CD-ROM Networks

Before I start talking about CD-ROM networking I would like to tell you a little about Chalmers University.

Chalmers University of Technology is located in Gothenburg on the west-coast of Sweden. It was founded in the beginning of the nineteenth century and today there are nine different schools of engineering and architecture. There are about 4300 students at undergraduate level attending four-and-a-half-year engineering courses leading to a Master-degree of Science in Engineering or a Master of Architecture. There are also about 900 graduate students working for their PhD degrees.

The main Library of Chalmers serves as a central library to all the schools of engineering and it also serves as a technical central library to the industries of Western Sweden. The library has about 90,000 books and holds approximately 4000 current journals. The library has the most recent parts of the collection on open access. Recently the library acquired an automated library system (LIBERTAS) and the OPAC was introduced last summer.

Why networking?

In 1988 we started to test some CD-ROM databases at Chalmers Library. The trials turned out to be very successful and there was a great user demand for a public service. We decided to use the CD-ROM on a network as this option offered a number of advantages over a standalone configuration. One year later, on a small budget, and with no experience of using a CD-ROM on a network available in Sweden, we took our first steps into this new world. Since then we have gradually expanded our network and today the network has the following configuration:

We have LANtastic from Artisoft as network operation system running on twisted paircables using LANtastic's

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proprietory hardware (2Mbit/s). As optical software we have OPTI-Net from On-line Computer Services. We have two file-servers in the network and a total of 26 Hitachi 3650 build-in CD-players, an old Philips cd-player and a Pioneer jukebox. To the network we have connected 15 workstations, 4 workstations in the public area, 4 workstations for library staff and 7 workstations for educational purposes. We have 9 different databases on 28 different CD-discs running on the network at the moment. We are also running Current Contents on the network.

Problems

When I read articles about CD-ROM networks I always get thoughtful and a little bit suspicious especially when CD-ROM networks seemed to have been installed without any problems - perhaps the system needed to be rebooted once or twice and maybe there was a noisy printer — but nothing else. I definitely don't recognise the situations described in these articles. We had a lot of difficulties with our network and we are still plagued by them. For example:

● Three hard drives crashed within one month — we were then reluctant to approach the workstations until we knew what had caused the problems.
● A SCSI-card in one of our file servers was worn out and died very slowly causing us tremendous access problems during the entire period.
● A new version of the OPTI-Net software was installed just before the summer and

led to a system breakdown, which lasted for almost a week. As a result of which we have decided not to install new versions of software during term-time.

● We have also another problem for which we haven't found a solution yet. For a long time it hasn't been possible to access the ABI/INFORM database from almost all the workstations (except the public ones). I can make a search on a single term but performing combined searches is quite impossible. For instance I can retrieve articles about Volvo, but I can't retrieve articles about Volvo and Saab. The system will ruthlessly throw me out and I find myself back in the main menu.

Many of the early problems we had probably arose from:

● The small budget — (we couldn't invest enough in the network from the beginning).
● We were in an early stage of development — at that time there was no experience available.
● We probably expanded our network too much and too fast.

But we also have gained the experience and realise that we underestimated the support a CD ROM network of our size would require. All the problems we have faced, breakdowns, new software versions etc. take a lot of time to solve. We have learned that CD-ROM network management involves at least 20 hours a week. Unfortunately we still can't afford these 20 hours to maintain the network at the library and I believe that this is a common problem shared by many libraries where CD- ROM networks have been installed.

Experience Gained

Implementing a CD-ROM network in a library certainly creates challenges for both the library user and the library itself. The libraries have to deal with increased demands on both library collections,

service, staff etc. The users suddenly get access to a great number of journal articles, have to adopt the new technology and make use of all the facilities provided. Chalmers Library has a large-scale user programme which includes compulsory courses in information retrieval for all undergraduate students as well as postgraduate students. In these courses students are able to try out database searching both online as well as on CD-ROM. As I work with these students I have made some observations regarding their behaviour in connection with the computerized "laboratory sessions". I have noticed that the students prefer to search using the CD-ROM compared to searching online. CD-ROM provides an excellent learning environment compared with the online environment.

Students can take their time to learn and experiment and to refine their search strategies without any pressure. They also prefer the CD-ROM facilities, such as colour screens, windows, help screens etc. to the more old-fashioned online technique. Compared to online, the students can manage to make an acceptable search on their own without asking any questions.

But the most important thing is that I know the students will use the system in the future. I often see them at the public workstations in the library performing CD-ROM database searching, but I must admit that I didn't see them as often — if ever — among the printed indexes. I also know that they will use the CD-ROM in the future when doing their Master-degrees And when I see this, all the networking problems, all the breakdowns, the cancel or not to cancel-discussions, the leasing and the licensing problems completely disappear. Even the most "CD-ROM resistant" librarian on our staff said to me the other day when the system was working again after a long interruption — "Thank God it's working again — What would we do without it?"

And the end users just love it!