



Foresight Northern Ireland

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A NORTHERN IRELAND RESPONSE TO
TECHNOLOGY FORESIGHT: PROGRESS
THROUGH PARTNERSHIP

FROM THE SOFTWARE PANEL
OF
INDUSTRIAL RESEARCH AND TECHNOLOGY
UNIT (IRTU)
AND
NORTHERN IRELAND GROWTH CHALLENGE
(NIGC)

SUMMARY REPORT

DECEMBER 1996

athena/users/frank/masterSummary

FOREWORD

This short report is a summary of the full report from the Software Panel. It is important that those involved in actioning the recommendations of this Panel read the full report to gain greater insight into the background of each issue. This represents the views of a group of volunteers from the private and public sectors and from academia. Thanks are due to all members of the Panel for giving their time so readily:

Frank Graham	(Kainos Software Ltd) Chairman
Prof Danny Crookes	(QUB)
Barry Hagan	(BHA)
Prof John Hughes	(UUJ)
Colin Hunter	(NIGC)
George Kernaghan	(Unite Solutions Ltd)
Colin Reid	(Task Software Ltd)
Denis O'Sullivan	(NI Software Industry Federation)
Eugene Treacy	(IRTU)

CONTENTS

1. EXECUTIVE SUMMARY	4
2. INTRODUCTION AND PROCESSES	6
3. BARRIERS TO PROGRESS	8
4. RECOMMENDATIONS	9
5. WAY FORWARD	11
APPENDIX	
Belfast Infocity Consortium	12

1 EXECUTIVE SUMMARY

- 1.1 The Software Panel of a joint IRTU/NIGC initiative selected four areas from the Foresight proposals which it deemed would give the best overall return to Northern Ireland in a 5 to 10 year timeframe:

IT Literacy
Business Incubation
Creating Infobusiness
Distributed Information Management

- 1.2 Although pure and applied research continue to be important in the software sector, the Panel believe that the region will be better served if our sector strives to play a more proactive role in strengthening the activities of other industrial sectors. All the evidence is that no sector can become internationally competitive without a strong IT infrastructure.

- 1.3 Five main proposals are made by the Software Panel and they in turn are prioritised into two major and three minor recommendations summarised as follows.

1.4 MAJOR RECOMMENDATIONS

- 1.4.1 SME's in all sectors should be encouraged to strive to become 'world class' in all relevant areas including their knowledge and use of IT systems. This should be done by DED extending its support for sectoral 'federations' like the Software Industry Federation (SIF). The federations will promote best practice across a wide spectrum of issues including IT, will have regular contact with SIF and will act as a conduit for information on government assistance.
(Action: DED, NIGC, SIF)

- 1.4.2 The Belfast Infocity Consortium project is a model which embodies one of our best hopes for creating new high technology industries. NIGC and SIF should harness market intelligence and promote this as an exemplar for other cities and towns.
(Action: DED, NIGC, SIF, Belfast City Council).

1.5 MINOR RECOMMENDATIONS

- 1.5.1 All students in secondary education should complete a mandatory GCSE or NVQ in 'Use of Information Technology'. A more advanced but optional module should be available to all tertiary education students.
(Action: Department of Education, NI).
- 1.5.2 The efforts of academia, public and private sector bodies should be focused on creating a 'technopole' (a Science and Technology Park with integral incubator units) in the greater Belfast area.
(Action: DED, SIF).
- 1.5.3 The province has already considerable expertise in all the constituent elements of Distributed Information Management. IRTU and SIF should provide the opportunity to 'pool' expertise and collaborate in joint ventures to expand what is already in Northern Ireland, a successful but under-exploited technology.
(Action: IRTU, NIGC, local Universities)

2. INTRODUCTION AND PROCESSES

- 2.1 A Panel of software specialists from the private sector and academia were asked by IRTU/NIGC to consider how Northern Ireland could benefit best over 5 to 10 years from the recommendations made in the voluminous TECHNOLOGY FORESIGHT: Progress Through Partnership reports.
- 2.2 The Panel decided on the following strategy:-
- to use as its initial source of ideas the IT and Electronics section (Book 8) of the Progress Through Partnership reports
 - to select up to five of the many recommendations in this book which the Panel believes will have most relevance to Northern Ireland
 - to investigate and use, where appropriate the work already carried out by equivalent panels in Great Britain
 - to allocate one Panel member to be responsible for each of the selected areas of investigation. This Panel member would ultimately make recommendations and write a report on his subject which would be discussed and edited by the entire Panel.
 - the Panel should meet monthly to monitor progress and that the entire project should be completed within six months.
- 2.3 The Panel acknowledged that given only very limited part time involvement over such a short period, the final report could not go into great detail or indeed develop the recommendations much beyond their initial statement.
- 2.4 The four areas selected by the Panel and the members to whom they were allocated are as follows:-

IT Literacy, Education and Training	- Frank Graham
Business Incubation	- Denis O'Sullivan
Creating Infobusiness	- Barry Hagan
Distributed Information Management	- John Hughes

The four individual reports are found in Appendices A, B, C and D of the Full Software Panel Report.

2.5 As well as individual research and liaison with the GB Panels, the Software Panel joined forces with the Systems and Networks Panel and held a one day 'ITEC Workshop' on 1 November 1996 to which were invited the panel members from the other sectors involved in the IRTU/NIGC initiative - namely Engineering, Food and Drink, Health Technologies, Textiles and Apparel.

The basis of the Workshop was a questionnaire (see Appendix E of the Full Report) which was put to the 36 attendees.

The discussions ensuing from three 'breakout' sessions during this Workshop have, to a large extent, influenced the writers of these reports in making the recommendations which they do.

3. BARRIERS TO PROGRESS

3.1 Although the suggested title of this section was 'Technological Barriers to Progress', we have deliberately dropped the word 'Technological'. We find there is rarely a technological barrier as we do have strong technical skills and technologies are now so accessible and portable.

3.2 The main barriers we found are:-

- an apparent resistance from many Small to Medium Enterprises (SMEs):-
 - to use proven but modern IT systems as part of their everyday existence
 - to aspire to sectoral best practice in terms of quality systems, staff training, research and development.
 - to communicate with local sectoral exemplars for mutual benefit
 - to respond positively to DED agencies which attempt to provide guidance and help in these matters.
- a fragmentation of effort over a number of areas such as bringing IT into the community and the attempts to create Business or Technology Parks.
- an apparent major 'hole' in our basic education system which allows most students at every level to emerge without any significant IT knowledge. This simply is unacceptable for any region in the 21st century.
- a level of communication between the public and private sectors and academia which although probably superior to that of Great Britain could be further improved for the greater benefit of the whole community.

3.3 The majority of businesses in Northern Ireland, which are mainly SME's, do not immediately view ITEC as providing significant competitive advantage. There is a burden of proof on the ITEC sector to demonstrate to other sectors that sustainable business benefits can derive from the early adoption and exploitation of this technology. One of the key opportunities to overcome this barrier is in the creation of INFOBUSINESSES - multi sector information businesses which exploit knowledge, expertise and creativity to address global markets. There are many possibilities including tele-shopping, distance learning, 'edutainment', financial services and healthcare.

3.4 A description of the Belfast Infocity Consortium in the Appendix of this report outlines one initiative which attempts to overcome these barriers.

4 RECOMMENDATIONS

- 4.1 This Summary Report deals only with the two Major Recommendations. Fuller explanations and details on its Minor Recommendations can be found in the Full Report.
- 4.2 The problem of identifying and helping relatively uncompetitive SME's is common to all the DED agencies. There is an invalid perception that grants - particularly those from IRTU, are for esoteric activities largely carried out only by large organisations.

We recommend an alternative, perhaps more radical approach with two new features.

DED should extend the support it provides for sectoral 'federations'. We feel it is likely that uncompetitive SME's are more likely to be accessible to a local sector federation than a government agency. The federations can promote best practice and provide a conduit for information on government assistance (see the recently published booklet 'Guide to Sources of Assistance' from the SIF).

In conjunction with this, DED should define a series of templates, on a sectoral basis of 'the competitive company'. Each template will show desirable characteristics:

- use of relevant IT systems
- commitment to training (IIP accreditation)
- commitment to quality (ISO accreditation)
- commitment to R&D (a percentage of annual turnover)
- commitment to market research
- commitment to world class best practice.

Rather than provide grant assistance on the basis of the current criteria, the value of the grant should be modified on the basis also of a comparison of the company's past performance and future plans with the 'competitive' templates. In a sense this is using 'carrot and stick' rather than just 'carrot' as now. This should encourage SME's to adopt a more internationally competitive profile.

The existence of such a group of sectoral federations would greatly facilitate promotion of best IT practice in those sectors by the SIF.

4.3 For infobusinesses to be stimulated and created requires a combination of basic infrastructure, enabling government sponsored initiatives, demonstrator and pilot projects which clearly illustrate business benefits and competitive advantages, and critical mass. In addition to the initiatives which are already underway and in particular to assist in achieving critical mass the following recommendations are made.

1. The Belfast Infocity Consortium project is a model which deserves support, which should be replicated in other major towns and cities throughout the province, and which should be complemented by a supporting central government project.
2. Market intelligence to assist in identifying and characterising infobusiness opportunities on an ongoing basis should be created and maintained. A suitable channel for the dissemination of this information to interested parties could be the Software Industry Federation.
3. Sectoral based demonstrators and pilots, supported by sectoral trade associations, created to illustrate sustainable business benefits and competitive advantage through the exploitation of ITEC should be initiated. A suitable channel for promoting such an initiative could be the NIGC and the Software Industry Federation

5. WAY FORWARD

- 5.1 As can be observed, the recommendations are greatly varied and will in general require much more planning than this Panel has been able to give thus far.
- 5.2 The Software Sector in Northern Ireland is greatly advantaged by having a Software Industry Federation which makes it relatively easy for DED, NIGC and academic institutions to receive 'buy in' and 'follow through' for any recommendations which require the involvement of the sector. All the recommendations in this report do need to be 'fleshed out' and the central organisation to carry this out in conjunction with the two sponsoring bodies, DED and NIGC is the Software Industry Federation.

APPENDIX A

BELFAST INFOCITY CONSORTIUM

This is a very ambitious initiative by Belfast City Council modelled on similar schemes in the USA and Europe to stimulate economic and social activity by the use of 'telematics' for the benefit of all the citizens of Belfast. The main strategic actions for consideration to achieve this aim is the implementation of a civic information network using modern reliable technologies that enable easy access to services delivered electronically. A far reaching and comprehensive strategic plan has been formulated central to which is the proposed establishment of *Belnet*, an integrated computer communications and information system. It is intended that *Belnet* will support the establishment of 200 access points across the city in government offices, schools and universities, council offices, libraries, museums, enterprise agencies, hospitals, voluntary groups and community halls with the intent of creating critical mass. Specific project areas that will be encouraged and which it is anticipated will create infobusinesses include:-

- multimedia support centre. In particular four service elements are identified namely, localisation, best current practice, counselling and consultancy
- arts, culture and citizens. In addition to virtual art galleries, museums and theatres the stimulation of film making and music is anticipated
- teleworking. Mainly homeworking and customer service projects
- business information network. Targeted at SME's to provide access to ISDN and Internet.
- developing image databases. Geographic Information Systems (GIS) including land and property data, incorporating photographs, plans maps and tourism data.
- electronic village halls. Neighbourhood centres aimed at providing facilities.

This initiative is just getting under way and is working to a five year horizon. While it addresses only Belfast and in that sense is limited in geographic scope there is every likelihood that other larger provincial cities will in due course follow Belfast's lead.