circa 1979-1980 - Systems Office created - Carol Tenopir, Head & Winnie Akana, paraprofessional support

ALOHA automated system 1985-1989 - run on 2 mainframe Ultimate computers ("Bert" & "Ernie") with dumb terminal Wyse50s and Gandalf PACX network equipment

1/82 - Ruth Marie Quirk (former student intern in Systems) takes over as Head

circa 1982 Kwock Cheung hired as student programmer. He works for next 10 years as undergrad, graduate student and Computer Specialist

10/87 - Lindy Naj hired as Systems librarian
11/87 - Martha Chantiny hired to be Small/Microcomputer Librarian
1988 - James Adamson hired to be Applications Support Librarian

1989 - first CD ROM Local Area Network (LAN) system (during asbestos removal project)

CARL automated system 1990-1999 (Tandem mini-computer not completely shut down until 2003)

3/89-5/89 - RMQ on family leave, Lindy Naj Acting Head

1991 - first digitization project (Trust Territory of the Pacific Archive, using CARL image system)

7/91-6/92 RMQ on sabbatical, Lindy Naj Acting Head

7/92 - RMQ transfers out of Systems

1992 - second CD ROM LAN in Sci/Tech Ref

1993 - Lindy Naj (LN) takes over as Head of Systems

7/94-2/95 Martha Chantiny Acting Head of Systems (LN on sabbatical)

12/94 - Gary Macmillan, Assoc. Univ. Librarian for Processing, Operations & Automation (POA) retires

1/95 - Lindy Naj named Library Information Technology Services Division Head (Processing/Operations becomes "Collection Services" Division)
5/95 - Desktop Network Services (DNS) unit created, Wil Frost named Head, 2 electronic technicians transferred to DNS out of Systems Office

6/95-2/96 - Jackie Vargo, Acting Head of Systems (MC on sabbatical)

3/96-present - James Adamson, Head of Systems

8/96 - Lindy Naj leaves UH Libraries and position of LIT Division Head

9/96 -2001 - Wil Frost serves as Interim LIT Division Head

6/97 - 232 public and staff PCs

10/98 - three areas of the Special Collections awarded Institute of Museum and Library Services (IMLS) grant for two-year project develop a digital library of Hawaiian and Pacific Islands materials (Hawaiian Newspapers, HWRD, TTP conversion to WWW)

6/99 - Martha Chantiny takes position of Head of DNS

11/99 - Wayne Agunat hired (originally as Electronic Tech - now Computer Specialist for PC & printing support)

VOYAGER automated system 2000 - present (run on Sun Enterprise 4500 servers, PC-based workstations)

2000 - Installed fiber backbone & fast ethernet switches on each floor of HL P1 & 2

10/00 - first Goprint debit printing system installed

1/01 - Beth Tillinghast hired (temporary position) as Web Support Librarian

6/01 - 362 public and staff PCs, "superCD" CD server installed & LAN decommissioned

11/01 - Tom Ishimitsu hired as Computer Specialist for Network Support

2001 - Moved the equivalent of nearly 1,000 items, 400 or more of which were PCs and or printers from Phase II to Phase III during renovation of Ph 1 and 2

1/02 - Implemented Goprint debit printing system at Sinclair

11/02 - Wing Leung hired as Computer Specialist for Server Support

2/03 - first version of Electronic Resources authenticated gateway released

5/03 - Bob Schwarzwalder begins work as AUL for Information Technology
2003 - replaced hubs with switches at Sinclair (improved speed); Wireless installations in: Hamilton 1st floor "Yap alley" area, Phase 3 Sci/Tech periodicals area, Sinclair AV Center, Asia and Special Collections reading room areas. Fifty-eight laptop docking points installed using the same authentication/authorization system as wireless access.

9/03 - Firewall installed in Hamilton Library

7/04 - 560 public and staff PCs including 8 goprint paystations and 2 goprint servers

8/04 - OpenURL implemented

10/04 - FLOOD - see attached

6/05 - Sunny Pai and Wilbur Wong hired as temporary flood recovery Librarian and Computer Specialist, respectively

2005 - Web Help Desk (WHD) software to receive & track requests; Disaster recovery

2/06 - Firewall installed in Sinclair Library

4/06 - Intranet launched

6/06 - Voyager (2M) Self-checkout system "soft launch" in Hamilton Lobby

On Saturday, Oct. 30, 2004 10 inches of rain fell in the Manoa valley district of Honolulu in a 6-hour period. An 8-12 foot wave of water, mud and debris swept through the University of Hawaii. Hamilton Library was directly in the middle of the flood river. Hamilton Library sustained so much infrastructure damage it had to be isolated from the main electrical circuits before the rest of the campus could be powered up again. The Library's central server room located in the basement was completely submerged. All Acquisitions, Cataloging and Serials department staff work areas, offices; the Government Documents and Maps collections and public reading rooms and the Library and Information Science program area was filled with water, in most cases to the ceiling.

In just a few minutes, over 80 public and staff PC workstations (valued at over $100,000) were completely soaked in muddy, rubble-filled water. Most equipment was washed from desks and tables and ended piled in a huge garbage heap at the far end of each department. All of the servers and the central data communications equipment were all located in the basement. Eight Windows-based Servers, one Macintosh G5, a CD image server and the Manoa electronic resources proxy server were all destroyed. A relatively new state of the art security firewall, 10 Cisco network routers and switches along with their associated racks and uninterruptible power supplies were ruined. Ten HP LaserJet and 17 Epson dot-matrix printers, 50 Barcode readers and 2 Flatbed scanners were swept away and thrown about. The very large, heavy system printer ended up nearly completely submerged underwater, beneath what had been the raised floor of the
computer room. A recently purchased Dell Inspiron laptop for Gov Docs - even though it had been stored in a nylon case on a top shelf, was damaged by the combination of water and knocking about. All told, the losses of information technology hardware and software, excluding the main Voyager system was well over $300,000.

Sun Microsystems, the Voyager hardware vendor provided temporary hardware to UH within a couple of days. The Systems Office had to locate a tape drive compatible with the backup tapes, then transfer that data to the new loaner equipment and configure it for the University of Hawaii network.

Assistant University Librarian Bob Schwarzwalder located and Chancellor Englhert approved use of an alternate computer room in Sinclair Library (basement!!) with data communications capacity already in place. Sun Microsystems, the Voyager hardware vendor provided temporary hardware to the Library within a couple of days. The Systems Office had to locate a tape drive compatible with the backup tapes, then transfer that data to the new loaner equipment and configure it for the University of Hawaii network. The main Voyager system was recovered to the point of failure, no data was lost. Even though the central Voyager server and the systems office was rendered uninhabitable, access to the online catalog information was up in 5 days thanks to a combination of help from the vendor, luck in having a technology space immediately available and the hard work of library and campus personnel.

Nearly all of the other servers could be recovered either through use of backups or reinstallation of software. On the morning of November 3rd, Desktop Network Services (DNS) IT Specialist for Server Support, Wing Leung, put a replacement proxy server into action by restoring files from a tape backup onto an older test server which was fortunately located in his office on the first floor, out of flood range. This meant that students and researchers were once again able to reach electronic resources even though the library was physically devastated and the main web server not available. By late that night Wing had restored a facsimile of the main parts of the library web server on a Windows workstation.

DNS staff began to contact vendors about replacements and donations. GoPrint Systems, Inc. generously donated a new server and paystation for only the maintenance costs to replace the equipment wrecked by the floodwaters. Dell Microsystems, Inc. donated two Poweredge servers to replace equipment that had been purchased less than 6 months earlier and installed in the basement computer room. Technological recovery could not have moved as rapidly as it did without the much-appreciated generosity of these vendors.

By the end of the day on October 31st, the main server equipment had all been pulled out of the basement and hosed off; the hard drives were removed and saved in the hope that they could be recovered. In less than a week Ontrack Data Recovery service were able to retrieve a great deal of the most recent transaction data (check outs and in, purchases) from the Voyager server as well as data files from the library web server. Ontrack and later SuperGeeks were able to salvage a smaller proportion of the data from staff PC hard
drives. Unfortunately even a sealed hard drive is not designed to stand up to being washed about in muddy water, slammed up against walls and furniture, and then percolated in humid, dark conditions.

There were a number of Library web page files which were not recoverable from the hard drives. The backup tapes had been in the computer room and were unusable (a large number were found in the downstream men's bathroom inside toilets and urinals). Happily, the power of the Internet came into play at this point - the fantastic and completely profit-free "Wayback Machine" (AKA the Internet Archive) had stored many of the missing files and made them available to the library.

Less than 10 days after the flood, Tom Ishimitsu, DNS IT Specialist for Networks was able to patch together network connections from part of the "dark side" of Hamilton - using redundant equipment that was fortunately located in the new part of the building which escaped major damage. With the return of a little lighting (via extension cords to temporary generators) we were on the road to IT recovery.

Submitted by Martha Chantiny, June 19, 2006.