Large-Scale Creative Work

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Topics

What do

- the bureaucracy
- a nuclear submarine
- Star Wars

have in common?

The Bureaucracy

Bureaucracies
- handle routine work
- prevent recurring problems

Each bureaucratic staff has specialized rules.

Bureaucracies become complex and powerful.

A War Story 1

IBM: new line of computers

- hardware being delivered
- software schedules slipped three times
- director of software was fired
- we had no plans

A War Story 2

IBM: new line of computers

- hardware being delivered
- software schedules slipped three times
- director of software was fired
- we had no plans

I got the job to lead the software group.

My software group had:

- 4,000 people
- 15 laboratories
- 6 countries

A War Story 3

Needed procedures:

- approved plans
- my approval

It worked:

Met all dates for 2_ years

The Review Bureaucracy 1

Planning bureaucracy

Not a development process

We didn't own it and could no longer change it.

The Review Bureaucracy 2

Grew and mutated:

- included marketing, service, quality assurance, finance, forecasting, others
- major development task
- less time for creative work

The Submarine *Scorpion* 1

May 1968, *Scorpion* was lost at sea.

Navy knew last reported location.

Vague idea of
- heading
- speed
- problem

Loaded with nuclear-tipped missiles and secret gear.

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The Submarine *Scorpion* 2

Group of specialists:

- submariners, mathematicians
- submarine specialists, salvage experts
- others

Mathematical model

Model parameters:

- when the sub ran into trouble
- how fast it was going
- its heading
- its rate of descent when sinking
- etc.

The Submarine Scorpion 3

500 square miles of deep ocean.

Where to start?

Last known location

The Submarine *Scorpion* 4

Specialists made judgments; model run.

Navy salvage vessel found wreckage 220 yards away.

The Power of Teams

Groups can do incredible things

Must have
- proper mix of talents
- requisite skills
- proper motivation

The challenge:
Harness potential creativity of teams

Star Wars

Large organizations need bureaucracies, but

- can sap team energy
- inhibit creative work

There is an answer.

It is like The Force.

Requires faith, but it can overcome the Evil Empire.

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Another War Story 1

Peggy was a project manager.

New version of IBM COBOL compiler

Stalled at announcement review:

- marketing wanted added functions
- functions did not make business sense

Another War Story 2

New functions would

- add cost
- increase price
- delay delivery

Customers agreed

Key issue: schedule

Another War Story 3

The team was committed.

Complete and thorough plan.

Used data from prior release.

Team would meet the schedule, come hell or high water.

Peggy trusted the team.

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Another War Story 4

I suggested Peggy do four things:

1. Write a crisp summary of her position and planned action.
2. Send it to her managers and their managers.
3. Tell the review team she would proceed without their approval.
4. Deliver the product on schedule

Another War Story 5

Bureaucracy is designed to efficiently handle routine.

Occasionally must do the unusual.

If you are right, you can buck the bureaucracy.
If you are wrong, you will get into trouble.

Peggy gambled and won. Later made a director.

The Bureaucracy

Bureaucracy is inevitable.

Required to handle enormous volume of routine work.

As developers we must occasionally have exceptions.

To do so quickly and efficiently, we must learn to use the power of teamwork.

The Force

Using the power of teams.

Five rules:

1. Have a skilled, motivated team.
2. The system is the evil, not the people. Don't get personal.
3. Have a rock solid story: history, data, courage of your convictions.
4. Keep management informed.
5. Trust your team.

May The Force be with you.