On Baseball, Bowling Balls, and Teamwork

Presented by Bill Bellows

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Technology Management Seminar Series
Portland State University
April 11, 2014
Abstract

As with many success stories, the American pastime of baseball has many fathers (and mothers), with a heritage that extends well beyond the original thirteen colonies to England. Consider the design of the playing field, with “foul” lines emanating from “home plate,” to the left, past third base, all the way to the outfield fence, and to the right, past first base, to the right field fence. Nine defensive players are distributed around this diamond and across the outfield. None of their jobs are defined by outlines that restrict their roles in the way that a goalkeeper in soccer can use his or her hands only within the confines of the penalty area.
Abstract
What if, in contrast, baseball players were each constrained in their field positions by solid boundaries, painted on the field? Might this situation begin to approximate the operation of an organization with inflexible job descriptions, wherein employees are left to believe their respective roles are independent? In the absence of interdependence, the concept of a team sport might instead be known as a group sport, with a common aim superseded by individual aims.
Abstract

Beginning with an exploration of baseball and bowling balls, this aim of this presentation is to share a proposal for “better thinking about thinking” as it applies to teamwork in all aspects of our lives.
Agenda

• Background
• Reflections
• Modes of Thinking
• Purposeful Resource Management
• Opportunities to Act
• Opportunities to Think
Background
On Baseball
Product / Program / Project

As Conceived

The top 5 uses:
1. Replacing the screwdriver
2. Pilot holes
3. Hole saw
4. Drywall installation
5. Concrete
Product / Program / Project

As Conceived

As Managed

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Super Models
Mental Models

...ideologies are the shared framework of mental models that groups of individuals possess that provide both an interpretation of the environment and a prescription as to how that environment should be structured.

Source: Shared Mental Models, Denzau, A. and D. North
Mental Models

...mental models are the *internal* representations that individual cognitive systems create to interpret the environment and the institutions are the *external* (to the mind) mechanisms individuals create to structure and order the environment.

Source: Shared Mental Models, Denzau, A. and D. North
Mental Models

Essentially, all models are wrong, but some are useful.

Professor George Box
Resource Management Model

Activity

Proactive

Reactive

Ownership

“Mine”

“Ours”
Resource Management

Proactive – applying effort while “good,” “OK,” “well,” or “correct” is happening

Reactive – applying effort after “bad,” “not OK,” “sick,” or “incorrect” happens
Resource Management

“An ounce of prevention is worth a pound of cure”

Ben Franklin

“A stitch in time saves nine”

Francis Baily

“Every dollar we invest in high-quality early education can save more than $7 later on”

Barack Obama
Perception & Thinking

“What we see depends on what we thought before we looked.”

Myron Tribus
Ink & History

“The very ink with which all history is written is merely fluid prejudice.”

Mark Twain
Actions & Interactions

“A system is never the sum of its parts. It is the product of the interactions of its parts………………the art of managing interactions is very different indeed than the management of actions, and history requires this transition for effective management.”

Russ Ackoff
Actions & Interactions

**Actions - Parts**

**Interactions - Gaps**
Reflections
Horse Trading

“The secret to selling a horse is…

Mark Twain
Time Management

How much time is spent discussing parts, tasks, activities, program milestones, etc. which are good and completed on time?

How much time is spent studying for the final exam, questions from weekly quizzes and the mid-term which were correct?
Time Management
Buying Watermelons and Briquettes
Grades

What letter grade is required for all purchased parts and services, as well as tasks completed internally?
Task Flow

Handoff Requirements?
Task Grades
Task Grades

[Image of students working on a task]

[Image of a test with answers crossed out and red markings]

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Task Management
Macro System Model
Macro System Model

Task Completion

- Step 1
- Step 2
- Step N
On Ball and Strikes
Macro System Model

Task Completion

- Step 1
- Step 2
- Step N

GOOD

Task A

GOOD

Task B

GOOD

Task O

GOOD

Task P

Assembly

- Sub-Assembly 1
- Sub-Assembly 2

FIT

Final Assembly

FIT

Product Assembly

GOOD

WORKS

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Task Grades

[Image of children doing homework]

[Image of grade A+]
Task Grades
Interactions, not Actions

One inspiration for challenging the mental model of “good parts” is the 1983 discovery by Ford Motor Company of a dramatic difference in warranty claims between automatic transmissions designed by Ford and built in two locations, one in Batavia, Ohio, the other by Mazda in Japan. Much to the surprise of Ford’s corporate warranty office...
Interactions, not Actions

the number of complaints associated with the erratic shifting of the transmissions produced in Batavia were a factor of 3 greater than the complaints against the transmissions built by Mazda.

Upon close examination, Ford realized that Mazda’s manufacturing focus was to actively manage the gap between the outer diameter…
Interactions, not Actions
of the valves within the transmissions and the corresponding diameter of the valve bore.

In doing so, Mazda’s efforts realized the existence of an ideal gap, resulting from ideal (“target”) values for both the bore and valve diameters, with an awareness that variation in gap size matters.
On Bowling Balls
Examples of Action Management

- **BORE DIAMETER**
  - MIN
  - MAX

- **VALVE DIAMETER**
  - MIN
  - MAX

- **PAGE COUNT**
  - 20
  - 25

- **DISTANCE FROM THE DOOR**
  - 0 FT
  - 100 FT
Macro System Model
Action Management

HOLE DIAMETER

MIN =
MAX

PAGE COUNT

20 =
MAX
25

OUTER DIAMETER

MIN =
MAX

DISTANCE FROM THE DOOR

0 FT =
100 FT
Micro System Model
Action Management

HOLE DIAMETER

- MAX ≠ MIN

OUTER DIAMETER

- MAX ≠ MIN

PAGE COUNT

- 25 ≠ 20

DISTANCE FROM THE DOOR

- 100 FT ≠ 0 FT
Resource Management Contrast

BORE DIAMETER

MAX

MIN

VALVE DIAMETER

MAX

MIN

MAX

MIN
Resource Management Contrast

MIND THE PART

MIND THE GAP
Isogrids
Isogrids
Taguchi’s Quality Loss Function

“Loss to Society”

Lower Specification Limit  TARGET (desired value of parameter)  Upper Specification Limit
Micro System Model

Task Completion

- Step 1
- Step 2
- Step N

- Task A
  - Degrees of GOOD

- Task B

- Task O

- Task P

Assembly

- Degrees of FIT
  - Sub-Assembly 1

- Degrees of FIT
  - Sub-Assembly 2

Final Assembly

- Degrees of FIT
  - Product Assembly

- Degrees of WORKS
Modes of Thinking
Modes of Thinking

- Categories
  - Absolutes
  - Discrete / Digital
  - How many students at UCLA? How many faculty?

- Continuum
  - Relative
  - Wholeness / Analog
Modes of Thinking

- Categories
  - Absolutes
  - Discrete / Digital
  - How many students at UCLA? How many faculty?

- Continuum
  - Relative
  - Wholeness / Analog
  - Better/Faster/Cheaper/Smarter/etc.
  - Students are different, faculty are different
Modes of Thinking

- **Categories**
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Purposeful Resource Management
Resource Management

Activity

Proactive

Reactive

Ownership

"Mine"

"Ours"

REFLEXIVE

PURPOSEFUL
Opportunities to Act
Opportunities to Act
(differences that make a difference)

- Category Thinking vs. Continuum Thinking
- Macro Systems vs. Micro Systems
- Attention to “Good” elements
- Manage interactions, not actions
Opportunities to Think
An InThinking Roadmap
AKA The Hotel California

**Leading Systems**
(12 hrs)
(AKA the “Organization Workshop”)

**The New Economics Study Session**
(14 hrs)

**Managing Variation as a System**
(9 hrs)

**Resource Leadership**
(8 hrs)

InThinking Together
(9 hrs)
(Formerly known as “ET” and “Understanding Variation”)

**Kepner-Tregoe**
(24 hrs)
(Problem Solving and Decision Making)

**Six Thinking Hats**
(8 hrs)

**DATT**
(16 hrs)

**Lateral Thinking**
(16 hrs)

**Design of Experiments & Taguchi Methods – An Overview**
(16 hrs)

**Understanding Taguchi Methods – Part 1**
(40 hrs)

**Understanding Taguchi Methods – Part 2**
(40 hrs)

**Prerequisites**

**BTA…webinar**
(2nd week, Th/11:30-1pm PT)

**OD**
(4th week, Th/Fri, 12-2pm PT)

**Prerequisites**

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An InThinking Roadmap

TARGET AUDIENCES: Members of management, individual contributors, suppliers, and customers who are providing leadership in InThinking activities. Family members, "members of the community" and students are welcome to attend. "Members of the community" are citizens who are involved full or part time, or in a volunteer capacity, in community related work. Examples include hospital employees, teachers, religious leaders, scouting leaders, and youth sports volunteers.
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Monthly Announcements

Better Thinking About...Web Announcement

Good afternoon from the Los Angeles campus of Aerojet, located in Canoga Park, California, on the western end of Fernando Valley.

In our third session of 2014, Elaine Johnson, from Lake City, Oregon, will present on Thursday, April 11th, from 11:00 AM to 12:00 PM. Her topic is "Better Thinking About How Literature Support Business."

Elaine's aim for this presentation is to show that literature can support business, but how? Literature helps business leaders enter a new type of business: multidisciplinary characters to penetrate their thinking, experience, and consciousness.

Ongoing Discussion Announcement

Good afternoon from the Los Angeles campus of Aerojet Rocketdyne, located in Canoga Park, California, on the western end of the San Fernando Valley.

Aerojet Rocketdyne's InThinking Network welcomes Julie Goodfellow, from Aherlowen, Wales, and Hugh McAllister, from Henderson, Nevada, to lead our third Ongoing Discussion conference call of 2014 on March 27th and 28th and also our 17th session since we began in January 2006. As for a topic, Julie and Hugh have selected "From My Seat in the Stadium Continued...", in their first time with us as Thought Leaders.

(Please note: daylight saving time is in force in the USA)
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