MEMORANDUM

TO: Wyatt Barbee, CBA
    Jeffrey Blomberg, Computing Center
    Eric Flower, UH - West Oahu Library
    Ralph Freese, Mathematics Department
    Bob Hirata, Honolulu Community College
    Dan Ishii, OTTED
    Henry Ito, Management Systems Office
    David Lassner, OIT
    Scott Masuno, Windward CC
    Lindy Naj, Hamilton Library
    Torben Neilsen, ICS
    Amy Oloufa, Civil Engineering

FROM: Walter Yee, Chair
      Networking Subcmmitee,
      Strategic Plan For Information Technology.

SUBJECT: First Draft

David Lassner has put together the things that we had discussed at our November 13th meeting.

Please review the attached and feel free to add, change or delete as you may wish.

The attached information along with any additional thoughts will be discussed further at our next meeting which will be held at 3 PM in Bachman 113, on Tuesday, November 20.

Thank you for your participation.

Enclosure

cc: Strategic Plan for Information Technology Steering Committee
Strategic Plan for Information Technology (IT)
Networking Subcommittee

Overall Comments

The strategic objective is to provide, on every campus, voice, data, and video capabilities in every classroom, and voice and data capabilities in every office. Each location should have full access to local, statewide, and worldwide information, programming and resources.

The University system must commit to providing a backbone and external connectivity appropriate to a major research university. This will require regular assessment of bandwidth supply and demand as well as constant monitoring of technology and protocol trends to assure our compliance with appropriate standards.

There should be a timeframe, e.g. 6 years, associated with the plan.

The plan should address the overall strategy of the University in the areas of research on information technology and networking, and instruction about information technology and networking.

Organizational Issues

The implementation and maintenance of a systemwide telecommunications backbone for voice, data and video, is a responsibility of the UH system rather than each or any college or campus. Along with the responsibility for the backbone is the responsibility for providing external video and data connectivity for the entire system through the backbone.

Data, video, and voice networking issues need to be considered together rather than as three distinct problems.

Human Resources and Space

We need far more support staff and space to accommodate them (offices and work areas) to be able to adequately develop, manage, and maintain our networks. This need becomes more acute as the network user community grows through both local and national developments.
MEMORANDUM

November 15, 1990

TO: Wyatt Barbee, CBA
    Jeffrey Blomberg, Computing Center
    Eric Flower, UH - West Oahu Library
    Ralph Freese, Mathematics Department
    Bob Hirata, Honolulu Community College
    Dan Ishii, OTTED
    Henry Ito, Management Systems Office
    David Lassner, OIT
    Scott Masuno, Windward CC
    Lindy Naj, Hamilton Library
    Torben Neilsen, ICS
    Amy Oloufa, Civil Engineering

FROM: Networking Yee, Chair

SUBJECT: First Draft

David Lassner has put together the things that we had discussed at our November 13th meeting.

Please review the attached and feel free to add, change or delete as you may wish.

The attached information along with any additional thoughts will be discussed further at our next meeting which will be held at 3 PM in Bachman 113, on Tuesday, November 20.

Thank you for your participation.

Enclosure

cc: Strategic Plan for Information Technology Steering Committee
Overall Comments

The strategic objective is to provide, on every campus, voice, data, and video capabilities in every classroom, and voice and data capabilities in every office. Each location should have full access to local, statewide, and worldwide information, programming and resources.

The University system must commit to providing a backbone and external connectivity appropriate to a major research university. This will require regular assessment of bandwidth supply and demand as well as constant monitoring of technology and protocol trends to assure our compliance with appropriate standards.

There should be a timeframe, e.g. 6 years, associated with the plan.

The plan should address the overall strategy of the University in the areas of research on information technology and networking, and instruction about information technology and networking.

Organizational Issues

The implementation and maintenance of a systemwide telecommunications backbone for voice, data and video, is a responsibility of the UH system rather than each or any college or campus. Along with the responsibility for the backbone is the responsibility for providing external video and data connectivity for the entire system through the backbone.

Data, video, and voice networking issues need to be considered together rather than as three distinct problems.

Human Resources and Space

We need far more support staff and space to accommodate them (offices and work areas) to be able to adequately develop, manage, and maintain our networks. This need becomes more acute as the network user community grows through both local and national developments.
Intercampus Networking

Our intercampus network should provide:
  • advanced voice services among all campuses, such as toll-free calling and voice-mail.
  • full access to computer/information resources on any campus and to all available external connections.
  • 2-way, multi-channel video capacity among all campuses and permanent off-campus delivery sites.

The university network must be autonomously managed by the university, without undue external influence from the State. To the extent other State agencies serve as network carriers, the University must ensure that:
  • University interests are considered in network development and management.
  • University infrastructure is developed so as to provide the option of utilizing other commercial or non-commercial carrier services.

External Networking

Development and management of our external data connections should be an institutional commitment. The University should be actively involved in national networking initiatives and assure that the greatest possible level of federal support is provided to maintain our connection at a level comparable to that of similar institutions.

The University system should provide for adequate external video connectivity including satellite downlink and uplink capability.

The University must be committed to providing access to its information systems and resources to members of the University community in their homes at the maximum level allowable by the public switched network.

Other Issues Not Discussed

Policy -- Do we need network policies and if so, in what areas?

Should we be developing email/fax/campus mail connectivity?
Strategic Plan for Information Technology Subcommittees

1) **Access** - Issues relating to providing appropriate access to equipment, networks, and information; e.g. library resources, universal email for students; bulletin boards; access to databases and documents; student and faculty access to administrative information about themselves; access to institutional information such as directories, calendars, program information, schedules, job openings; access to some level of equipment such as computers and printers in public labs. *John Haak, Stephen Itoga, Keith Workman, Rod Reynolds, Stephen Odo, Gary Shibuya (CC), Charles Aoki (KapCC), Ken Herrick (UHH), Dan Wedemeyer.*

2) **Research** - Providing supercomputer capability; hardware and software for visualization; graphic/publication output support; specialized consulting for vectorization, etc. *Gerard Fryer, Tjet Sun, John Head, Dick Chadwick, Ken Hensarling (HonCC).*

3) **Instruction** - Equipment, support and incentives for faculty to integrate technology into the curriculum; relation to tenure & promotion process; technology required in classrooms; video production capabilities; distance education and technology. *Mike Pecsok, Walter Creed, Tom Speitel, Herb Ziegler, Geoff Ashton, Mike Albright, Curtis Ho, Hae Okimoto, Mark Slattery (MCC), Tom Speitel, Shirley Metcalf (UHH), Paula Mochida, Bert Kimura (KapCC).*

4) **Networking** - Inter- and Intra-campus architectures; cost allocation and/or recovery; network management; access to regional/national/international networks; Intrastate and external video connectivity. *Walter Yee, Jeff Blomberg, Wyatt Barbee, Amr Oloufa, Ralph Freese, Torben Nielsen, Henry Ito, Bob Hirata (HonCC), Scott Masuno (WCC), Eric Flower (UH-WO), Lindy Naj, Dan Ishii, David Lassner.*

5) **Support** - Establishment of "standards" for hardware, software, networking and provision of support in selection, procurement, installation, maintenance, upgrading, training, usage, and integration with centralized facilities/databases. *Judy Kautz, Harry Partika, Jonathan Yuen, Russell Yost, Dennis Taga, Rich Yamane (LCC), Milton Cha (KauCC), Richard Weiss (UHH), Gary MacMillan.*

6) **Infrastructure** - Optimal organizational structure for information technology; How centralized should funding/support be; What facilities are needed; Policy development; human resources problems in information technology support in the university. *David Lassner, Judy Kautz, Walter Yee, Mitchel Gomes, Mike Unebesami (LCC), Milton Higa (UH-WO), Gayle Komata, Jean Ehrhorn, Dan Ishii.*

7) **Administrative Computing** - Single-image access to information; decentralized access to centralized databases; strategic systems; electronic forms processing. *Drue McGinnes, Sylvia Higashi, Jan Joyer, Henry Ito, Ken Nakahara, Gary Shibuya (CC), Dennis Taga.*
Rough Summary of Issues for UH Strategic Plan for Information Technology

I. Background on UH
   • Description of our institutional culture (do we expect to be leading edge or second wave or third rate)
   • UH Areas of Priority and Information Technology (IT) implications
   • Environmental context (relevant social, economic, political, technical, geographic issues) e.g. explosive growth, impacts, state initiatives

II. Where does UH want to be with IT -- Empowerment of Students/Fac/Staff
   • Preparation for the 21st century
   • Changing the way we function
     Telelearning -- how will IT transform teaching and learning can students learn from off-campus
     Telework -- can UH faculty/staff work from off-campus can students learn from off-campus
   • "all services on all campuses on all islands to all constituents"

III. IT Services
   • Services to Students
     Dorms
     what kind of data access in rooms? computer labs? chargeback?
       commercial cable tv? instructional tv? in rooms or lounges?
     Students
     universal email
     universal voice mail
     bulletin board access
     integrated access to academic records, financial stmts
     Public Computer Labs
     what should be in them
       workstations/types/numbers
       input devices (scanners...)
       output devices (color, slides, video)
       "universal" media and format conversion
     should there be more
     who should manage them (depts? colleges? computing centers?)
     who should buy eqpt for them (depts? comp centers? colleges?)
   • Services to Faculty/Academic Staff
   • Services to Administrators/Staff
   • Institutional information and services at the desktop
   • Services to the Community
III. Where are we now with IT
- What are we doing well
- What aren't we doing well

IV. What technology is needed to provide the services we need
- Architectural vision of single image networked information and services
- Networking infrastructure
  National/Int'l & Intercampus & Intracampus & Community
  Departmental needs assessment, installation, operation & mgmt
- General Hardware/Software/Support
  Information Services
    job openings, calendars of events, fac/student/staff directories,
    information kiosks, financial aid info, grant info, course schedule,
    campus maps, program information (staff, operations,
    organization), campus network info, how-to info, athletic
    schedules, departmental bboards & services, living technology
    databases (resources, obsolete eqpt exchange)
  Email services & directories and integration with fax & campus mail
  Improved computer conferencing services
  Databases
    making available text and numeric and image databases?
    acquiring and updating and supporting them?
    providing and supporting "standard" analysis tools
  High quality output devices on network
    high speed laser
    color printing
    slides
- Research Hardware/Software/Support
  Supercomputing - access, specialized consulting, network support
- Instructional Hardware/Software/Support
  Support and incentives for faculty
  technology needed in labs and classrooms
- Administrative Hardware/Software/Support
  Single Image Distributed Access to Data
- Video Facilities
  Video production capability
  Access to HITS/Campus Video Networks
  Access to national/international satellite uplinks and downlinks
- External Services
V. What infrastructure and policy changes are required

- **Space**
  
  What is needed, for whom, how to get it

- **Organizational -- Does our org work? Can it continue?**
  
  Macro issues
  
  System-Manoa
  Admin-Academic (UHCC-MSO-{personnel/finance/studentaffairs})
  Central Support Unit - Departmental/College responsibilities:
    who should budget for support staff? technology? maint?
    (e.g. depts provide devices on desktop and departmental lan
    hardware, central units provide wiring infrastructure and
    universitywide network and facilities)

  User input -- committees (admin and/or academic)
  Vertical or horizontal support
  Adequate compensation for technical staff / staff development

- **Financing**
  
  How should we plan, budget, finance, and procure IT:
    centrally and departmentally; public and "private" systems
  Planning and budgeting for obsolescence and replacement
  Campus/intercampus/external networks -- who pays

- **Standards for**
  
  Hardware, Software, Networks, Security (e.g. network topology)
  Enforced or suggested?
  Supported by all IT support units for:
    acquisition, installation, upgrades&maint, usage

- **Policies on**
  
  Security
  Ethical use / Piracy
  Free Expression / Censorship
  Privacy
A Strategy
For Academic
Quality

1985–95

University of Hawaii
July 1984
D. STRATEGIC DIMENSION: Adapting to Scientific and Technological Change

The world is currently in the midst of a profound technological revolution with which the University of Hawaii must reckon. The driving technologies in this revolution are those in telecommunications (meaning not only the hardware and software of computers, mainframe and personal, but also the audio-visual technologies of film, video, and audio recording), robotics and bioengineering.

Harnessing these technologies and providing training in their uses must be a major dimension of University of Hawaii activity over the next ten years. This dimension has at least three different facets. The first facet requires the examination of all aspects of the mission of the University, to determine how current technologies might enable the University to better fulfill its mission.

The second facet of harnessing technology relates to the obligation of the University to be on the forefront of inventing, testing, and developing new technologies, not only for its own use but also for use by residents of the State and the broader society. The University will need to be selective in the areas which it chooses to work, opting to lead in those areas where it has a comparative advantage, or regional responsibility, or in order to overcome a particular disadvantage. For example, the University of Hawaii is physically isolated, and it must become a leader in the development and utilization of telecommunications. Telecommunication networks must be seen as the nerves and vessels which will give new life and energy to our rejuvenated system of higher education. Any university that intends to become fully viable over the next decade and beyond must incorporate telecommunications into its operations.

The third facet of harnessing technology refers to the necessity of training people in its use and application for human purpose rather than letting it dominate or dehumanize us. Concerns about the negative aspects of technology must be seriously assessed, and the technology we adopt for ourselves must be used with careful experimentation and evaluation.

D.1 Strategic Objective: To incorporate telecommunication systems selectively into all aspects of the teaching and research mission of the university.

All students, faculty and staff should have easy, continuous and inexpensive access to terminals for word processing, formal and informal instruction, electronic mail and computer conferencing services locally and worldwide, data retrieval and manipulation from local, national, or international sources, and other purposes related to teaching and learning.

Professional development workshops for faculty and staff are needed to facilitate their use of telecommunication systems. Incentives should be created to encourage faculty and staff to move towards the creative and responsible use of telecommunication systems in their area of expertise and concern.

D.1a Priority Action: Provide computing and communication capabilities and related services at a level that will support intensive use of computers by the faculty, staff, and students of the University of Hawaii.

Time Frame: 1984-95

D.1b Priority Action: Establish an high speed data communication network within and between all campuses in the University.

Plans need to be established on each campus to provide the most efficient and long-term economical solution to meet needs of data transfer between mainframes, minis, micros and terminals. Local area networks are to be established at each campus as funds permit.

Time Frame: 1987-93

D.1c Priority Action: Establish and operate a local computer-based education (CBE) delivery system for use by students as a complement to traditional academic delivery and which would be accessible from any location in the State of Hawaii (and possibly, overseas terminals).

Time Frame: 1985-95

D.2 Strategic Objective: To facilitate academic excellence by implementing and developing an integrated on-line library system for all the campuses of the University of Hawaii and to promote the utilization of media technologies for educational delivery.

D.2a Priority Action: Link libraries on all campuses into a coordinated University
of Hawaii Library Information Network (HawaiiLINK) with linkages to individual campus communications and computing centers and other library and information networks. The Plan is to:

- Build a University of Hawaii Library Information Network (HawaiiLINK) based on an on-line union public catalog.
- Convert UH campus libraries' card catalogs and information files to machine readable forms.
- Improve the capacity to provide access to information sources in other research libraries held in both electronic and traditional print forms.
- Expand high-speed communications to link Hamilton Library to the Computing Center and other campus libraries to the Computing Center.
- Link HawaiiLINK to local, Pacific and US Mainland data bases and to provide campus and local telephone access to electronically accessed information services.

_Time Frame: 1985-95_

_D.2b Priority Action:_ Provide each campus with video origination capability and to provide opportunities for faculty, staff, and students to utilize media techniques for instructional design, alternative delivery, or communications.

_Time Frame: 1987-91_

_D.3 Strategic Objective:_ To harness technology to improve administrative efficiency and effectiveness.

Telecommunications, if used timely and with clear lines of authority, can facilitate decentralized decision-making. The intention is not to tighten control but to effect task accomplishment through speedier and more accurate information transmission to the appropriate levels of decision-making.

_D.3a Priority Action:_ Computers and telecommunications should be utilized for such purposes as student enrollment, class registration, advising, placement, evaluation, intra-student and administration communication, and planning and budgeting requirements.

_Time Frame: 1985-95_

_D.3b Priority Action:_ To provide a central translation facility to facilitate file transfers and document exchange in an electronic mail environment that will enable use by most computer-based and stand-alone word processing systems.

_Time Frame: 1987-95_

_D.4 Strategic Objective:_ To plan wisely for the impact of technology and related social change.

The third facet of “Harnessing Technology” concerns controlling technology for human use. We must guard against losing the traditional values of our intellectual heritage, including interpersonal ways of transmitting and utilizing information. Thus, as we move toward a greater role for telecommunications and other technologies, we must do so with caution, experimentation, criticism, sensitivity, and care.

_D.4a Priority Action:_ Establish responsibility and authority for systemwide planning, coordinating and quality monitoring of computing activity and related technologies.

_Time Frame: 1984-85_

_D.4b Priority Action:_ To balance the use of technologies such as television and computers in instruction with its impacts, the University should ensure that students in all programs have the opportunity to participate in classes which will encourage person-to-person interaction and dialogue, especially for instruction in the general education core.

_Time Frame: 1985-95_

_D.4c Priority Action:_ Actively seek State and private funds to provide new technologies for both students and faculty, and to infuse computer literacy.

_Time Frame: 1984-95_
<table>
<thead>
<tr>
<th>Name</th>
<th>Department/Location</th>
<th>Electronic Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyatt Barbee</td>
<td>College of Business CBA D314</td>
<td><a href="mailto:Barbee@Splicer.cba.hawaii.edu">Barbee@Splicer.cba.hawaii.edu</a></td>
</tr>
<tr>
<td>Jeffrey Blomberg</td>
<td>Computing Center</td>
<td><a href="mailto:Jeff@uhux.uhcc.hawaii.edu">Jeff@uhux.uhcc.hawaii.edu</a></td>
</tr>
<tr>
<td>Eric Flower</td>
<td>West Oahu College Library</td>
<td>Flower@uhccvx or t133970@uhccmvs</td>
</tr>
<tr>
<td>Ralph Freese</td>
<td>Math Keller 303</td>
<td><a href="mailto:Ralph@kahuna.math.hawaii.edu">Ralph@kahuna.math.hawaii.edu</a></td>
</tr>
<tr>
<td>Bob Hirata</td>
<td>Honolulu Community Coll hccada::bob</td>
<td><a href="mailto:ba_hirata@uccada.hcc.hawaii.edu">ba_hirata@uccada.hcc.hawaii.edu</a></td>
</tr>
<tr>
<td>Dan Ishii</td>
<td>Management Systems Office Sinclair 10</td>
<td><a href="mailto:david@uhccux.uhcc.hawaii.edu">david@uhccux.uhcc.hawaii.edu</a></td>
</tr>
<tr>
<td>Henry Ito</td>
<td>Windward Comm. Coll.</td>
<td>Lindy@uhccunix</td>
</tr>
<tr>
<td>David Lassner</td>
<td>Off. of Info. Tech Bachman Annex</td>
<td><a href="mailto:Torben@foralie.ics.hawaii.edu">Torben@foralie.ics.hawaii.edu</a></td>
</tr>
<tr>
<td>Scott Masuno</td>
<td>Hamilton Library</td>
<td><a href="mailto:oloufa@wiliki.eng.hawaii.edu">oloufa@wiliki.eng.hawaii.edu</a></td>
</tr>
<tr>
<td>Lindy Naj</td>
<td>Info. &amp; Comp. Sciences</td>
<td>t004480@uhccmvs</td>
</tr>
<tr>
<td>Torben Nielsen</td>
<td>Civil Engineering</td>
<td></td>
</tr>
<tr>
<td>Amr Oloufa</td>
<td>Computing Center</td>
<td></td>
</tr>
<tr>
<td>Walter Yee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
THE PLAN

In the Beginning there was The Plan.
And then came The Assumptions.
And The Assumptions were without form,
And The Plan was completely without substance,
And Darkness was upon the faces of the students.
And they spoke unto their Professors saying,
It is a Crock of Shit and It Stinketh.
And The Faculty went in to their Chair, and sayeth,
It is a Pail of Dung and none may abide the Odor Thereof.
And the Chair went in to the Dean, and sayeth unto him/her,
It is a Container of Excrement,
And It is Very Strong, such that none here may abide It.
And the Dean went in to the Vice President, and sayeth unto Him,
It is a Vessel of Fertilizer, and none may abide Its Strength.
And the Vice President went to the Faculty Senate, and sayeth,
It contains That Which Aids Plant Growth, and It is Very Strong.
And the Faculty Senate went in to the President, and sayeth unto him,
It Promoteth Growth, and It is Very Powerful.
And the President went unto the Board and sayeth unto them,
This Powerful New Plan will Actively Promote the Growth
And Efficiency of The University, the State, and the World.
And the Board looked upon The Plan, and said that It was Good.
And The Plan became Policy.
Featuring: Dr. Ellis Horowitz

UH's new IBM RISC System/6000s

Dr. Horowitz is best known as the author and co-author of several widely used textbooks and over 60 research articles on computer science subjects ranging from data structures, algorithms, and software design, to computer science education. His general area of research is the field of software engineering. His focus is on the development of methodologies and tools for software design and project management. He is investigating the use of CASE tools for improving the software design process. Two important research directions he is studying are the use of object-oriented design and databases. Dr. Horowitz and his students have developed several major software systems, primarily under UNIX and C. He is the creator of ScriptWriter, a system for building instructional software on the IBM PC family, and CASE-PM, a project management tool that runs under X windows. His use of UNIX workstations includes the study of user interfaces, in particular under Motif, Open Look, the Presentation Manager, and others.

Dr. Horowitz received a BS degree from Brooklyn College and a PH. D. in computer science from the University of Wisconsin. He was on the faculty at the University of Wisconsin and at Cornell University. He has also been a visiting professor at MIT and the Israel Institute of Technology.

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Place</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of IBM RISC System/6000</td>
<td>Keller 303</td>
<td>Nov. 19</td>
<td>3:00-4:00</td>
</tr>
<tr>
<td></td>
<td>Keller 303</td>
<td>Nov. 20</td>
<td>3:00-4:00</td>
</tr>
<tr>
<td>Running an academic department</td>
<td>Kuykendall 207</td>
<td>Nov. 19</td>
<td>1:45-2:30</td>
</tr>
<tr>
<td></td>
<td>Kuykendall 207</td>
<td>Nov. 20</td>
<td>12:15-1:15</td>
</tr>
<tr>
<td>Porting workshop</td>
<td>Keller 204</td>
<td>Nov. 21</td>
<td>10:00-11:00</td>
</tr>
<tr>
<td>Connectivity workshop</td>
<td>Keller 204</td>
<td>Nov. 19</td>
<td>10:00-11:00</td>
</tr>
<tr>
<td>Open Lab</td>
<td>Keller 204</td>
<td>Nov. 19</td>
<td>11:00-12:00</td>
</tr>
<tr>
<td></td>
<td>Keller 204</td>
<td>Nov. 20</td>
<td>2:00-3:00</td>
</tr>
</tbody>
</table>

Overview of the IBM RISC System/6000. Brief overview of the capabilities of the high powered RISC System/6000 and IBM's UNIX - AIX. Dr. Ellis Horowitz will describe how other universities are currently using the RISC System/6000. A demo of the new workstations will follow the presentation in Keller 204.

Running an academic department on an UNIX workstation. Featuring the RS/6000. Dr. Ellis Horowitz will demonstrate and describe applications currently used in academic departments.

Porting Workshop. Stephen Lui from the IBM area support staff in Los Angeles will give a workshop on porting code to the RISC System/6000. Procedures for porting code from other UNIX platforms will be described. Bring your standard C, Pascal or FORTRAN programs on a 3.5" DOS formatted diskette and we will try to port it.

Connectivity Workshop. Stephen Lui will discuss issues related to connecting to the RISC System/6000. Come by and find out how to get your ID. Stephen will demonstrate connectivity to other UNIX workstations.

Open Lab. IBM Specialists will be on hand to demonstrate the RISC System/6000 in Keller room 204. Bring your program and/or questions.

No need to register. Come early for best seating.

If you have any questions or requests please call David Kozuki, Marketing Representative at 533-9413.