TOGETHER WE CAN GET THERE!
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interviewing
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Doug Engelbart's Odyssey

BASIC BOOTSTRAP CONCEPTS

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

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CODIAK:
Concurrent Development Integration and Application of Knowledge
Key Challenge:
Interoperability among CODIAK domains
The need for CODIAK interoperability will extend the scope of standards.

First beachhead for improving CODIAK capability: Hyperdocument Systems

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Essential Elements of Open Hyperdocument Systems
Shared On-line Filing

Structuring, Linking and Viewing

[Engelbart is showing page 9 of "Authorship Provisions in Augment" -- see last page of this handout.]

7 CONTROLLING THE VIEWS

7a A user of a book, or of most on-line text
7b MULTIPLE WINDOWS
7c WINDOW VIEWS
7d USER-SPECIFIED SEQUENCE

VIEW: 2 levels; Numbers On: 1 line per statement; Blank lines.

7 CONTROLLING THE VIEWS

7a A user of a book, or of most on-line text
7b MULTIPLE WINDOWS
7b1 For whatever total screen area is
7b2 (Note: Cross-file editing can be
7b3 User-adjustable parameters are
7c WINDOW VIEWS
7c1 STRUCTURE CUTOFF. Show only
7c2 LEVEL CLIPPING. For the
7c3 STATEMENT TRUNCATION. For

VIEW: All levels; Numbers On: 1 line per statement. No blank lines.

Integrated Electronic Mail

STAGE 3: SUPPORTING THE CODIAK PROCESS
FOR A MUTUAL KNOWLEDGE DOMAIN

Knowledge Domains

Shared Files

A Journal System

STAGE 4: SUPPORTING THE CODIAK PROCESS
FOR A MUTUAL KNOWLEDGE DOMAIN

Knowledge Domains

"Throw-Away" Mail

Shared Files

Journal (Library)
Integrated External Document Management

STAGE 5: SUPPORTING THE CODIAK PROCESS FOR A MUTUAL KNOWLEDGE DOMAIN

Shared Screen Support

Common Evolving Vocabulary Among CODIAK Users

ESSENTIAL ELEMENTS OF AN OHS

- Mixed-object documents
- Explicitly structured documents
- View control of objects' form, sequence and content
- The basic "hyperdocument"
- Hyperdocument "back-link" capability
- Hyperdocument "library system"
- Hyperdocument mail
- Personal signature encryption
- Shared-window teleconferencing
- Inter-linkage between hyper-documents and other data systems
- Link addresses that are readable and interpretable by humans
- Every object addressable
- Hard-copy print options to show addresses of objects and address specification of links
- External-document control
- Access control
- More
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**STARTING TO THINK ABOUT AUGMENTING THE KNOWLEDGE WORKER: BEGIN WITH BASICS**

- **Basic Human Capabilities**
  - Conscious part
  - Unconscious part

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**BUT OUR BARE MENTAL-MOTOR PERCEPTUAL MACHINERY CAN'T DO MUCH BY ITSELF**

- Outside World
- **Percept.**
- **Motor**
- Conscious part
- Unconscious part

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**OUR CAPABILITIES GROW HIERARCHICALLY -- FOR BOTH INDIVIDUALS AND THEIR ORGANIZATIONS**

- **Human-System Contributions**
  - Organization
  - Procedures
  - Customs
  - Methods
  - Language
- **Augmented Capability Hierarchy**
  - Skilled Knowledge
  - Training
- **Tool-System Capabilities**
  - Media
  - Portrayal
  - Travel, View
  - Manipulates
  - Retrieve
  - Compute
  - Communicate

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**ABC's OF ORGANIZATIONAL IMPROVEMENT**

- **An Organization**
  - **A Activity:** Product R&D, mg. marketing, sales, accounting, etc. Ex: aerospace - producing planes; congress - passing legislation; medicine - AIDS research.
  - **B Activity:** Improving the organization's ability to perform A work. Ex: introducing email or CAD systems; upgrading quality processes.
  - **C Activity:** Improving the organization's ability to perform B work. Ex: introducing better ways to address needs, or run pilots.

*How an organization explicitly improves its improvement capability.*
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**An Organization's Bootstrapping Process**

- **A:** People doing A work
  - Org's capability to do its "everyday work"
  - Capability-Improvement Products
  - Org's capability to improve its A capability
  - Org's capability to improve its B capability
  - Bootstrap Feedback

- **B:** People doing B work
  - Capability-Improvement Products

- **C:** People doing C work
  - Capability-Improvement Products

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**Two-Stage Organizational Bootstrapping**

- **A:** People doing A work
  - Org's capability to do its "everyday work"
  - Capability-Improvement Products
  - Org's capability to improve its A capability
  - Org's capability to improve its B capability

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**An Info-Sys Vendor's Bootstrapping Leverage**

- **A:** People doing A work
  - Vendor's capability to do its "everyday work"
  - Capability-Improvement Products
  - Vendor's capability to improve its A capability
  - Vendor's capability to improve its B capability

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**Basic Bootstrap Concepts**

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**The C Community as an Advanced Pilot**

- **C:** Joining forces to improve the CODIAK Process, OHS, & Improvement Xfer Capabilities

  - Collaborative "C Community" Capabilities

  - Bootstrap Leverage: boosted by its own products continuously augmented Human/Tool capabilities.
Or, suppose he were working in another file in a different directory on Office-5 and wanted to reference items relative to that same "far off" statement with special ease: in some temporary place in that file he could install a statement named "Ref" (for example) containing the textual link, "(Program-Documentation, Sequence-Doc, Specifications)". He could then cite the above reference with the link, '(Ref.' "Journal")'. This path description is: go to the statement in this file named "Ref", take the first link that you find there (traveling across intervening directories and files and statements), and beginning in the statement on the other end of that link, scan forward to the string "Journal".

This is only a cursory treatment, but should illustrate well enough what is meant by "a rich and flexible addressing vocabulary." As with other high-performance features in AUGMENT, a beginner is not forced to become involved in the larger vocabulary in order to do useful work (with productivity on at least a par with some other, restricted-vocabulary system). But an AUGMENT worker interested in higher performance can steadily pick up more of the optional vocabulary and skills in a smooth, upward-compatible progression.

CONTROLLING THE VIEWS

A user of a book, or of most on-line text systems, is constrained to viewing the text as though he had a window through which he sees a fixed, formatted document. But as described below, our worker can view a section of text in many ways, depending upon his need of the moment.

MULTIPLE WINDOWS

For whatever total screen area is available to the worker, his general performance will be improved significantly if he can flexibly allocate that area into arbitrary-sized windows whose contents can be independently controlled. AUGMENT has long provided this basic capability, along with the provision that material from any accessible file may be shown in any window, and also that screen-select copying or moving can be done across the different windows.

(Note: Cross-file editing can be done at any time, between any two legally accessible files. If one or the other file's material or destination is not being displayed in any of the windows, one may always opt to employ a textual address expression instead of a <Select> within any editing command.)

User-adjustable parameters are used to control the view presented on the display. Adjusting one's view parameters is a constantly used AUGMENT feature that has solidly proved its value. To facilitate their quick and flexible