

Balancing Process, Innovation, and Risk

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September 10, 2009
JUSE Software Quality Symposium, Tokyo

The Questions

Does process discipline, e.g., implementing a best practices framework such as the CMMI for Development, cause a high maturity organization to be:

- **bureaucratic?**
- **risk averse?**

Does process discipline cripple creativity?

What is the relationship between process discipline, creativity, and risk-taking?

Starting Position

Discipline is good...

Innovation and creativity are good...

A willingness to take (reasonable) risks is essential to business success...

These are not (necessarily) competing requirements.

At 3M...

James McNerney hired as CEO of 3M from GE in 2000... left for Boeing after 4½ years

A company that prided itself on drawing at least 1/3 of sales from products released in the past five years slipped to ¼

Vijay Govindarajan: “The more you hardwire a company on total quality management, the more it is going to hurt breakthrough innovation. The mindset that is needed, the metrics that are needed, the whole culture that is needed for discontinuous innovation, are fundamentally different.”

Six Sigma and Innovation at 3M

Tom Davenport: “Process management is a good thing. But I think it always has to be leavened a bit with a focus on innovation and customer relationships.”

Research by Benner and Tushman suggests that Six Sigma will lead to more incremental innovation at the expense of more blue-sky work.

Would you rather own the world’s most innovative company with a lackluster stock price and profit growth or the 7th most innovative company with 22% per year profit growth?

Discipline versus Creativity

No matter how deep the need for creativity in a field, there is always a need for a more formal framework to nurture and support that creativity.

Murray Gell-Man: “Any art that’s worth the name has some kind of discipline associated with it.”

Yo-Yo Ma: “Creativity is not a result of instinct. Rather it is the endless conflict between discipline and intuition.”

R.L. Glass and T. DeMarco, Software Creativity 2.0, 2006.

The Naïve Approach

Hire really smart, creative people.

Be aggressive in pursuing opportunities.

Don't fall prey to bureaucracy.

...

Be smart and work hard!

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What Business Are You In?

Operational excellence... providing customers with reliable products or services at competitive prices, delivered with minimal difficulty or inconvenience.

Product leadership... offer products that push performance boundaries... continually redefined the state of the art.

Customer intimacy... focus on delivering not what the market wants but what specific customers want... a total solution, not just a product or service.

M. Treacy and F. Wiersema, The Discipline of Market Leaders, 1997.

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The Business of Innovation

If innovation is your business, put innovation in the driver's seat.

The competitive business of innovation requires continual trial, and ongoing program of experimentation.

A. Axelrod, Edison on Innovation, 2008.

Axelrod – Thomas Edison

Genius is 99% perspiration and 1% inspiration.

Edison almost never worked from the top down. Instead, he naturally took a bottom-up approach, typically conceiving an idea, sketching approaches for its practical realization, and then building prototypes – which he observed, manipulated, and modified until he had fashioned a satisfactory solution to whatever problem he had defined.

Whereas knowledge pointed the direction... ignorance opened the mind by obliging the ignorant experimenter to try every conceivable approach.

Drucker's Sources of Innovation

Within a company or industry:

- Unexpected occurrences
- Incongruities
- Process needs
- Industry and market changes

Outside a company:

- Demographic changes
- Changes in perception
- New knowledge

P.F. Drucker, [Innovation and Entrepreneurship: Practices and Principles, 1985.](#)

Sutton – Weird Ideas That Work

Exploiting old ideas versus exploring new possibilities... both are necessary for moving forward. The real question is what proportion of the firm's time and money should be spent on which.

Driving out variation makes sense when organizations do proven things in proven ways that still work.

Variance in people, knowledge, activities, and organizational structures is crucial to creativity and innovation.

Famous creators generated a wider range of ideas and completed more products than their contemporaries. They didn't succeed at a higher rate than others. They simply did more.

Most new ideas are bad and most old ideas are good.

Doing routine work with proven methods is the right thing to do most of the time.

Management Practices That Work (1 of 4)

Conventional Ideas That Work	Weird Ideas That Work
1. Hire “fast learners” (of the organizational code).	1. Hire “slow learners” (of the organizational code).
1.5 Hire people who make you feel comfortable, whom you like.	1.5 Hire people who make you uncomfortable, even those you dislike.
2. Hire people you (probably) do need.	2. Hire people you (probably) don’t need.
3. Use job interviews to screen and, especially, to recruit new employees.	3. Use job interviews to get ideas, not to screen candidates.

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Management Practices That Work (2 of 4)

Conventional Ideas That Work	Weird Ideas That Work
4. Encourage people to pay attention to and obey their bosses and peers.	4. Encourage people to ignore and defy superiors and peers.
5. Find some happy people, and make sure they don’t fight.	5. Find some happy people, and get them to fight.
6. Reward success, punish failure and inaction.	6. Reward success and failure, punish inaction.

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Management Practices That Work (3 of 4)

Conventional Ideas That Work	Weird Ideas That Work
7. Decide to do something that will probably succeed, then convince yourself and everyone else that success is certain.	7. Decide to do something that will probably fail, then convince yourself and everyone else that success is certain.
8. Think of some sound or practical things to do, and plan to do them.	8. Think of some ridiculous or impractical things to do, then plan to do them.
9. Seek out and be attentive to people who will evaluate and endorse the work.	9. Avoid, distract, and bore customers, critics, and anyone who just wants to talk about money.

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Management Practices That Work (4 of 4)

Conventional Ideas That Work	Weird Ideas That Work
10. Learn everything you can from people who seem to have solved the problem you face.	10. Don't try to learn anything from people who say they have solved the problem you face.
11. Remember and replicate your company's past successes.	11. Forget the past, especially your company's successes.
<i>Summary: Efficiency indicates effectiveness in the implementation and use of proven ideas.</i>	<i>Summary: Creative companies and teams are inefficient (and often annoying) places to work.</i>

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*CMMI-DEV v1.2 Process Management – Level 5 OID
Organizational Innovation & Deployment*

Select and deploy incremental and innovative improvements that measurably improve the organization's processes and technologies.

Specific Goals

- 1) Select improvements.**
- 2) Deploy improvements.**

What is not addressed:

- being creative***
- creating an innovative organization***

Innovation in Other Frameworks

ISO 9004

- 10.1 “An organization should use innovation to continually improve its effectiveness and operational efficiency, as an additional route towards achieving sustainability.”
- 10.4.2 Innovation includes technology, product, business model, organization, processes

eSourcing Capability Model for Service Providers

- ppl01 Encourage innovation: Establish and implement a policy to encourage and support innovation across the organization.
- prf11 Deploy innovations: Establish and implement programs to deploy innovations across the organization.

Avoiding Risk

In the real world, there are many unavoidable risks.

- **risk taking is essential to good decisions and good management**

Society values risk taking, but not gambling.

- **society defines gambling as risk taking that turns out badly**

The result is risk denial.

The Problem of Risk Aversion

Companies that use risky, unusual practices perform either much better or much worse than average, especially compared to those who do what most other companies do.

If only the best, not the worst, performers are observed, performance will seem to be associated with strategies that are far more likely to kill a company than to result in superior performance.

J. Pfeffer and R.I. Sutton, *Hard Facts, Dangerous Half-Truths, & Total Nonsense: Profiting from Evidence-Based Management*, 2006.

CMMI-DEV v1.2 Project Management – Level 3 RSKM
Risk Management

Identify potential problems before they occur so that risk-handling activities can be planned and invoked as needed across the life of the product or project to mitigate adverse impacts on achieving objectives.

Specific Goals

- 1) Prepare for risk management.
- 2) Identify and analyze risks.
- 3) Mitigate risks.

What is not addressed:

- ***combination risks → normal accidents (Perrow)***
- ***holistic risk management → across life cycle, portfolio***

Risk Management in Other Frameworks

ISO 9001: “This International Standard does not include requirements specific to... risk management”

eSourcing Capability Model for Service Providers

- **thr01 Risk management: Establish and implement a policy on risk management.**
- **thr02 Engagement risk: Identify, assess, and manage risks specific to the client engagement.**
- **thr03 Risk across engagements: Establish and implement procedures to manage risks across client engagements.**

Concluding Thoughts

Frameworks such as CMMI for Development, ISO 9001, and eSCM-SP do not necessarily stifle creativity or encourage risk aversion.

They do require deploying useful innovations and managing risks.

Human nature all too frequently avoids disruptive change and reacts irrationally to risk due to systematic fallacies in the ways we think.

- *R. Hastie and R.M. Dawes, [Rational Choice in an Uncertain World: The Psychology of Judgment and Decision Making](#), 2001.*

Questions and Answers



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