H

BOOTSTRAP SEMINAR
Nov 30 - Dec 2, 1992

Foil Set H:

HUMAN SYSTEM & PILOTS –

HUMAN SYSTEM ISSUES & EXPLORATORY PILOTS

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EAZ

Notes

H1

BASIC BOOTSTRAP CONCEPTS

Objective: Pursue high-performance org
Hypothesis #1: Whole-system Augmentation
Hypothesis #2: ABC's of Org Improvement
Hypothesis #3: Bootstrap Strategy
Hypothesis #4: Collab. Knowledge Work (CODIAK)
Hypothesis #5: Open Hyperdoc System (OHS)
Hypothesis #6: Joining forces in a C Community

(assumes major paradigm shifts throughout)

EBV

Notes

H2

Hypothesis #1: Whole-system Augmentation

Highly-developed work methods must evolve hand in hand with the tools, via exploratory pilot outposts in diverse application areas.

- Appreciating Human-System Contributions
- Human-System Elements of CODIAK Support
- Advanced Exploratory Pilots
- High-Performance Teams
- Conclusion

EVL

Notes

As organizations face increasing complexity and urgency, their Human-System advancements must not only be commensurate with the technology explosion, the two must ***stay in sync.*** *To gain ever higher performance, organizations must explicitly* ***co-evolve*** *the Human-Tool elements for an integrated, coherent capability infrastructure.*

Notes

H3

TRY IMAGINING THE HUMAN SYSTEM YOU'D HAVE TO CREATE IF YOU ACCEPTED A CHALLENGE:

You would be given enough people, possessing among them all of the necessary basic human capabilities, to take over an existing activity that will be assigned to you from a candidate list.

They will have intelligence, strength, health, size, etc., necessary for their jobs; all speak the same language, with a spectrum of general education.

But none will have the special knowledge, physical skills and conditioning, social skills and conditioning, etc. possessed by the just-departed staff.

Notes

H4

MORE CONDITIONS ON OPERATING YOUR NEW ENTERPRISE

You would take over all of the facilties, equipment, tools, records, etc. left behind yesterday by the successfully coping previous staff.

You can spend up to 5% of the previous operating budget on consultants and educational courses -- but you can't hire any previously-experienced people to do any of the actual work.

(This exercise is to get you to think about how much there is that we don't generally appreciate about a specialized organization's Human System.)

Notes

H5

READY? YOUR NEW ASSIGNMENT WILL BE TO TAKE OVER AND RUN ONE OF THE FOLLOWING:

- An NFL football team;
- A high-fashion garment design and mfg. co.;
- An orchard in Florida;
- A Bushman camp in the Kalihari desert;
- A semi-conductor factory;
- The city administration of New York;
- A four-star restaurant.

H6

NEXT HUMAN-SYSTEM APPRECIATION EXERCISE – IMPACT ON CURRENT ORGANIZATIONS WHEN:

High-temperature super-conductor devices:

a. Much smaller, more efficient electric generators and motors -- e.g., 100 horsepower in one cubic foot, weighing 50 lbs, and achieving 98% efficiency.

b. A two cu-ft storage battery, weighing 50 lbs, that can store enough electric energy to power your electric car across the U.S.

Notes

H7

NEXT HUMAN-SYSTEM APPRECIATION EXERCISE – IMPACT ON CURRENT ORGANIZATIONS WHEN:

Nano-technology devices: (Engineering with molecules):

Button-sized unit for surgical implantation, getting its power from human-host metabolism;

connecting to conditionable nerve channels for "internal" communication with human host;

providing a gigabyte of memory and 100 MIPS processing power;

with wireless I/O to the outside world.

Notes

H8

NEXT HUMAN-SYSTEM APPRECIATION EXERCISE – IMPACT ON CURRENT ORGANIZATIONS WHEN:

Robotic personal transporters -- safe personal transportation at five times the average speed on our same streets and highways.

OR

Virtual-reality implementation -- using the implanted, wireless, nano-technology devices to provide virtual-reality stimulus via direct nerve connections.

Notes

Notes

H9

EXAMPLE: CONSIDER A FAMILIAR AUGMENTATION SYSTEM

HUMAN SYSTEM	TOOL SYSTEM
Laws Regulations Insurance Licensing Rules of the road Traffic patrol "low riding"	Automobiles
Skills Knowledge	Roads, Bridges, Freeways, Toll Stations, Rotaries, Traffic lights, Stop signs, Spare tires, Jacks, Chains, Road maps, ...
Training	

The automotive transportation system

Notes

H10

CONSIDER REPRESENTATIVE HUMAN SYSTEM ELEMENTS FOR OUR AUTO-TRANSPORT SYSTEM

Organization: Departments of transportation; licensing, insuring and financing institutions; legislating, policing and adjudicating traffic laws; manufacturing; repair and service stations; ...

Procedures: How to shop, buy, finance, insure and license a car; how to become a driver; how to get a car fixed; ...

Conventions: Drive on right, pass on left; give right of way to driver to your right; signal for turn and lane changes; honor pedestrians right of way; ...

Notes

H11

CONSIDER REPRESENTATIVE HUMAN SYSTEM ELEMENTS FOR OUR AUTO-TRANSPORT SYSTEM

Language: Nouns like brake, transmission, accelerator, turn indicator, traffic light, ...; verbs like accelerate, shift, signal, yield, refuel, ...;

Skills: Signal, turn, and decelerate simultaneously; unlock doors, adjust seats, start motor, engage transmission, accelerate smoothly, steer in reverse,...;

Knowledge: When & where to refuel, get new tires renew insurance and license, file a claim; how to learn traffic conditions; routing from A to B; ...

H12

Hypothesis #1: Whole-system Augmentation

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Notes

Where CODIAK support is concerned, we estimate that only about 5-10% of the total expense will be in the Tool System. The remaining 90-95% will be in making coordinated advancements in the Human System. This assumes that the Tool System includes an OHS—no OHS would mean ***much*** *higher (wasted) Tool-System expense.*

H13

SOME LIKELY CHANGES IN HUMAN SYSTEM ELEMENTS WITH FUTURE OHS UTILIZATION (1)

Organization: More specialists, coordinating over broader activity domains; new specialty roles, e.g., "issue auditor," "dialog coach," "horizontal domain integrator;" concurrent processes enabling a "multi-dimensional matrix management;"

Conventions: Where you install what kind of flag in the knowledge base to differentiate between twenty kinds of alert about an idea, worry, or supportive argument; or, twelve different kinds of "footnotes" needing consistent notation/portrayal.

Notes

H14

HUMAN-SYSTEM CONSIDERATIONS FOR CODIAK SUPPORT

There is much more to be learned about the rigorous use of an OHS in a wide-area, distributed CODIAK process.

The human-system elements -- all the methods, procedures, conventions, skills, etc. -- must be highly developed in close association with the continuing evolution of OHS requirements.

Notes

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H15

ABOUT CHANGES IN HUMAN SYSTEM ELEMENTS WITH FUTURE OHS UTILIZATION (2)

My intuition strongly predicts very significant differences from today's organizations, at all levels: new roles, very different methods and procedures, wider variety of skills, enterprise-wide practices with timing and coordination undreamed of today.

BUT, my familiarity and understanding of current organizational practices aren't strong enough to give me confidence in making specific predictions.

Sorry. Yet I have complete faith that exploration and collaboration will produce great differences.

Notes

H16

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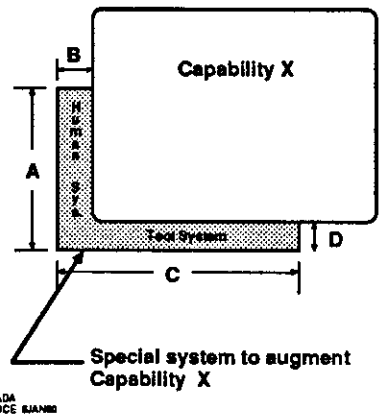
H17

TECHNOLOGICALLY ENHANCED AUGMENTATION PROVIDED BY A MULTI-DIMENSIONED SYSTEM



Augmentation-System Dimensionality:

A: Human-System Sophistication

B: Training & Coaching Investment

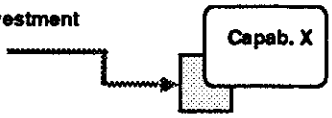
C: Tool-System Sophistication

D: Tool-System, Per-Person Investment

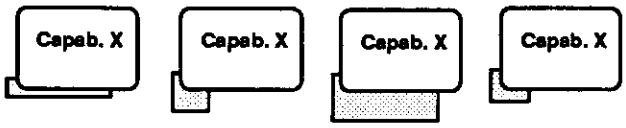
H18

NEW AUGMENTATION SYSTEMS WILL HAVE MANY DIFFERENT "DIMENSIONAL" SHAPES

Assume that a balanced investment would show like this:



Most of today's investments are not balanced!



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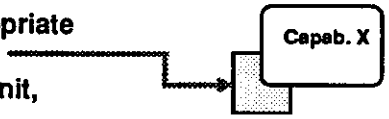
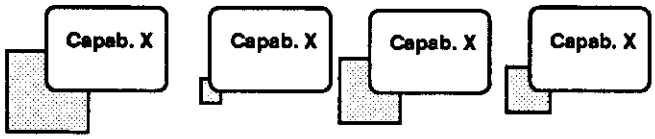
EVERY VIABLE HUMAN UNIT MUST INVEST IN ITS OWN IMPROVEMENT -- BUT AT WHAT LEVEL?

If this depicts appropriate investment level, relative to "size" of unit,



then how appropriate would be the relative investment level for your human unit?



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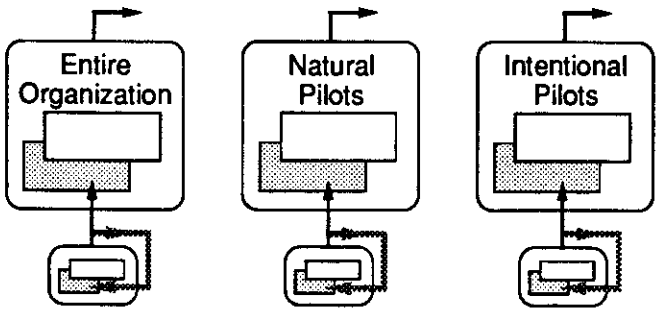
H20

STRATEGIC CHOICES: IMPROVING WHAT ORGANIZATIONAL UNITS, AT WHAT LEVEL, WHEN?



Running explicitly designed pilots will be a very basic and important part of a continuing improvement process.

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A very important part of B-Activities, when the pace of change is high, will be to plan, implement, support and evaluate a continuous series of pilots.

A very important C-Activity is to improve the B capability for doing just that.

Notes

H21

MANY TYPES OF PILOTS WILL BE NEEDED

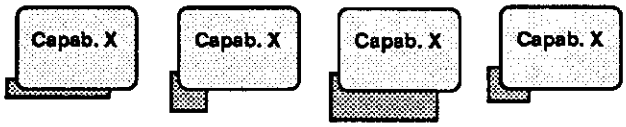
- some for furthering the advanced exploration
- some to give elite project teams the experimental advanced capabilities
- some to give the "regular" workers a "taste" of what's to come

The advanced pilots are an important B-Activity tool for ensuring relevance and human-tool integration, learning how to harness the capabilities for higher-performance, and learning how to deploy them.

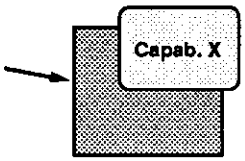
Notes

H22

NEW AUGMENTATION SYSTEMS WILL HAVE MANY DIFFERENT "DIMENSIONAL" SHAPES



Suppose that an important, composite, pilot-team capability was augmented (equipped, trained) like this:



There is an important strategic role for such units.

Notes

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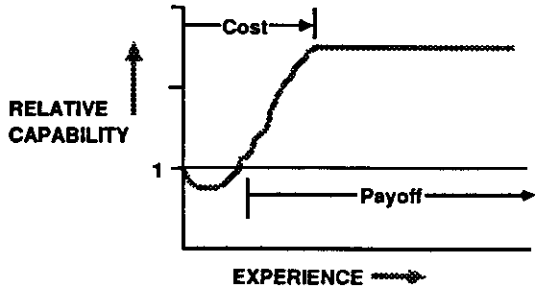
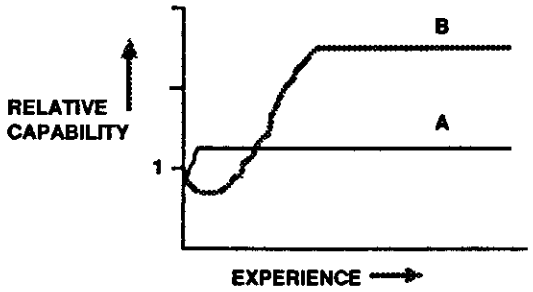
WEIGH THE COST TO DEVELOP A GIVEN PROFICIENCY AGAINST ITS PAYOFF !



H24

WHICH SYSTEM WOULD YOU BUY? (THE TRICYCLE, OR THE BICYCLE?)



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H25

HUMAN-SYSTEM EVOLUTION NEEDS SUPPORT FOR GRADES OF USER PROFICIENCY!

- Yes, "easy to learn" for beginners; but this will decrease in importance as the user-population continues to mature.
- Evolution will be severely inhibited if experienced, heavy users can not extend their capability with enhanced vocabulary and procedural proficiency.

Notes

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Hypothesis #1: Whole-system Augmentation

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Notes

A very important type of future "intentional pilots" will be for specially recruited, equipped and trained "high-performance teams." Hard to picture any other way to accellerate evolution toward the future high-performance organizations.

H27

PURSUING HIGH-PERFORMANCE AUGMENTATION SHOULD START WITH SMALL GROUPS

Rather than large groups because: shorter evolutionary cycles; more economical scale of experiments; more "cultural mobility."

Rather than individuals because: exploring high-performance augmented collaboration is too promising to be omitted.

"High-Performance Augmented Teams"

Notes

H28

ROLE OF HIGH-PERFORMANCE TEAMS SHOULD TIE CLOSELY TO OUTSIDE WORLD

Important strategic goal: to find economically viable roles for such teams in real-world organizations.

Important strategic goal: to give attitude leaders of the outside world direct experience of the teams' exceptional capabilities.

(Direct experience is the most effective molder of understanding and attitude about new things.)

Notes

H29

EXPERIMENTAL, HIGH-PERFORMANCE TEAMS SHOULD BE EQUIPPED FOR SPECIFIC JOBS

Tools, methods, language, training -- all need to be focussed on a specific kind of application work.

Strategic reasons to aim early exploration at some sort of support work -- and not for an in-line organizational role.

"High-Performance Augmented Support Teams"

H30

A NUMBER OF ROLES MAKE ATTRACTIVE CANDIDATES FOR HIGH-PERFORMANCE TEAMS

E.g., highly focussed project teams -- especially software development.

Or, a "Digestor" role for a large project or special-interest community -- e.g., to support dialog, analyze the contributions, integrate them into a "project handbook," generate special "portrayals" (e.g., presentations or documents), etc.

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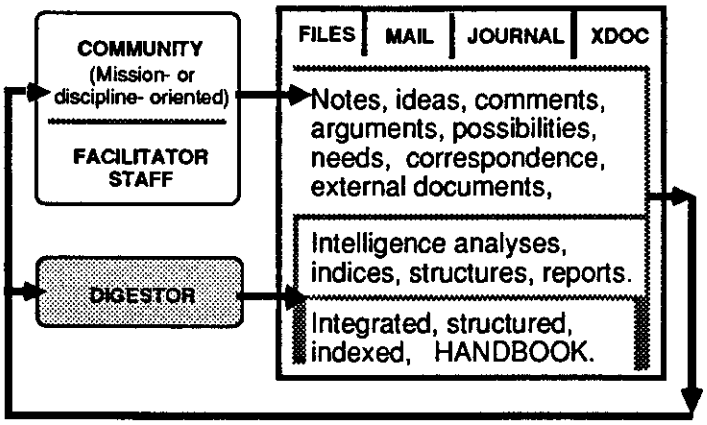
H31

A HIGH-PERFORMANCE "DIGESTOR": ENORMOUS VALUE TO THE HANDBOOK CYCLE



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This is one of two roles for a high-performance support team that have especially high bootstrapping value. This role is a high-priority candidate for implementing and supporting within an early CCom.

H32

ONE EARLY-ROLE CANDIDATE WOULD BE TO SUPPORT WORKING CONFERENCES

Very valuable service. Matches early augmentation possibilities.

Very direct interaction with "outside-world" conferencing people.

Limited duration & cyclic nature allows for de-briefing and system updates.

A new set of particpants each cycle -- more (key) people gaining new perceptions.

AIE

This is the other "favorite candidate" role for high-performance support team, to be put to work in CCom activity and in its participatory interactions with others.

It would be hoped that some of those who are already doing meeting-improvement R & D would become participants in CCom activity as a special class of B-Workers.

Notes

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H33

SPECIAL SERVICES COULD FACILITATE COMMUNITY-RELATED MEETINGS

- Hi-tech "Conference Theatre"
- Multi-media records, inter-linked
- Fast voting, integrated into record
- Specially trained support staff:
  - Near real-time minutes: annotated, linked to multi-media records
  - Very fast location and display of recorded events and references
  - Highly skilled analysis and portrayal of meeting status: net position; unresolved

H34

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H35

CONCLUSION

The OHS tools represent only a small part of the solution.

New, advanced, exploratory pilots will be needed for rapid cultivation of human-tool co-evolution of high-performance capabilities such as CODIAK.

Who will be responsible for this exploratory work? Vendors? End-user organizations? Universities? Government?