# AHC STRATEGIC PLANNING PROCESS

# PHASE II – REPORT ON DEFINING QUESTION NO. 5:

# HOW DO WE EXPLOIT THE TECHNOLOGY OF THE ELECTRONIC AGE?

## Committee No. 5 – Technology Challenge

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## A. Generalities

The approach in this report is to address the technology challenge through the defining questions both as a way of thinking strategically and as a way of organizing those thoughts. There are, however, some strategic technology issues that affect all of the defining questions and these are as follows:

**AHC Digital Development Institute:** We suggest that the institute be formally established to facilitate the maximal use of existing digital tools, and to facilitate the introduction and/or the development of new tools for the advancement of teaching, research and service within the AHC. We suggest that this institute be furnished with the structure, resources and a mandate to accomplish its goals that should include making us a top-ranked research institution, provision of models of healthcare delivery, and assistance in educating the future health care professional of this state. We support a "hub and spokes" model for the institute, with the "hub" being centrally placed and the "spokes" reaching into and calling upon the expertise in the constituent colleges of the AHC.

**Central Steering Group:** There is a need to establish leadership and coordination in the AHC-wide aspects of present technology development and usage. We suggest the creation of an umbrella organization group to steer and oversee these efforts. This new group should include, among others, Health Sciences Computing, Diehl Bio-medical Library, Informatics, and the New Vice President for Education. The AHC, through the Central Steering Group, should pursue an IAIMS (Integrated Advanced Information Management System) initiative to be funded by the National Library of Medicine for both planning and implementation.

**AHC Wide Emphasis:** We wish to reemphasize that applications need to be in an AHC-wide laboratory – not the single responsibility of one school. Geographic Information Systems (G.I.S.) is a case in point. This powerful application has the ability to interrogate data on spatial and temporal bases, with addition of animation. While it impacts primarily on question 1, it has the potential to enhance the AHC response to all of the defining questions. Right now there is a strategic opportunity to work with the State Planning Office because this is the time when they review their systems and they are investing heavily in G.I.S.

**Biomedical Library:** The AHC needs to rethink its relation to and use of the Bio-medical library. The library is the traditional custodian of archived knowledge and access to it. By extension, in the digital age, the Bio-medical library could serve as the portal of entry to the information resources of the AHC. The Bio-medical library could teach informational competency necessary to underwrite student life-long learning and faculty development. And finally the Bio-medical library, in cooperation with Health Sciences Computing, could serve

as a test-bed and demonstration site for the latest digital and multimedia hardware and software.

**Technology vs. Content:** The AHC should make a major commitment to the technology side of this equation. This would require significant investment in infrastructure, and the hiring of AHC professionals to administer and run the technology part. Technology has to be done well and first versions should be high quality.

**Prioritization:** Two complementary approaches can be used. The first is to identify our strengths and use technology to consolidate our positions and enhance them. A second approach is to identify strategic gaps in needs and be the first to create and provide solutions.

**Training and Motivation:** Putting technology in place is one thing, using it to the maximum is another. Training and motivation are essential if investments in technology are to realize maximum benefits. Some of the barriers to maximization of use are psychological which may be overcome by training or motivational programs. Such programs could be offered by the Bio-medical Library, Health Sciences Computing and other cognate units.

## B. – Technology specifics for each of the defining questions:

Question No. 1:  What is our role in the health of Minnesotans- our land grant mandate?

**Technology Response**

**Searchable Database:**

- Technology can help us take the "pulse" of the health of Minnesotans by gathering, archiving and continuously updating the main parameters of health, in a searchable database. G.I.S. is good example of such a database.
- We may be able to partner with other private and public health providers to create the database necessary to determine the health of Minnesotans.
- This would be a large undertaking and should be regarded as an evolving process.
- Part of the database could be configured at the appropriate level to disseminate health-related information to Minnesota residents to assist in patient education, prevention and management of disease. This will assist us in our mandate to reach all demographic sectors and locations within our state.
- Technology can also be configured to deliver health-related services. One example would be Tele-medicine, which can deliver long-range consulting to remote areas.
- It is likely that new information would emerge from the database envisaged. This will be dealt with under the "Research" heading.
- Technology enables us to consider population effects on the healthcare process.

Question No. 2:  How will we be a real player in the health-care delivery process?

**Technology Response**

**The AHC- A Point of Reference:**
We achieve leadership in a non-competitive approach - in which we work with other providers to test and analyze different models for Healthcare delivery. We operate essentially on neutral ground and become a point of reference for other healthcare providers.

**Delivery of a Premium Service:**
*   Technology enables us to gain new efficiencies by a comprehensive medical records system and by encouraging an integrated AHC health care system, with minimal outsourcing.
*   We leverage the things we do really well and then apply technology to what we determine as a priority.
*   We develop our delivery model early and deploy it. We use outcomes assessment (from our database) to optimize our model and our approach.
*   We offer new services to referring physicians and patients through a searchable database.

Question No. 3:  What is our vision for the health-care professionals that we train?

**Technology Response**

**New Course Tools:**
*   Develop a technology-based library of classes/seminars enabling students to proceed at their own pace and pause/review.
*   Make sure we develop a high quality first version.
*   Nursing is farthest along in the use of web course tools. Generalize the Nursing experience across the AHC. S.O.M.-Duluth has experience in this area and has an Educational Development Unit (EEDU) to foster this.

**Distance Learning:**
Distance learning enables us to reach out beyond the walls of the AHC. It is a very strategic decision, which expands the activities of all of the constituent colleges. Rural physicians and mentoring practitioners are more inclined to be involved with the University. It is particularly important in a clinical setting.

**Student Identity:**
*   Health care training tends to focus on the individual patient. Develop training systems in which the student (identity) is embedded in the system.
*   Use technology to develop flexibility in course teaching and course offerings. Develop a common basic science course across colleges, e.g. MD, DDS, Pharm.D. Ph.D. Develop degrees in multiple disciplines by sharing course work across schools e.g. MBA.

- If we succeed in the application of technology and the healthcare provider world is suddenly bigger, does our vision for the professionals we train change?
- Technology implementation is a factor in the recruitment of the brightest and best students. Students have high expectation in the utilization of technology to enhance the learning process.

## Evidence-based Healthcare Training:
Use technology such as G.I.S. to support training in an evidence-based healthcare curriculum.

## The Faculty Experience:
- Use technology to enhance the faculty experience in teaching
- The efficiency and flexibility offered by technology can create faculty time for further research activities.
- Identify outstanding teachers and put technology resources behind them.
- There is a need for faculty training in the use of technology. There may be a psychological barrier in some cases that needs to be surmounted.

## AHC Wide Activities
Technology creates the ability for cross-training (i.e. expert in Biostatistics teaches all AHC students – not just students in his/her own school).
Information systems are common across all professions and the AHC approach is very fragmented. We need examples of databases for I.S. systems currently in place for students to learn on, before they show up for a rotation.


Question No. 4:  How will we achieve top ranking in research performance?

## Technology Response

## Research Competitiveness:
- Technology should improve our competitiveness in health services research. Software will enable us to interrogate our databases, and find structure within them. In this way we can develop a new body of knowledge and we can become an independent reviewer of outcomes in healthcare delivery.
- We can develop new tools in research, such as visualization, anatomical mapping, simulation and model building.
- We can more easily identify what needs to be done and be the first to do it and to do it well. This is so because (as in 1 above) we can find new knowledge by interrogating our databases.

## Research Collaboration:
- Technology can support true data conferencing and better communication between researchers. This in turn can support the development of incubators around research themes, and encourage the advent of the virtual lab. NSF is encouraging the greater use of technology.

- Technology can redress the current patchy approach to data collecting, and help us appreciate our full potential and assets. It can create and manage the databases required for large-scale clinical trials.
- Because we can choose what we want to make available, technology can help us find and continually communicate with new partners in research.

Question No. 5:  How do we exploit the technology of the electronic age?

**Technology Response**

The general approach so far has been that technology is an enabler. However, in some areas, principally in Informatics and perhaps Public Health, it may be considered as knowledge in its own right.

Question No. 6:  How do we develop a culture of service and accountability, in both internal and external relations, with an environment of good communication and consultative decision making?

**Technology Response**

Technology can facilitate the breaking down of barriers between disciplines and assist in the finding of common interests. Well-developed individual web pages can present faculty profiles that encourage team creation and development.  Technology can also assist in the mechanisms of good communication and consultative decision making.