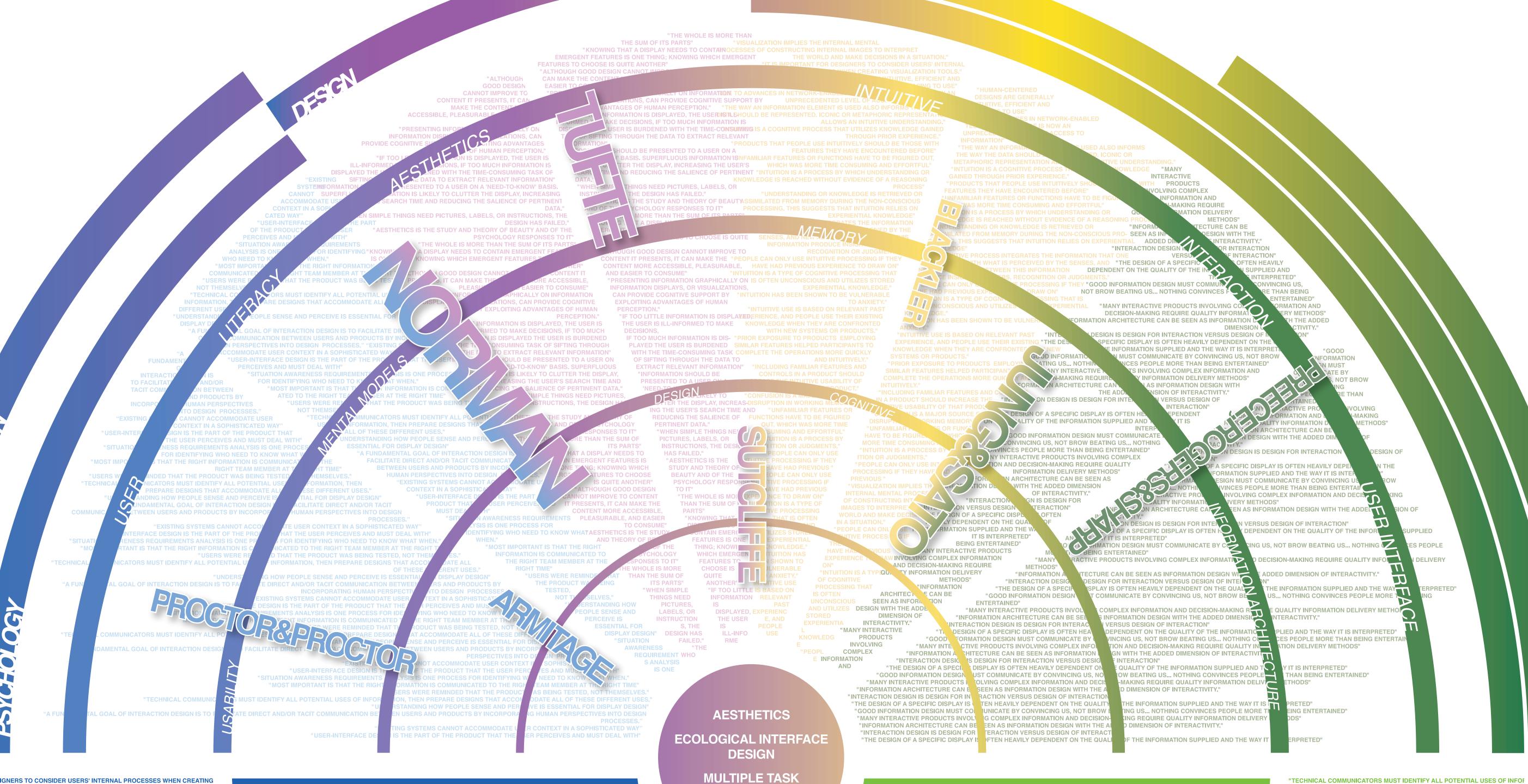
Visual Information Management within Fire Response Organizations

Erin Hueston, Rob Mcalpine, and Thomas Garvey

School of Industrial Design, Carleton University Ontario Ministry of Natural Resources



OR DESIGNERS TO CONSIDER USERS' INTERNAL PROCESSES WHEN CREATING ERED DESIGNS ARE GENERALLY INTUITIVE, EFFICIENT AND PLEASING TO USE" **ODUCTS INVOLVING COMPLEX INFORMATION AND DECISION-MAKING REQUIRE QUALITY INFORMATION DELIVERY METHODS"** IN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEA IAT THE RIGHT INFORMATION IS COMMUNICATED TO THE RIGHT TEAM MEMBER The objectives of this research circulate around the need to gain further knowledge in DING HOW PEOPLE SENSE AND PERCEIVE IS ESSENTIAL FOR DISPLAY DESIGN" ON DESIGN MUST COMMUNICATE BY CONVINCING US, NOT BROW BEATING US... NOTHING CONVINCES PEOPLE MORE THAN BEING ENTERTAIN work directly with the team at the Ministry of Natural Resources (MNR). IS IN NETWORK-ENABLED TECHNOLOGIES, THERE IS NOW AN UNPRECEDENTED LEVEL OF ACCESS TO INFORMATION" IGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEAL The meetings with the MNR team will help me to develop a better understanding of the processes that each member goes through everyday within the Sector Response Office SIGN CANNOT IMPROVE THE CONTENT IT PRESENTS, IT CAN MAKE THE CONTENT MORE ACCESSIBLE, PLEASURABLE, AND EASIER TO CONSUME" (SRO). The level of understanding that I would like to develop is one that will allow MENTAL GOAL OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR TACIT me to develop a work flow that will identify any problem areas within the current TWEEN USERS AND PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES INTO **?S WERE REMINDED THAT THE PRODUCT WAS BEING TESTED, NOT THEMSELVES."** ANDING HOW PEOPLE SENSE AND PERCEIVE IS ESSENTIAL FOR DISPLAY DESIGN" My ultimate goal will be to develop a system that will make the process of IGN MUST COMMUNICATE BY CONVINCING US, NOT BROW BEATING US... NOTHING problem solving and decision making much easier for the individuals CONVINCES PEOPLE MORE THAN BEING ENTERTAINED" TTWORK-ENABLED TECHNOLOGIES, THERE IS NOW AN UNPRECEDENTED LEVEL OF using the system. Ideally I would like to use the knowledge that is ACCESS TO INFORMATION" IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEAL WITH" gained through my research to develop a system that is intuitive, N CANNOT IMPROVE THE CONTENT IT PRESENTS, IT CAN MAKE THE CONTENT MORE efficient and easy for the user to learn and understand. ACCESSIBLE, PLEASURABLE, AND EASIER TO CONSUME" L OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR TACIT COMMUNICATION PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES INTO DESIGN PROCESSES." Working with the systems that are currently in use within N-CENTERED DESIGNS ARE GENERALLY INTUITIVE, EFFICIENT AND PLEASING TO USE" the SRO rooms at the MNR offices will help me to DUCTS INVOLVING COMPLEX INFORMATION AND DECISION-MAKING REQUIRE QUALITY understand the immediate needs of different INFORMATION DELIVERY METHODS" NIGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEAL WITH" individuals within the team. This understanding THAT THE RIGHT INFORMATION IS COMMUNICATED TO THE RIGHT TEAM MEMBER AT THE will help in the development of a system "USERS WERE REMINDED THAT THE PRODUCT WAS BEING TESTED, NOT THEMSELVES." that will improve the work of all team NDERSTANDING HOW PEOPLE SENSE AND PERCEIVE IS ESSENTIAL FOR DISPLAY DESIGN" TION DESIGN MUST COMMUNICATE BY CONVINCING US, NOT BROW BEATING US... NOTHING CONVINCES PEOPLE MORE THAN BEING ENTERTAINED" TTWORK-ENABLED TECHNOLOGIES, THERE IS NOW AN UNPRECEDENTED LEVEL OF ACCESS E DESIGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEAL WITH ANNOT IMPROVE THE CONTENT IT PRESENTS, IT CAN MAKE THE CONTENT MORE ACCESSIBLE, PI FASIIRABLE. AND EASIER TO CONSUME" \L OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR TACIT COMMUNICATION BETWEEN USERS AND PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES INTO DESIGN PROCESSES." NETWORK-ENABLED TECHNOLOGIES, THERE IS NOW AN UNPRECEDENTED LEVEL OF ACCESS TO TERFACE DESIGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEAL WITH" 'SIGN CANNOT IMPROVE THE CONTENT IT PRESENTS, IT CAN MAKE THE CONTENT MORE ACCESSIBLE,

PLEASURABLE, AND EASIER TO CONSUME" FINTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR TACIT COMMUNICATION BETWEEN USERS AND PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES INTO DESIGN PROCESSES." "HUMAN-CENTERED DESIGNS ARE GENERALLY INTUITIVE, EFFICIENT AND PLEASING TO USE" UCTS INVOLVING COMPLEX INFORMATION AND DECISION-MAKING REQUIRE QUALITY INFORMATION DELIVERY "USER-INTERFACE DESIGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEAL WITH" RTANT IS THAT THE RIGHT INFORMATION IS COMMUNICATED TO THE RIGHT TEAM MEMBER AT THE RIGHT TIME" "USERS WERE REMINDED THAT THE PRODUCT WAS BEING TESTED. NOT THEMSELVES." 'UST COMMUNICATE BY CONVINCING US, NOT BROW BEATING US... NOTHING CONVINCES PEOPLE MORE THAN BEING ENTERTAINED" NETWORK-ENABLED TECHNOLOGIES, THERE IS NOW AN UNPRECEDENTED LEVEL OF ACCESS TO DESIGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEAL WITH" SIGN CANNOT IMPROVE THE CONTENT IT PRESENTS, IT CAN MAKE THE CONTENT MORE ACCESSIBLE, PLEASURABLE, AND EASIER TO CONSUME" 'NTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR TACIT COMMUNICATION TS BY INCORPORATING HUMAN PERSPECTIVES INTO DESIGN PROCESSES." DESIGNS ARE GENERALLY INTUITIVE, EFFICIENT AND PLEASING TO USE" 'NVOLVING COMPLEX INFORMATION AND DECISION-MAKING REQUIRE QUALITY INFORMATION DELIVERY METHODS" **`RT OF THE PRODUCT THAT THE USER PERCEIVES AND MUST**

GHT INFORMATION IS COMMUNICATED TO THE RIGHT

YAT THE PRODUCT WAS BEING TESTED, NOT

`E AND PERCEIVE IS ESSENTIAL FOR

THE PRODUCT THAT THE

'ND MUST DEAL WITH"

YE THE CONTENT

"TENT MORE

TEAM MEMBER AT THE RIGHT TIME"

THEMSELVES."

DISPLAY DESIGN"

OBJECTIVES

members involved.

CONTEXT

ENVIRONMENTS

The research done within the literature and with the MNR will be revolving around the topic of aesthetics within ecological interface design in multiple

The area of aesthetics is of interest in that it will help me understand how to use them efficiently within an interface. I would like to learn how to use aesthetics in way that will make the system and information that it presents intuitive and easy to understand.

Ecological interface design is a term that has surfaced in many of my readings and it fits well into the type of design that I am interested in in this project. Within ecological interface design users are required to be adaptive and problem solve within an ever changing system. As this describes the environment in the SROs exactly, furthering my research in this area will be very beneficial to my

varies in complexity from one area to another. This definition also appeals to my work with the MNR and is something that I will be exploring further.

The information gathered from meetings with the MNR will be used to develop work within these areas of study. The current direction of this thesis is to revolve around these three key terms.

Multiple task environments are systems where individuals interact within an environment that

RESEARCH PLAN

All literary research will continue throughout the development of the thesis. Topics will revolve around the chosen context and take on the form of journals, books,

The work with the MNR will be the next valuable step in my research development. I plan to work closely with different members of the team to develop a better understanding of how the current system works for them individually and as a group. I also hope to discover problem areas and areas that work well for everyone to serve as examples of where to proceed and what to avoid.

While doing this research I plan to develop a few examples of system possbilities which use the information that was gathered in all of my research. I will then test these new systems with the members of causing problems. I will then adjust the designs accordingly.

> I will continue with this process until the system is completed to satisfy the needs to my research and the needs of the team at the MNR.

KNOWING THAT A DISPLAY NEEDS TO CONTAIN EMERGENT FEATURES IS ONE "WHEN SIMPLE THINGS NEED PICTURES, LABELS, OR INSTRUCTIONS, THE DES "GOOD INFORMATION DESIGN MUST COMMUNICATE BY CONVINCING US, NOT B NOTHING CONVINCES PEOPLE MORE THAN BEING ENTERTAINED" "MOST IMPORTANT IS THAT THE RIGHT INFORMATION IS COMMUNICATED TO TH INFORMATION IS LIKELY TO CLUTTER THE DISPLAY, INCREASING THE USER'S SE REDUCING THE SALIENCE OF PERTINENT DATA." MUCH INFORMATION IS DISPLAYED THE USER IS BURDENED WITH THE TIME-CON SIFTING THROUGH THE DATA TO EXTRACT RELEVANT INFORMATION" "PRESENTING INFORMATION GRAPHICALLY ON INFORMATION DISPLAYS, OR VISI PROVIDE COGNITIVE SUPPORT BY EXPLOITING ADVANTAGES OF HUMAN PERCEF "USER-INTERFACE DESIGN IS THE PART OF THE PRODUCT THAT THE USER PERC" "INFORMATION ARCHITECTURE CAN BE SEEN AS INFORMATION DESIGN WITH THE

PREPARE DESIGNS THAT ACCOMMODATE ALL OF THESE DIFFERENT USES."

"A FUNDAMENTAL GOAL OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/ COMMUNICATION BETWEEN USERS AND PRODUCTS BY INCORPORATING HUMAN F "IF TOO LITTLE INFORMATION IS DISPLAYED, THE USER IS ILL-INFORMED TO MAKE

INFORMATION IS DISPLAYED THE USER IS BURDENED WITH THE TIME-CONSUMING THROUGH THE DATA TO EXTRACT RELEVANT INFORMATION" "PRESENTING INFORMATION GRAPHICALLY ON INFORMATION DISPLAYS OR VISUAL COGNITIVE SUPPORT BY EXPLOITING ADVANTAGES OF HUMAN PERCEPTION." "USER-INTERFACE DESIGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVF "INFORMATION ARCHITECTURE CAN BE SEEN AS INFORMATION DESIGN WITH THE AD "A FUNDAMENTAL GOAL OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR T BETWEEN USERS AND PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES INTO DF

"INFORMATION ARCHITECTURE CAN BE SEEN AS INFORMATION DESIGN WITH THE ADDF "A FUNDAMENTAL GOAL OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR TAC BETWEEN USERS AND PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES INTO DES' "IF TOO LITTLE INFORMATION IS DISPLAYED, THE USER IS ILL-INFORMED TO MAKE DECISI" INFORMATION IS DISPLAYED THE USER IS BURDENED WITH THE TIME-CONSUMING TASK O' DATA TO EXTRACT RELEVANT INFORMATION" PRESENTING INFORMATION GRAPHICALLY ON INFORMATION DISPLAYS, OR VISUALIZATION SUPPORT BY EXPLOITING ADVANTAGES OF HUMAN PERCEPTION." "USER-INTERFACE DESIGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND IV "INFORMATION ARCHITECTURE CAN BE SEEN AS INFORMATION DESIGN WITH THE ADDED DIM" "TECHNICAL COMMUNICATORS MUST IDENTIFY ALL POTENTIAL USES OF INFORMATION, THEN ! ACCOMMODATE ALL OF THESE DIFFERENT USES." "KNOWING THAT A DISPLAY NEEDS TO CONTAIN EMERGENT FEATURES IS ONE THING; KNOWING $^\circ$ FEATURES TO CHOOSE IS QUITE ANOTHER" "WHEN SIMPLE THINGS NEED PICTURES, LABELS, OR INSTRUCTIONS, THE DESIGN HAS FAILED."

"MOST IMPORTANT IS THAT THE RIGHT INFORMATION IS COMMUNICATED TO THE RIGHT TEAM MEMBER "INFORMATION SHOULD BE PRESENTED TO A USER ON A 'NEED-TO-KNOW' BASIS. SUPERFLUOUS INFOP CLUTTER THE DISPLAY, INCREASING THE USER'S SEARCH TIME AND REDUCING THE SALIENCE OF PERTIP "IF TOO LITTLE INFORMATION IS DISPLAYED. THE USER IS ILL-INFORMED TO MAKE DECISIONS. IF TOO MUC" THE USER IS BURDENED WITH THE TIME-CONSUMING TASK OF SIFTING THROUGH THE DATA TO EXTRACT RF "PRESENTING INFORMATION GRAPHICALLY ON INFORMATION DISPLAYS, OR VISUALIZATIONS, CAN PROVIDE C **EXPLOITING ADVANTAGES OF HUMAN PERCEPTION."** "USER-INTERFACE DESIGN IS THE PART OF THE PRODUCT THAT THE USER PERCEIVES AND MUST DEAL WITH" INFORMATION ARCHITECTURE CAN BE SEEN AS INFORMATION DESIGN WITH THE ADDED DIMENSION OF INTERAC "A FUNDAMENTAL GOAL OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR TACIT COMMUNICATION F PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES INTO DESIGN PROCESSES." "INFORMATION ARCHITECTURE CAN BE SEEN AS INFORMATION DESIGN WITH THE ADDED DIMENSION $\, m{ ext{f}} \,$

"GOOD INFORMATION DESIGN MUST COMMUNICATE BY CONVINCING US, NOT BROW BEATING US... N

"IF TOO LITTLE INFORMATION IS DISPLAYED, THE USER IS ILL-INFORMED TO MAKE DECISIONS DISPLAYED THE USER IS BURDENED WITH THE TIME-CONSUMING TASK OF SIFTING THRO RELEVANT INFORMATION" "A FUNDAMENTAL GOAL OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/C BETWEEN USERS AND PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES "IF TOO LITTLE INFORMATION IS DISPLAYED, THE USER IS ILL-INFORMED TO INFORMATION IS DISPLAYED THE USER IS BURDENED WITH THE TIME-C' THROUGH THE DATA TO EXTRACT RELEVANT INFORMATION" "PRESENTING INFORMATION GRAPHICALLY ON INFORMATION P" PROVIDE COGNITIVE SUPPORT BY EXPLOITING ADVANTAGE "USER-INTERFACE DESIGN IS THE PART OF THE PRODU" "INFORMATION ARCHITECTURE CAN BE SEEN !

"A FUNDAMENTAL GOAL OF INTERACTION DESIGN IS TO FACILITATE DIRECT AND/OR TACIT COM/

AND PRODUCTS BY INCORPORATING HUMAN PERSPECTIVES INTO DESIGN PROCESSES."

ADDED DIMENSION OF INTERACTIVITY."

INFORMATION, THEN PREPARE DF

THESE DIFFERENT USES,"

FEATURES IS ONE T

FEATURES TO 1

"KNOWING THAT A DISP

"TECHNICAL COMMUNICATORS MUST "