

The Electronic Superhighway - DRAFT

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I believe that we are on the verge of a new Information Technology revolution. In fact I believe it is probably fair to say that though we have had the *technology* revolution, the *information* revolution is about to begin.

I further believe that though this University has been taking the correct decisions to take advantage of this, a strategic element is missing - a situation which should be rectified urgently. A number of key developments have already taken place and since I totally missed their significance until now it seems possible that others may have too, hence this paper.

Four key factors underpin the revolution to come:

- High bandwidth national and international communications networks
- Multimedia navigation and display utilities such as NCSA Mosaic
- Large tracts of electronically available academic and community information
- The expansion of the community which requires and provides such information

The ability to move information around the world is not new. The ease with which it could be done underwent a major improvement in the UK when we were able to speak the IP protocols in use worldwide and it is now very common practice to uplift software, data, academic reviews and papers and so on from off the net. Note that this is a demand-driven activity: Once you know what you want you go and look for it then retrieve it. Finding it is the weak link in this process and the initial location of information is often by word-of-mouth or through postings on news groups.

The first sign of something new were archive browsing tools which made it possible to look for information when the source is unknown. The World Wide Web and with it the NCSA mosaic software package takes this process a step further:

It is a multimedia tool which allows display of text, pictures and graphics.

Pages are created with a very simple markup language which can be learned in minutes and the results displayed immediately.

There is a simple mechanism for planting hyperlinks in Mosaic pages to *any accessible item of data anywhere in the world*.

There are gateways and translation utilities so that documents of a wide variety of standards can be fed in and viewed.

The result is a world-wide linked structure of data pages called the World-Wide Web. It is a crude tool in many ways but its implications are profound, particularly in the way in which it is already being used.

It is easy to use. It is very easy to create material and if there is a need to refer to material elsewhere then it is trivial to plant a hyperlink. In this way one item can build on another: If I want to write WorldWideWeb material about my department but want to include an item on Edinburgh then all I need do is plant a link to the best available account on the Web. If I find a better account later on I change one link to pick up the new one. That account in turn may link onwards to a diary of events for instance. *each of these pieces of Web hypertext will be being independantly developed and improved*. The result is a dynamic information system which will reflect the best available current information and which is being developed by many people in a distributed fashion. There is very little copying or cacheing.

Note the way it works: I develop my own pages. If someone else likes them they will cite them as a hyperlink, if not, not.

The ease of creating information, the visual nature of it and the elimination of the need to rewrite and represent material that is available elsewhere means that as well as the inevitable technical information there is a lot of "community" information on the Web to the extent that people and institutions and even a town (Palo Alto in Silicon Valley) are acquiring a "presence" on the Web. This is significant.

I believe the Web is here to stay and is the harbinger of the next major development in IT. It and its successors will be as significant a development as the appearance of accessible compute power.

I believe that the community at large will rapidly take this up because of its intrinsic friendliness and the ease with which information may be provided and retrieved.

I believe that people and institutions will increasingly come to be judged by the appearance they present to the Web. On an international scale this will attract or deter academic interaction. On a local scale I believe that schools will pick this up quickly and it will be one way which future undergraduates will gain an impression of their possible future Universities by touring sites electronically.

I believe we have the correct building blocks here to put an excellent image of Edinburgh forward on the Web: The Edinfo database has the correct ideas once the dreadful BRS interface can be ditched; We have an electronically aware library, a fast carrier network and a SuperJanet link. We also have people active in multimedia groups.

We do however need to do a number of things:

- The importance of Web developments needs to be formally assessed and our Web activities

put under a strategic umbrella.

- Resources for the Edinfo project need to be assessed in this light and possible changes implemented
- The process of extending high-bandwidth communication to the education community throughout Edinburgh should be pursued vigorously. I understand that there may be discussions between the three Edinburgh Universities and one of the cable companies. I believe this is highly significant, that it should continue and should probably widen to include representatives of Lothian Region Education department and LEARN if it hasn't already.
- The Information Office needs to be brought into the information technology age (something *long* overdue) and made to understand the significance of electronically disseminated information of all kinds. I think there is room for a 'new blood' post there to bring Edinfo and the Information Office together - again, apologies if this has happened already.
- We should continue the process of creating awareness of the Web and its possibilities through seminars and workshops.

Conclusion

The Web may not be a final solution but I believe it represents the shape of things to come. I believe very soon we will be assessed as much by our electronic presence as by any other academic and glossy publications we may produce. If we organise ourselves quickly we will lead the field and present ourselves well in an important theatre. If not we will be left behind.