture serves approximately 2,500 clients that span the full range of industries around the world.**
- ❖ **We serve 84 of the *Fortune* Global 100, two-thirds of the *Fortune* Global 500 and government agencies in 26 countries.**
- ❖ **Of our top 100 clients in fiscal 2005, 96 have been clients for at least five years and 83 have been clients for at least 10 years.**

ACCENTURE BACKGROUND

Who we are and what we do



- **At Accenture, we use our industry and business process knowledge, our service offering expertise and our insight into existing and emerging technologies to identify new business and technology trends. We help clients:**
 - Identify and enter new markets
 - Increase revenues in existing markets
 - Improve operational performance
 - Deliver their products and services more effectively and efficiently
- **Services we offer include:**
 - Business consulting
 - Systems integration
 - Application outsourcing
 - IT infrastructure outsourcing
 - Business process outsourcing

ACCENTURE BACKGROUND

How we organise our people



- Accenture operates under a global workforce model, integrating our world-class business, technology and outsourcing skills to maximize the results delivered and improve performance

Accenture Workforce	Consulting Workforce	Solutions Workforce	Services Workforce
Three distinct workforces are combined into multidisciplinary teams, providing the right skills for each task at an optimum cost	Has highly diverse business skills to develop business strategies and build unique solutions, linking people, process and technology	Has deep technical expertise in the area of IT applications to deliver cost-effective, market-relevant technology solutions	Has high-quality development and specialty skills, and delivers long-term contracted services
~110,000 people	~40,000 people	~27,000 people	~41,000 people

