SEPEC Tutorial

hypermedia & information reconstruction

Hypermedia & Visual Technology

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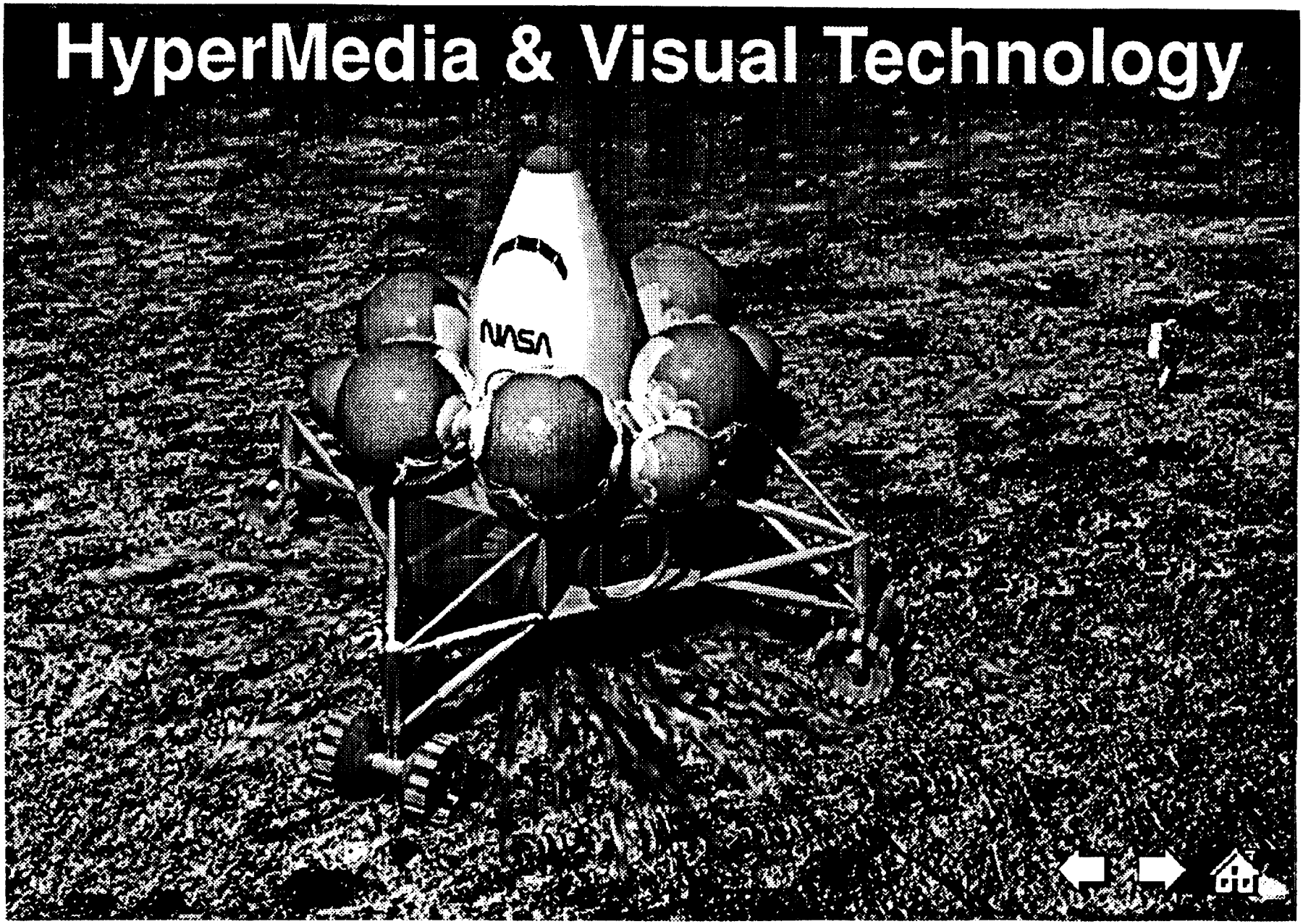
HyperMedia & Visual Technology
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Tutorial Schedule

- ☐ Topics / Goals of tutorial
- ☐ Introductions
- ☐ Discussion of Theory
- ☐ Presentation of projects
- ☐ Break
- ☐ Building a Hypermedia project
- ☐ Other Software Demos

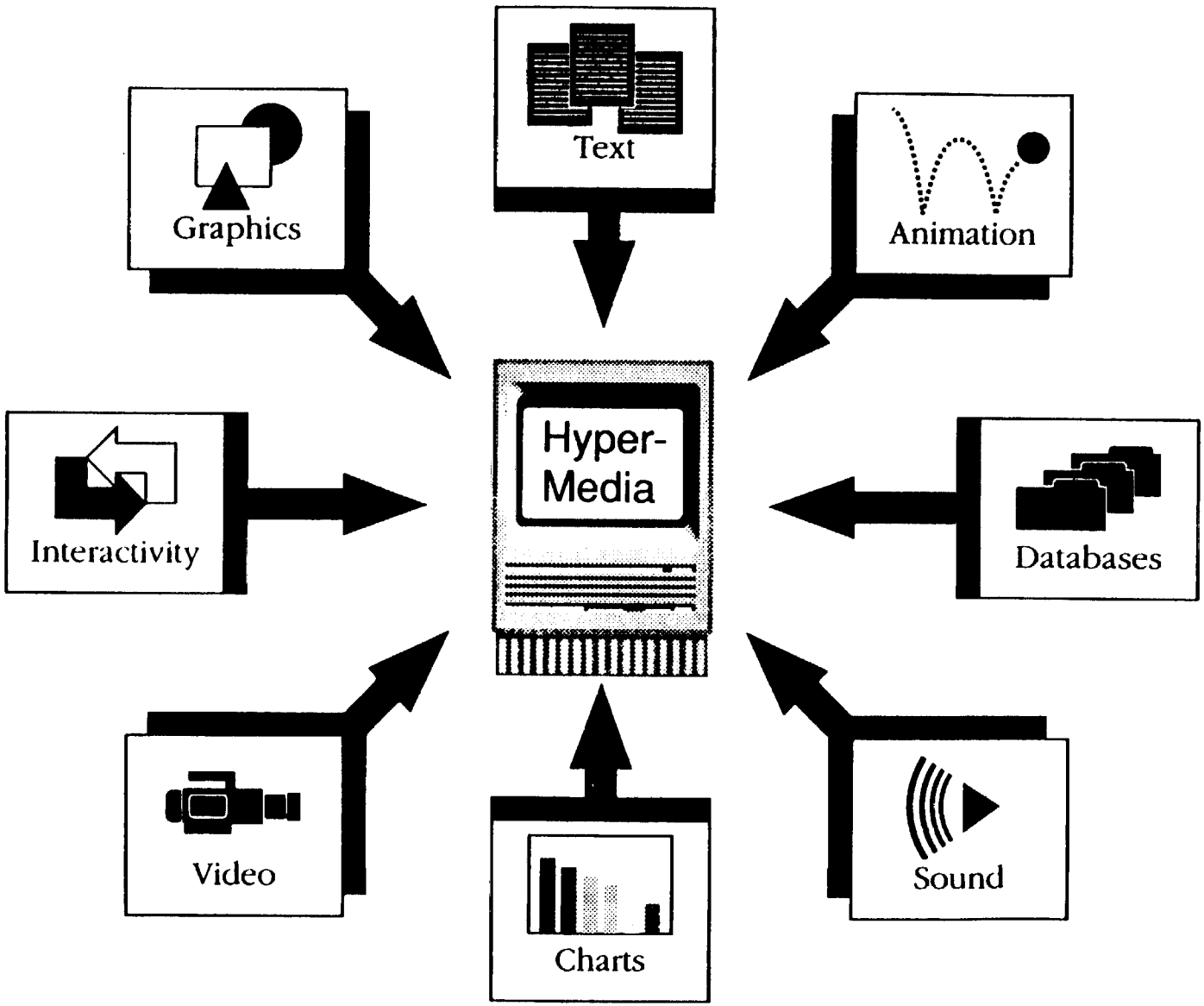
Topics & Goals of Tutorial

- ☐ Hypermedia as a visual database shell
- ☐ Simulation/Prototyping of graphical control Systems
- ☐ Hypermedia to facilitate the creative process
- ☐ Demonstrate the programs used at JF&A
- ☐ Discuss the future of Hypermedia in our community
- ☐ Maintain collaborative learning environment

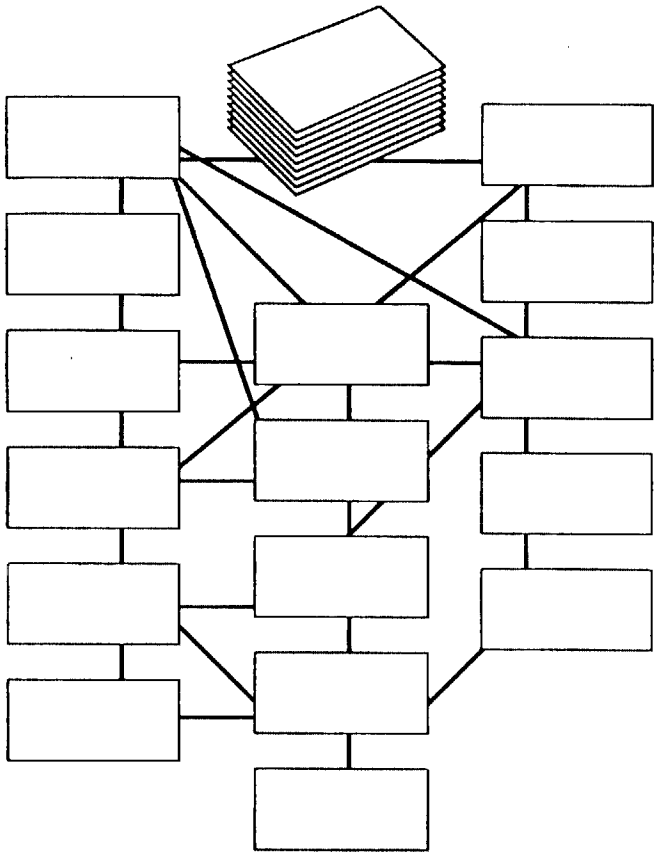
Software Demonstrations

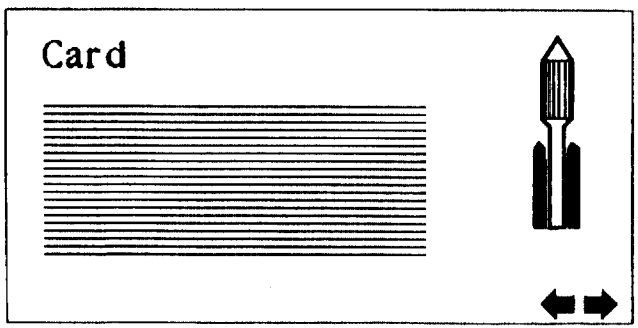
- ☐ SuperCard
- ☐ Adobe Photoshop
- ☐ Super 3 D
- ☐ Macromind Director
- ☐ Stella / Stella Stack
- ☐ Useful Utilities

Hypermedia As A Document Container



Hypermedia Terms





Node
Individual frames of information commonly called Cards.

Project or Stack
An assembled collection of structured Nodes/Cards.

Link
Determines the connection from one node to another

Web
The pattern of links within a Project or Stack

Button
On-screen "Clickable" word or icon that executes some kind of action

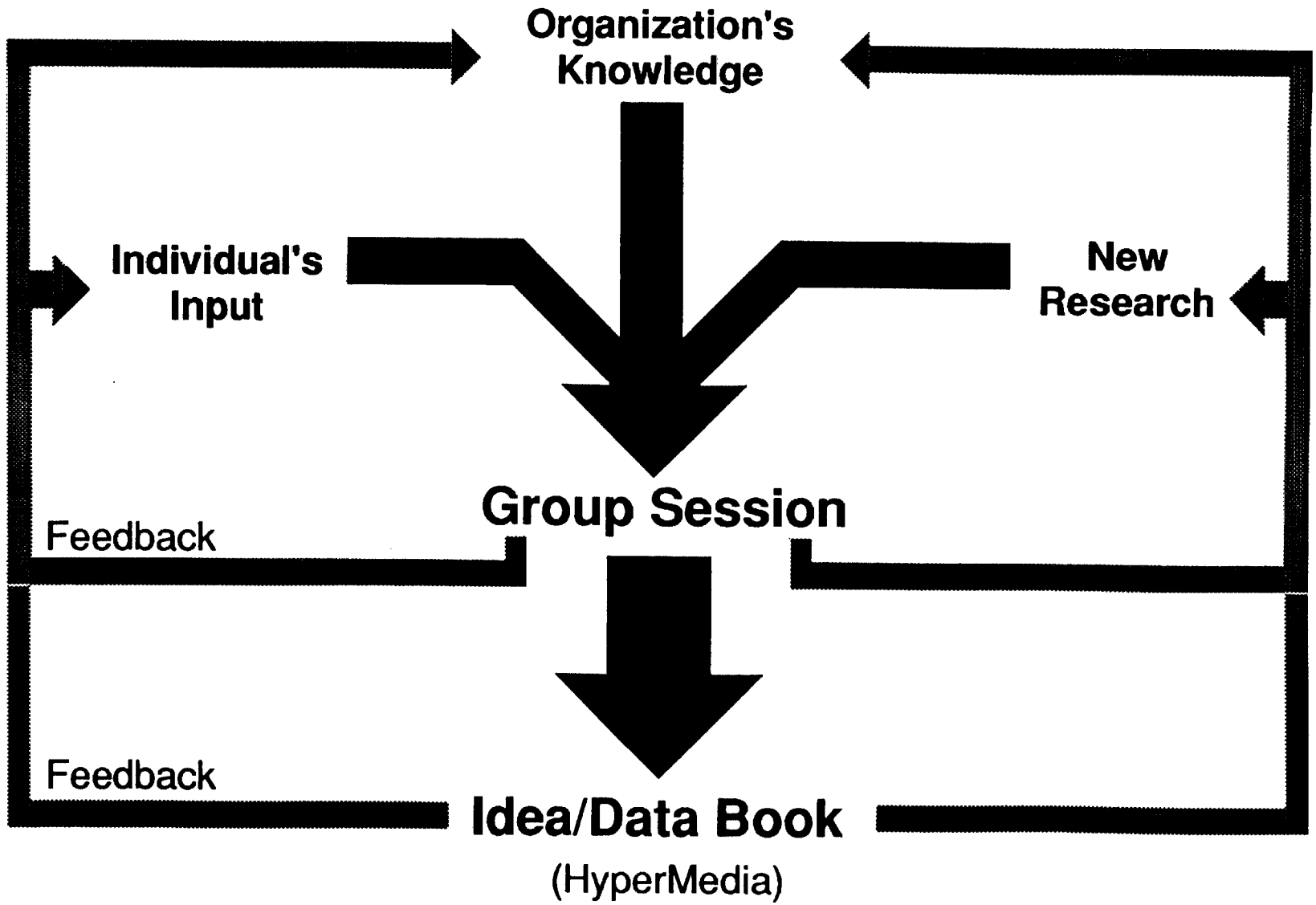
Script
The written programming that creates the actions in the project

Browsing
The way a user steps and meanders through the project

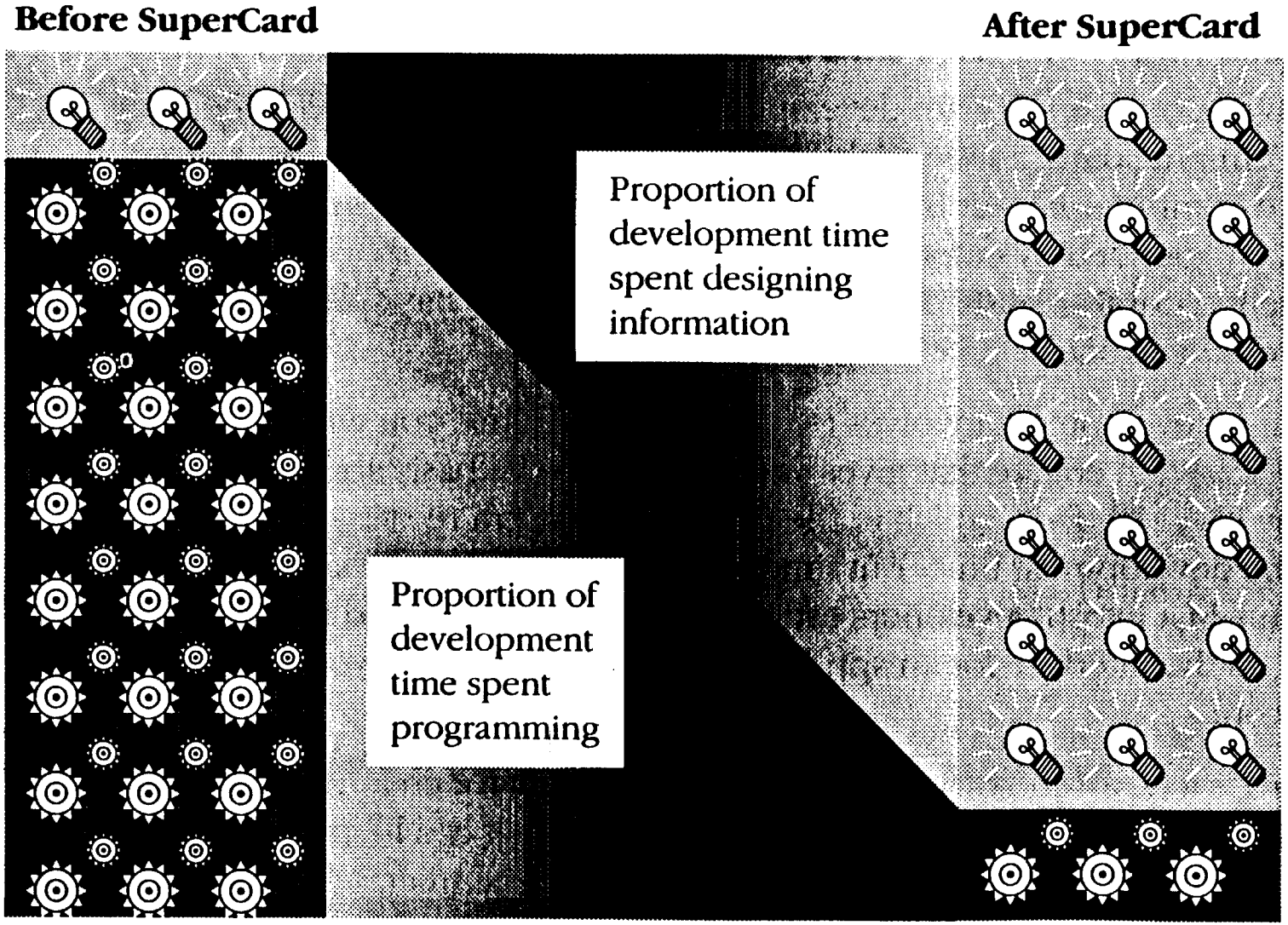
What Is Visual Technology ?

- ☐ Applying Art & Design for Management and Innovation
- ☐ Graphical Brainstorming
- ☐ Iterative Process
- ☐ Clarifies Objectives
- ☐ Stimulates Concensus Building
- ☐ Documents a Team Vision

Iterative & Unifying Structure Of Visual Technology



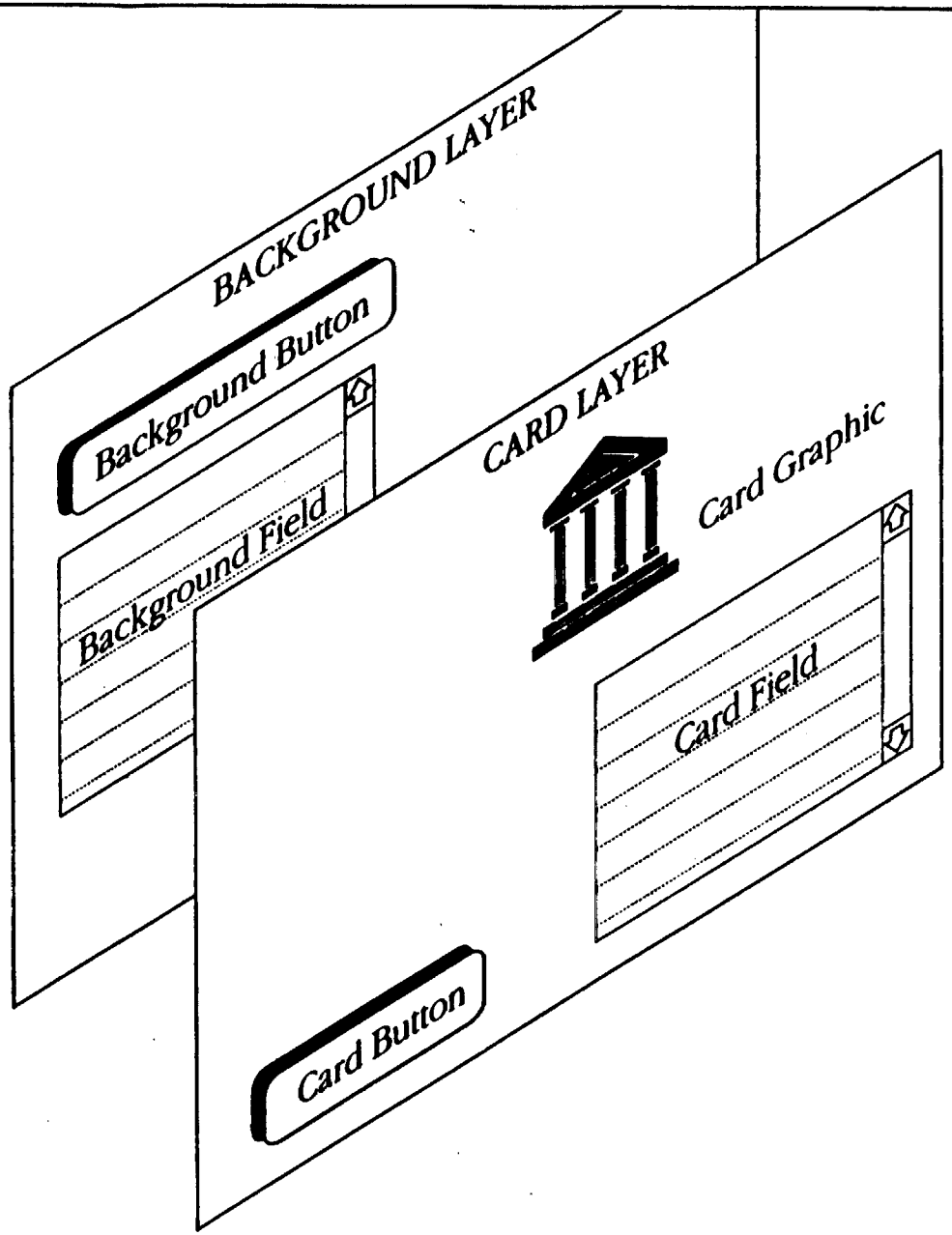
Prototyping Applications With SuperCard



Creating a Hypermedia Project

- ☐ Define and outline the goal and uses of the project
- ☐ Gather together external resources and images
- ☐ Sketch out the structure of the project web
- ☐ Create the basic structure in the Program
- ☐ Install external resources and images
- ☐ Script for navigation and dynamics
- ☐ Debug
- ☐ Evolve

Layers of a "Card"

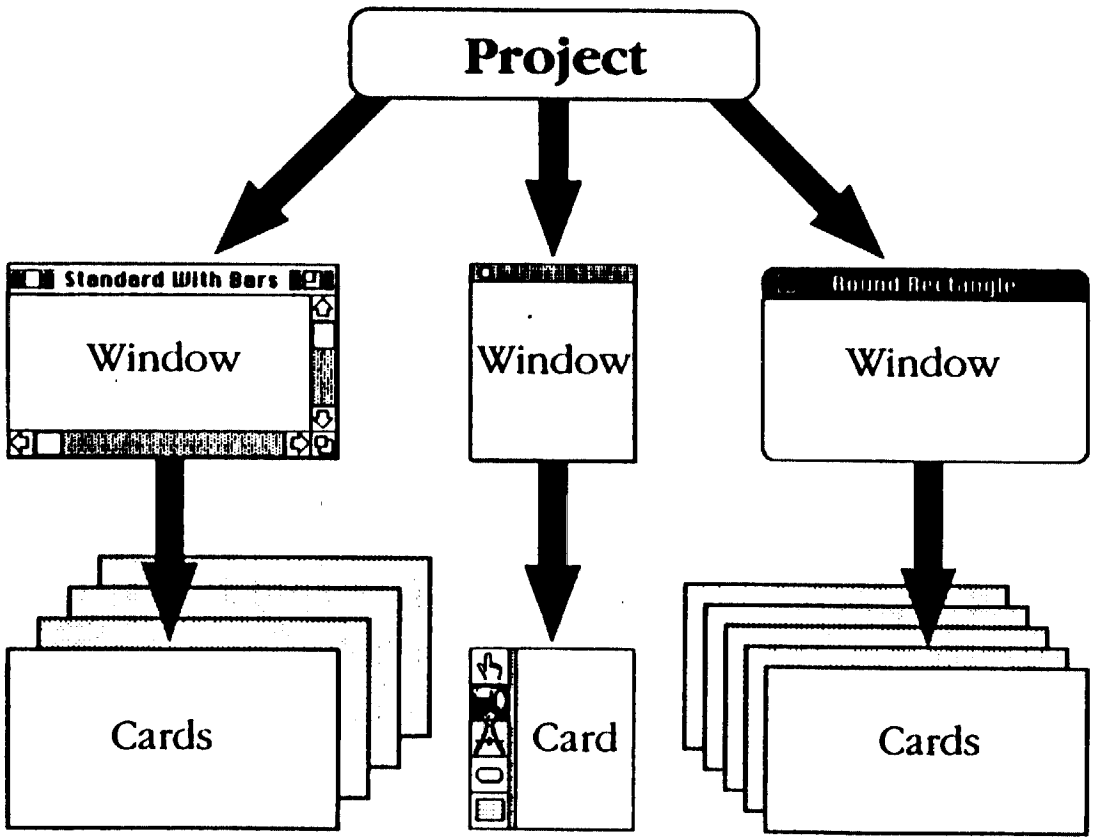


The background layer is the foundation for a related set of cards in a stack (HyperCard) or in a window of a project (SuperCard). Placing common components on a background layer saves construction time and memory.

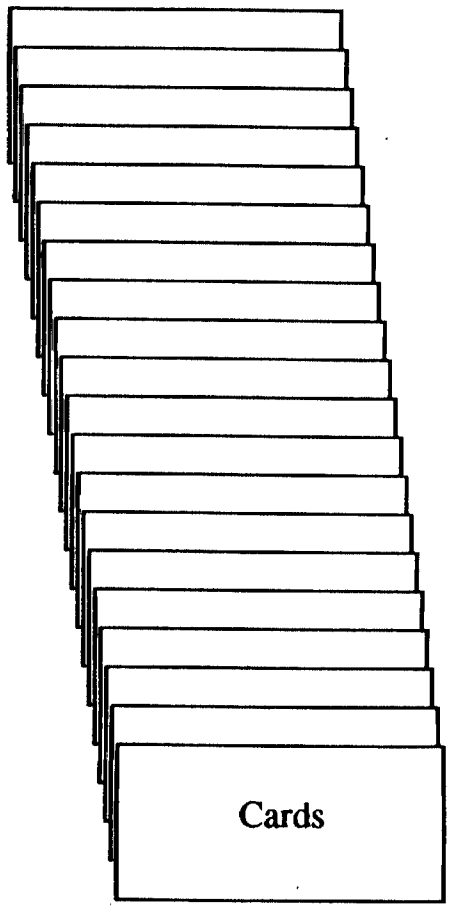
The card layer holds the specific and unique data for that card.

Structure of SuperCard Vs. HyperCard

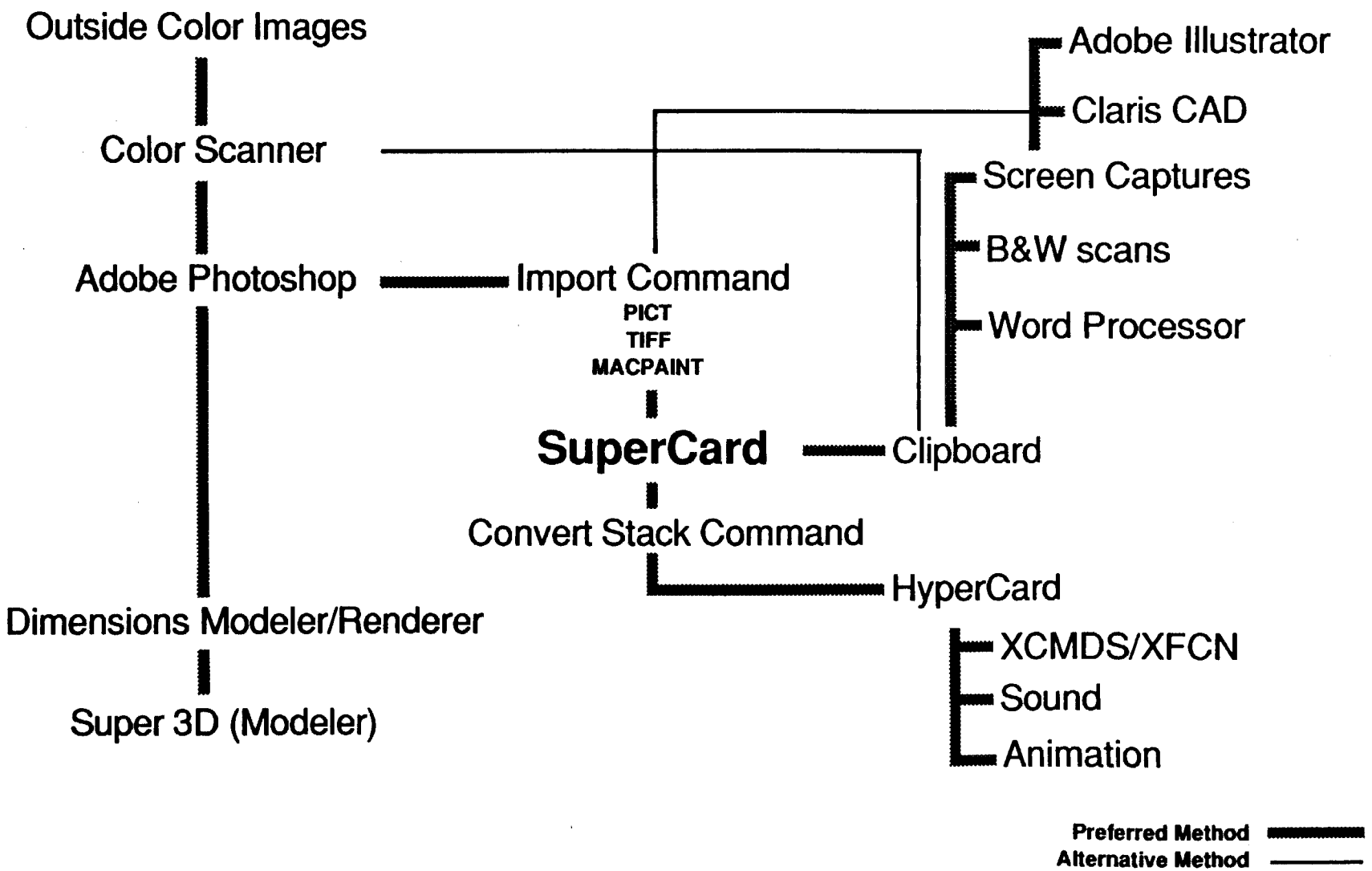
SuperCard



HyperCard



Graphic Input Paths to SuperCard (specific software cited as example)



VISUAL TECHNOLOGY: Facilitating Innovation and Group Productivity with Art and Design

by W. D. Trotter, Ph.D., Director of the Institute for Global Business Strategy, Pace University,
Thomas L. Fazzina, Ph.D., Vice-President, Technical Research, Kraft/General Foods, and
John Frassanito, President, John Frassanito & Associates.

ABSTRACT

This article by Drs. Fazzina and Trotter and Mr. Frassanito reports on applications of a codified professional practice that uses visual representations of the thoughts and ideas of a working group in order to improve productivity, problem solving and innovation. This Visual Technology process was developed under the auspices of General Foods as part of a multi-year study. The study resulted in the validation of this professional service as a way to use art and design to facilitate productivity and innovation and to define new opportunities. It has also been used by NASA for planning Lunar/Mars exploration and by other companies for general business and advanced strategic planning, developing new product concepts, and litigation support. General Foods has continued to use the service for packaging innovation studies.

BACKGROUND

The increasing complexity of business is requiring new ways to support creativity, innovation, and responsiveness to changing markets. To compete successfully companies like General Foods are attempting to find new ways to leverage the efforts of their personnel, to facilitate their productivity, to improve communication within working groups, and to cut the time while maximizing the results of meetings. Visual Technology is one method applied successfully by General Foods for improving strategic innovation and facilitating group productivity.

Visual Technology was codified as a professional service to improve innovation, productivity, and problem solving. The process uses art, graphics and other visual media to synthesize and express the collective contributions of the group participants, convert their thoughts, ideas and words to a clearly communicable visual language, and facilitate their ability to produce the desired results.

The process was developed during a joint study by General Foods and John Frassanito and Associates which was testing new ways to increase effectiveness and productivity of meetings and working groups. It was applied in a multi-year study where various process formats were tested under the direction of Thomas Fazzina, Ph.D., Vice-President of Technical Research for General Foods.

The Visual Technology process was formulated by an artist/industrial designer with a diversified background in engineering and business. This experience led to the ability to capture and communicate ideas of individuals of diverse or even conflicting backgrounds and to synthesize numerous viewpoints into unified concepts in the form of pictures. As projects and working groups become increasingly complex, the value of synthesizing multiple sources of information or creativity become more apparent. The designer's experience with complex and innovative programs demonstrated the possibility of using art and visuals in a professional practice for management and innovation support. Ideally this support service would put minimal additional demands on management; stimulate team building, commitment and enthusiasm; and provide a continuing innovation focus.

THE GENERAL FOODS CASE STUDIES

General Foods' use of the Visual Technology process was first used to identify new business opportunities for Maxwell House Coffee in the commercial market environment. After an understanding of the process was gained, it was then applied in several other formats with differing objectives.

Case Study 1: Identification of Business Opportunities.

The first format was organized and scheduled over a period of several months. Senior management established the primary and secondary objectives of the study. The initial focus was to gather any and all ideas relative to the primary objective. The secondary focus was to record all concepts regardless of their connection to the objectives.

The format was a series of creative brainstorming sessions starting with an initial creative audit of management's view of major factors that will impact their business in the future. Among these were decreasing availability of low-cost, skilled kitchen personnel; transportation costs of packaged products; need for better frozen food transportation and control systems; and new product introductions.

From this initial assessment a group of broad initiatives were identified by the Visual Technology consultant in a series of pictures. This first ideation phase formed the basis for selection of participants and general direction of the study. Each group was selected for its specific point of view and area of responsibility, i.e.; distribution, commercial customer segments such as hotels, fast food, etc.; production; and R & D.

Group sessions were set up and presented with the art work describing the primary objective of the study. The floor was then open to discussions, and all concepts resulting from the brainstorming were captured with rough sketch notations.

The key function of the consultant during the sessions was to listen and retain information. Quick sketches were produced when necessary to facilitate communication within the group. Otherwise the session results were captured and converted to artwork after the group had finished their discussions.

Groups of 5 to 7 individuals were convened for three hour sessions. It was found that three hours was sufficient time to cover the subject but not too long to become tedious. This time period allowed each member to participate fully and have his say. After three hours the sessions became markedly less productive. The pictures of the concept series generated in the preliminary management creative audit provided the initial stimulation for discussions.

The visual representations of each group's work were added to the art data bank for the following session. The cumulative work of the previous groups gave each succeeding group new focus and direction, instead of repeating work that had already been done. Because the ideas were communicated in pictures, it took only a few minutes to bring the new group up to curve.

The results of the six sessions were the generation of over 70 concepts that were captured and documented. These including several business initiatives that were selected for further development. Questionnaires were compiled so as to understand the visual technology process and identify improvements.

Case Study 2: Compressed Schedule Problem. Solving.

One finding of the first study was that the time period between sessions was too long and that all the information could have been gained in less time. The second methodology was tested to determine the potential effectiveness of a highly compressed schedule.

The problem selected concerned bulk product loss issues. Several of management's ideas on the problem were expressed in sketches. Focus groups were selected in five major U.S. markets: Boston, Trenton, Chicago, Dallas and Houston.

Sessions were convened from 8 AM to 11 AM. Sketches of the group's work were produced over an extended lunch break. The group reconvened at 1 PM and the art was reviewed in the afternoon. Each group's contributions were added to the previous groups.' The combined visual portfolio was shown to each successive group in the afternoon sessions. This allowed the groups to brainstorm the issues independently in the morning and then compare their ideation with the preceding groups in the afternoon.

This methodology was extremely effective in gathering a great deal of information in a

concise and understandable format. The results of sessions included over 80 sketches, diagrams, charts and information tables as well as the summary and conclusions of the working group. The results were then published by GF and distributed to the working group participants who were asked to review the information for completeness and for additional insight or comments. Again a questionnaire was included to get the participants' reaction to Visual Technology and recomend improvements.

Case study 3: Corporate Memory Book

One major application of Visual Technology that surfaced during the study was the preservation and future accessibility of the large bank of ideas that resulted from the efforts of the working groups and in the various studies. It was recognized that the knowledge and experience of a company's people represents a valuable asset that could be lost over time. A visual bank for this asset could both protect it and make it usable.

The next format, therefore, was the compilation of a corporate or project "memory book" of concepts and potential business directions or opportunities that had been generated with Visual Technology. With such a memory book each new idea or evolution is referenced by concept, inventors or contributors, and illustration as well as a brief written description of the work. This picture book of ideas provided a easily referenced handbook for review of past achievement, resource information for future direction, and avoidance of duplication of effort.

The book also provides a documentation trail for the intellectual property legal aspects of a project. Each concept visual provides for a disclaimer as well as a title block describing authorship of the concept.

Case study 4: Focus Group Market Testing Support

When undertaking a program of product development a key component is focus group testing. This can be a time consuming and expensive but essential ingredient to the ultimate success of the product. Visual Technology was used to gain market insight of new product concepts and to test ideas without the extensive cost associated with engineering a product to completion.

Artists created illustrations, models and mockups of the products then audited the various focus sessions through one way glass. The concepts and ideas gleaned from auditing these focus sessions were then translated to illustrations. These illustrations provided a highly effective way to evaluate feedback from market testing and also shortened the time and effort normally needed to make necessary changes to the product.

Visual working models of product concepts were also constructed for evaluation of ideas. These prototypical models were constructed as part of the design phase and looked and worked like production units. However, there was no engineering or prototype tooling costs associated with the design studies. Valuable market response data were acquired at one to two orders of magnitude, less cost and time of testing an engineered prototype.

QUESTIONNAIRE RESPONSES FROM PARTICIPANTS

A primary objective of the General Foods study of Visual Technology was a test of its effectiveness as a facilitating service that could improve productivity and produce results. While the findings are still in a formative stage, the quotes from the participants reflect a highly positive response to the process for improving group dynamics.

Following are some of the responses which were typical:

Visual Technology...

". . . reduces and minimizes the possibility of misunderstandings which waste a lot of time in meetings. It provides the necessary focus on the practical problem which results in a discussion and a solution to a very tactical problem."

". . .allows the participants to more easily internalize someone else's concept. That makes it easier for other participants to properly evaluate it and either complement or build on the concept."

". . .breaks down the 'premature evaluation process' which occurs when ideas and concepts are in a verbal form and people simply do not understand them."

". . .truly facilitates people working together--even people who have difficulty working together under other circumstances."

". . .helped focus the organization on 'what and where you want to wind up.' It truly fosters teamwork. It was impressive because everyone was trying to think positively and build on the (another) individual's idea."

". . .allows you to see something concrete and then conceptualize where it could go from there."

". . .helped us define a master plan that we could break down into workable components."

RESULTS/BENEFITS OF GENERAL FOODS STUDIES

This limited selection of responses suggests that the applications for Visual Technology could encompass virtually any industry or enterprise that depended on a group of people working together effectively. However, there were several specific benefits identified by Dr. Fazzina for Kraft/General Foods from use of the Visual Technology process for innovation planning and problem solving within the limited scope of the previous applications:

1. Improved progress toward world class company status.

2. Created a unique team building environment which transcended functional and language/cultural barriers leading to universal concepts and business opportunities.

3. Synthesized international resources into a global strategic innovation focus with action plan orientation.

4. Facilitated understanding of worldwide technological complexity by headquarters' non-technical management and provided valuable outside input to stimulate innovation.

5. Enhanced clearer strategic thrust for the emergence of the 1992 European Common Market and for the Pacific Rim and the Americas.

6. Provided insights into worldwide technology, operations and strategic initiatives and stimulated a critical communication and innovation focus.

7. Established a powerful "creative idea bank" with a portfolio of near and longer term innovations to improve product and process positioning and to address numerous near-term issues identified by field and customer sources.

FEATURES/CHARACTERISTICS

As conceived and presented, the Visual Technology process can be used for a variety of management objectives related to innovation and strategic planning. Following are some identified characteristics of the process:

1. A methodology for systematically collecting the combined wisdom of members of a working group, a company, professionals (executive, functional and field/customer contact personnel).

2. Ability to generate zero-based conceptualization of future opportunities and a strategy.

3. Establishes a broad-based sense of ownership within an organization for specific action plans.

4. Breaks down barriers of functional and multi-national cultures.

5. Ability to communicate quickly and clearly large, complex concepts or bodies of information.

SUMMARY

While using art to communicate ideas is ancient, using art as a codifies professional practice is , to the knowledge of the authors, a new discipline. This new professional practice could be analogous to the development of Industrial Design as a professionl practice in the early part of the century.

In "Art and the Information Revolution" by Paul Brown, published in Leonardo Magazine, 1989. the author addresses the problems of handling and communicating the enormous volumes and variety of information of the "Information Age". He notes "The visual cortex operates a speeds that would tax even the most powerful modern supercomputers, thus graphics communication is powerful and effective."

The disciplined "Visual Technologist", the artist able to listen and translate many disciplines' languages to the single language of visuals--be they drawings, computer graphics, or models--may well be one key to managing the endeavors of the future.

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