

**The dialogue of universities with their stakeholders :
comparisons between different regions of Europe**

A project of CRE (Association of European Universities),
the European Commission
and ERT (European Roundtable of Industrialists)

Analysis of Case Studies

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List of Regions Participating in the Project

A. PREAMBLE

The Context Of The Project and Its Design

1. CRE, the Association of European universities, mobilises its members to co-operate on issues of importance for them. A major issue preoccupying higher education institutions today is their links with the rest of society, particularly their relationship with stakeholders.

At the same time, governments, business and industry as well as other institutions are expressing new expectations of what a university should offer.

2. CRE, the European Commission and ERT, the European Roundtable of Industrialists, wish to promote dialogue between the university and its social partners in order that the services the university can offer may be better matched to external demand. CRE is further interested in the idea of a responsive university and concerned to encourage its members to become involved in the problems of the society of which they are a part.

The European Commission, in its White Paper 'Towards the Learning Society', emphasises the danger of a gap between the needs of society and the responses of universities. Two of the objectives of that White Paper are about bringing educational institutions and the business sector closer together and combating social exclusion.

3. In a separate project entitled 'Vision 20-10', CRE is exploring university leaders' views of the future. The data from the survey and from this project should converge in a double image presenting the universities' view of themselves in the next century, and the way their external partners view them.

CRE, with UNESCO has also held a conference on 'Agendas for Change : Higher Education in the XXIst Century', which is a case-based exploration of 20 universities' vision of the future in terms of the themes of Teaching and Learning; Preparation for the World of Work; Advancement of Knowledge via Research; and Transmitting Cultural Values in an European Context.

4. For the purposes of the project, the project partners decided to instigate an enquiry at the level of the region. The logic behind this was to say that if higher education institutions could not carry on a meaningful dialogue with their partners immediate to them they had little hope of communicating successfully at national or international level. But it is also recognised that a university may operate on several levels simultaneously. To obtain concrete information on the process, outcome and future of a dialogue between an institution and its external partners, comparing at European level information gathered at regional level seemed a valid approach.

This project aims, therefore, at specifying the needs and expectations of those who use universities : students and their families, other higher education institutions, secondary schools, regional authorities, local firms and chambers of commerce, etc.

5. The project has been launched to prepare the CRE General Assembly, which will take place in Berlin on 26th-29th August 1998. This conference of European universities should identify concrete action proposals of interest to CRE, the European Commission and ERT, concerning the future of higher education in Europe.

The Project Aim

6. The project is examining the experience of universities faced with similar problems in different regions of the continent. On the basis of a restricted but consistent sample, other higher education institutions may be shown cases of innovative good practice enabling the services offered by universities to match specific needs. Examples of sustained and sustainable change are being sought. The social relevance of universities is thus being examined at regional level.

The Project Partners

7. CRE, the European Commission and ERT are represented on the project Steering Committee. The Steering Committee is being advised by an Academic Director for the project - Professor John Davies, Pro Vice Chancellor of Anglia Polytechnic University in the United Kingdom.

A small network of experts - senior university managers : (Professor Marcel Crochet, Rector of University Catholique de Louvain, Professor HÈLÈNE Lamicq, President of Université de Paris XII-Val de Marne, Professor FranÁoise Thys-ClÈment, Pro-Rector of Université Libre de Bruxelles, Ms. Mollie Temple, Pro Vice Chancellor of University of Sunderland) - is overseeing the project development.

The Project Activities

8. In June 1997, the Steering Committee selected the regions that would participate in the project and the universities that would organise regional discussions. A range of key questions that should be treated in all regions was agreed in order to ensure the project's comparative value.
9. A meeting at which each region was represented by a university delegate, as well as an external partner, was convened in September 1997 in Brussels. This meeting discussed the guidelines for discussion in the regions.
10. Between October and December 1997, the university representatives organised one or more meetings necessary to provide the best possible response to the thematic issues chosen for consideration. Reports were then drafted about the results of these conversations.
11. Using this material, the Academic Director prepared a paper for the Steering Committee to examine at a meeting organised on 12th-13th February 1998.

The analysis has since been revised in the light of this, and a second plenary meeting provided an opportunity to test some of its assumptions as well as to draft some preliminary conclusions. It should be noted that the process is a summative one, in the sense that information will be added or verified until June 1998, at which point the analysis will form part of the documentation for the CRE General Assembly, and even afterwards until publication of the project findings at the end of 1998.

12. In Berlin in August 1998, the CRE Assembly will examine the public role of the university, contrasting its self-image as defined in the Vision 20-10 survey with the impression of it held by its external partners.

The Project Methodology

13. The focal point of the project is the dialogue between the university and its social partners in a regional context. However, it is apparent that different types of regions within Europe may be selected for this purpose. Those selected by the Steering Committee are :
 - ï regions of economic revival
 - ï regions characterised by economic concentration and high population density
 - ï outlying regions or those on the periphery.

14. For these three types of region, five to seven universities have developed a dialogue indicating where higher education institutions stand in relation to their various stakeholders, to other educational providers in the region, to the community and economic needs of the areas, and to Europe itself.

But, in some cases, universities have positioned themselves in more than one type of region and for that reason, the framework should be interpreted as a flexible one. As will also be indicated, factors other than regional characteristics will have determined the nature of regional strategies and relationships.

Expected Results

15. This comparative analysis should point to the priorities for change in the development of universities in Europe. It should lead to longer-term support strategies for universities, from the viewpoint of the project partners.

The Berlin General Assembly will thus receive a working document with the project results and it is intended that the discussion in Berlin should use the experience gained by the project participants and enrich the basic text afterwards. A final meeting of the Steering Committee will be held in November 1998.

The project is thus very much an action project, concerned not only with adding to the store of knowledge on institutional relationships with society in various domains, but also creating (in some cases) or giving an impetus to (in other cases) the dynamic of co-operation in particular settings.

In this way, substance will be given to the idea shared by the CRE, the European Commission and ERT that European universities should be mobilised to respond to one of the key questions for the future of our society - the interaction between those responsible for the mainstream education and training of its citizens, and their partners who provide the same citizens with employment and support for subsequent lifelong education.

B. REGIONAL CHARACTERISTICS, PROFILE OF PARTNERSHIPS AND THE EVOLUTION OF INSTITUTIONAL MISSION

16. The purpose of this section is to place the universities within their settings, and to examine the relationship between these settings (geographic, social, economic, political and historical) and the ways in which universities have conceived their roles with regional partners. For the sake of convenience at this stage, the universities will be considered in regional categories : peripheral regions, regions of concentration, and regions of economic revival, though it is fully acknowledged that these distinctions are not at all watertight or exclusive. For each broad category, we shall consider the evidence in terms of regional characteristics; the nature of regional partnerships; and evolving mission.

At the outset, it is apparent that at the time of this study, universities have different types of relationship with their partners. Figure 1 indicates an initial attempt to conceptualise their relationships, on two dimensions : the degree of formalisation of the relationships; and the spectrum of co-operation through to competition. It should be noted that

16.1 different cases enter the project at different points, which poses issues about the dynamics of the transformation process to which we shall later return, having considered the evidence.

16.2 some, of course, will have been set up with a specific regional function : others not. There will also be different waves of mutual expectations, which may well create tensions; alternations of love-hate relationships; and movements up and down and across the matrix as time goes by.

16.3 the client-provider relationships is complex and pluralist, and a particular university may have a variety of positions on the matrix with each of various partners. This may be directly influenced by the financial clout of the partner concerned.

Having said this, let us now examine the evidence.

Figure 1

	COMPERSITIVE	AMBIVALENT	CO-OPERATIVE
FORMAL RELATIONSHIPS	A	C	E
INFORMAL/ORGANIC RELATIONSHIPS	B	D	F

Universities In Peripheral Regions : Regional Characteristics

17. Whilst the common feature of these university clusters is their location in a relatively distant part of a country or the continent of Europe, there are both similarities and significant differences when further analysis takes place.

- 17.1 some relate to a fairly well defined region, with a recognisable traditional identity, and relatively stable governmental and organisational structures. This would be true of Cork, Catania, Tromso and to a lesser extent, Patras, but not of Minho, which has something of a definitional problem in this respect, with overlapping administrative, cultural and historical boundaries. The image, identity and cohesion of the region thus becomes an issue of its development. For some clusters, the challenge is a reaffirmation of the positive elements in identity, and a systematic attempt to build on this. For others, the challenge is to define an image of substance, and sell it in national and international circles.
- 17.2 the peripheral regions exhibit differences in population focus and disposition and internal variations in economic profile. Some, like Cork, Patras and Tromso have one major centre of population, and a widely distributed population in agricultural settings. Others, like Catania and Minho, are based on several nuclei, some of which have HEIs, and this fact may pose a problem of integration and cohesion of effort, given the rivalry between municipals or institutions.
- 17.3 some regions seem to have determined their role in national or international society (especially in Europe) for this foreseeable future (Aalborg, Kuopio, Tromso), whilst others confess this as being a problem (Patras). This ambiguity would clearly seem to pose both a difficulty in terms of regional evolution, and a challenge for the university to be proactive in helping to determine the role of the region in the 21st century, especially in the context of globalisation (Kuopio).
- 17.4 There are certainly some economic similarities to be observed. The historical reliance on agriculture and related food processing (Cork, Catania, Patras, Minho), fishing (Aalborg, Cork, Tromso), metal-ore extraction (Kuopio, Tromso, UmeÅ), or heavy industry (Cork, Patras), is giving way to tourism (Patras, Cork, Catania), and extensive SME development (common), hi-tech, IT based development and electronics, and a formidable expansion of the service sector, especially related to public infrastructure (Kuopio, Aalborg).
- 17.5 however, within this frame, we may also discern areas of relative economic stagnation, high unemployment (Kuopio, Aalborg) and low morale (Patras, Catania, Minho) and vibrant growth and high employment (Cork, Tromso). Where manufacturing industry is developing promisingly, (Catania, Cork) a high proportion of this may be foreign-owned (Cork 35%) which raises issues about the willingness of such companies to use regional universities compared with those in their home base, for R and D services especially. There may also be concerns about profit repatriation. As EU develops this may be a long playing controversy, especially given existing designations as regional economic development areas (Kuopio, Aalborg).
- 17.6 in some regions, the public service sector (administration, health, education) is clearly dominant (Kuopio, UmeÅ), which whilst going a long way to stabilise employment, does not contribute greatly to enterprise development and thence, economic growth.
- 17.7 some peripheral regions are confident about their growth potential in terms of resources (Tromso in respect of fish, oil) or strategic location for exporting and transport (Patras). Other regions' statements on growth potential are more unsubstantiated, and concern is widely evident over the drawing power of capital

cities for inward overseas investment (Dublin in the case of Cork, and Athens in the case of Patras).

- 17.8 as far as age structure is concerned, some are predicting the consequences of a falling birth-rate (Cork), but this is generally of lesser significance than a wide variation of satisfaction with the levels of education and participation in post-compulsory education. Minho, Patras and Catania have especial concerns in this area, and when linked to low per capita incomes and high unemployment, it assumes added importance. Net population migration may also be observed (Kuopio) vis a vis national centres, particularly evident in rural areas.
18. It is thus apparent that the regional character is potentially a major factor in university cluster development, in that it places some difficult parameters on opportunity and raises formidable questions as to the appropriate role of the university in contributing to the definition of the regional identity, and stimulating regional development in ways we shall later analyse in detail.

Universities In Peripheral Regions : The Nature Of Partnerships

19. The character of this project requires university clusters to identify a range of organisational partners with whom to engage in regional development. As far as peripheral region universities are concerned, there is a similarity in the range of organisations quoted for this purpose.
 - 19.1 local government partners prefectures, city and county governments, together with single purpose public utility organisations (harbour authorities, airports, hospitals etc.). All will have statutory authority, but some may have scope for independent action in enterprise development on which universities may capitalise (UmeÅ).
 - 19.2 regional authorities - which may be elected political authorities (Tromso) or appointed administrative agencies to carry out central government functions in terms of regional co-ordination (Patras) or attempt regional development (Cork, Minho). In the latter case, there may well be a role to engage in EU lobbying. In the former case, there is the question of whether the role is purely consultative and whether it has a budget to realise its objectives.
 - 19.3 regional economic development agencies of one type or another. Minho has four collaborating bodies responsible for particular sub-regions - ADR Cavado, ADR Ave, AMAVE, PROAVE, Cork has the Irish Industrial Development Authority, Forbairt (with its associated Cork Business Innovation Centre), Cork-Kerry Tourism.
 - 19.4 variants of Chambers of Commerce (Cork, Tromso) or federations of industry (Patras Federation of Greek Industry) and parallel trade union groupings (L O Nordjylland at Aalborg).
 - 19.5 co-operative instrumental organisations for specific developments (Patras : HOSME - support organisation for SMEís; Aalborg and Tromsoís Science Parks; Aalborgís Contact Bodies).
 - 19.6 banks and finance houses (Aalborg, Tromso, Cork) which may be very proactive in venture capital, quality accountability, ethical accountability (Aalborg and Spar Nord).
 - 19.7 other educational organisations. Tromso has a Board of Higher Education with seven state college affiliates; Cork has various institutes of technology under the academic jurisdiction of the National Council for Academic Awards. There may well be a competitive dimension to this as UmeÅ demonstrates, in the case of LuleÅ.
20. The mobilisation of these bodies for this project has clearly posed different challenges for the universities at the heart of the clusters. All clusters have an existing relationship which of course, pre-dates the project, and different pre-conditions may be observed, which fit into a matrix such as indicated in Figure 1. How particular clusters organise themselves - and plan themselves - will be an ongoing thread in the discussion.

Those which commenced the project in Boxes E/F clearly found it much easier to move the process forward (e.g. Aalborg, Tromso, Cork, Minho) than those in other boxes, because commitments and infrastructure already existed. Catania found it difficult to move beyond an exploratory meeting.
21. Emerging from this analysis are some important points

- 21.1 for universities in peripheral regions, important factors in stimulating co-operation between universities and stakeholders would be the realisation of the threat of the Euro, the importance of high productivity in a wide European market, the potential of strong regional co-operation in generating additional extra-regional income; the necessity to these ends of generating a managerial and enterprise culture within the region. These points seem to be widely accepted in the case study universities.
- 21.2 the historic privileged position of universities is unstable. They no longer have a monopoly of knowledge. Other providers of higher education within and outside the region (Luleå in the case of Umeå) or distance learning universities are quite capable of penetrating this stronghold. This at the very least provides choice. Multi-national companies have no obligation to use peripheral region universities for their education, research or consultancy. Other HEIs (Technical or state colleges in Tromsø, Cork; polytechnics or training institutes in Minho) tend to be innately entrepreneurial and opportunistic and interested in moving into graduate and research level work beyond the first degree. This 'academic drift' raises questions about the so-called binary line, and, long term, serious concerns about the regional capacity for technician training. Some cases (Patras) report that stakeholders feel competition would be good for the university, to stir it up!
- 21.3 the overall picture is one of overlapping networks and in some regions, organisational self-interest and protection of 'turf', which is not a favourable pre-condition for co-operation in regional development.
- 21.4 certainly, there is a continuing thread of criticism and self-criticism of universities perceived as being passive, inward looking, and slow to be proactive and to recognise and follow up opportunities. This inherent cultural characteristic of universities should not disguise other phenomena. Some university liaison organisations (Industry Liaison Office at Cork) are perceived as requiring a new orientation and greater support. Reward systems in universities are not really designed for enterprise activities. Applied research is often not engaged with regional stakeholder interests. Regional knowledge of university expertise is said to be weak.
22. On the positive side, there appears a general agreement that at individual level, relationships between particular academics and regional interests are generally good, and at least, at senior level, there is consensus that a strong responsive, internationally oriented university with a comprehensive disciplinary coverage is essential for regional advancement.

Universities In Peripheral Regions : The Evolving Mission

23. In the light of the above, it is not at all surprising that the case university clusters see the historical mission of universities to focus on teaching and research as being in need of substantial extension into professional and vocational education; contract and open continuing and co-operative education; the encouragement of student and worker mobility; social leadership; and economic and commercial development on a wide range of regional fronts.
24. Given the nature of the peripheral region and its university/HE configurations, the following points emerge

- 24.1 there seems to be objectively a clear need for a thoroughly comprehensive subject coverage to play a constructive role in the region, i.e. a full scale university, (Tromso for instance is lacking in a medical school and orthodontics; IT needs expansion in most institutions; several see tourism as an essential addition to the portfolio). This either calls for closer co-operation between existing institutions within a region or substantial expansion. However, Kuopio has chosen to focus on a defined range of so-called 'products', principally in health and environmental sciences to a high quality.
- 24.2 given the levels of education and access in some peripheral regions, mass higher education to raise vocational skills, to attend to market demands, and to facilitate equal opportunities is apparently inevitable, and certainly desirable. However, this would certainly raise issues of quality assurance, and knock-on effects on research.
- 24.3 the expectation that the university should act as a factor in regional competitiveness; an engine of regional development, and as an agent of defining the role and nature of the region places a huge obligation and weight on universities. Tromso, Aalborg and Kuopio were founded with this as a central element in the mission, so the need for regional political support and societal verification becomes apparent. In many cases, universities will have to change themselves before they can change the region, and at the root of this is the shift, at least in part, to an entrepreneurial culture and mode of operation, a point to which we shall return in relation to specifics, in terms of attitude, motivation, processes, instruments, structure and of course, the perceived relevance of the education and research..
- 24.4 a regional role inevitably implies an international role and EU is seen as a major stimulus to this particular element of mission evolution, given various EU educational, regional and industry directives and funding incentives, together with expanding opportunities for business (e.g. Tromso - in Russia).
- 24.5 such broadening of the scope of university activity in peripheral regions can only lead to differentiated missions, the result of the HEI configuration in the region, and different niche opportunities. Concern is evident in several locations about the restrictive role of central government in preventing this evolution of a distinctive profile (Tromso and Catania). Amongst the inhibiting factors here are rigid budgetary rules and formulae; restrictive arrangements regarding the development of new fields of study or university companies; personnel procedures and policies. The inference is clear : if universities are to realise their full potential as agents of regional development, they need appropriate grants of autonomy so to do.
25. In all the above, it can be readily appreciated that there are a series of on-going tensions, for example, between mass higher education and quality agendas; between the reflective and instrumental role of universities; and between the regional agendas of economic improvement and the more cosmic agendas of the Universitas. How the university in the peripheral regional responds, we shall examine in due course.

Universities In Regions Of Concentration : Regional Characteristics

26. The regions of concentration encompassed in the case studies are drawn from some of the major concentrations in Europe which have built up over centuries, based on immensely influential strategic locations on the various key cross-roads of the Continent - the Piedmont in Italy, the Rhine delta, Brussels, Barcelona and Graz.

27. The following central factors seem to be important here
- 27.1 each of the regions has a clear identity based on location, culture and tradition, and a density of population, where one million plus are heavily concentrated on a large focal city and its extensive suburbia and business districts, and, in the case of Piedmont, with eight provinces focusing on the centre. They are commonly subject to government by a relatively strong regional authority, with extensive control of planning, transportation etc. Brussels is more complicated, since it is also subject to some controls from Flemish and Walloon authorities. The Brussels Region has its specific authorities which are not compromised. The infrastructure for universities to play a regional role is therefore largely in place : whether it is fully utilised is another point.
- 27.2 given the locations, strong international influences are typical. This is best demonstrated in Brussels where 30% of the population is foreign, and the presence of the EU organisation is dominant. This places an expectation on universities to act as international players. The port and airport dimension of this is especially strong in Rotterdam and Barcelona.
- Graz situated in Styria (S.E. Austria), borders on the former communist countries in Central Europe, which, in future, is likely to play an important role in the extension of the European union to the east. This is likely through bilateral contracts and partnerships especially through EC Tempus project.
- 27.3 economically, from an original base of manufacturing and trade, the regions tend to be quite diversified. Service industries broadly defined, constitute 85% of the Brussels region, and only c. 14% heavy industry, and similar patterns can be observed elsewhere. Rotterdam suffers, on the contrary, from a heavy dependence on chemicals, metals and transport, all of which expect decline. Barcelona is typified by 54% service industry, and 37% industry, with textiles in decline. SMEs predominate - they constitute 95% of all enterprises in Brussels, and 75% of Turin, though the latter have multi-national companies such as Fiat.
- This SME configuration produces challenges for universities in terms of preparation for the labour market, and providing R and D/training services. Styria also demonstrates a replacement of traditional steel and heavy industry by a whole new generation of hi-tech industries, via the normal phase of heavy recession and associated social problems, and leading to a position where Styria is now one of the most successful economic areas in Austria.
- 27.4 the employment picture is variable. The unemployment figure in Barcelona is 14%. High unemployment is experienced in Brussels (23.6%) and Rotterdam (15%) and 4% of the Brussels population benefit from minimex, a social security floor, which is among the highest in Belgium. The growth potential overall is quite extensive for the Brussels area as a whole if suburbs are included. However, there is the high land costs of the metropolis and the consequent drift of small industry to low cost areas.
- 27.5 the educational levels are reported as being below national average, which poses strategic issues both for schools and universities.

Universities In Regions Of Concentration : The Nature of Partnerships

28. The institutions in this category have little difficulty in identifying a wide range of actual and potential partners in the task of regional development, and, as in other categories, there are similarities in the types of organisations quoted.
- 28.1 as far as governmental agencies are concerned, Turin quotes the Municipality of Torino as its principal partner, with less significant roles being played by more distant provinces in the Piedmont, and the Piedmont Regional Council. The Brussels situation is more complex. The Brussels Capital Regional government is the key player for economic development, with a Cabinet minister responsible for scientific research and energy, a Brussels Regional Development Agency (BRDA) and a Brussels Regional Investment Agency (BRIA). The Flemish dimension is principally reflected since Flemish educational institutions are under the authority of the linguistic communities, giving rise to FWO (Fund for Scientific Research in the Flemish Community) and IWT (Flemish Institute for Industrial Scientific and Technological Research). The Federal Government also has a Division of Competitiveness in the Ministry of Economy. Erasmus quotes the Municipality of Rotterdam as the principal partner together with various satellite municipalities and the national capital of the Hague. The above have expectations of universities we shall later consider. Barcelona has a series of collaborating local governments within the Metropolitan Area of Barcelona with a long history of purposeful collaboration (e.g. 1992 Olympic Games, Universal Forum of Cultures 2004) and a 1997 Agreement has been activated by a wide variety of players on the economic development of Barcelona.
- 28.2 interfaces with the business sector are many and varied e.g. Unione Industrial di Torino (employees' association), Federation of Brussels Companies, Chambers of Commerce (Brussels, Belgian Federation, Turin, Rotterdam, Barcelona) federation of port employees (SV2 - Rotterdam); Foment del Treball de Barcelona, Confederacio Empresarial de Terrassa i Comarca (Barcelona); Federation of Austrian Industries in Styria.
- 28.3 hospitals (e.g. VUB's Academic Hospital).
- 28.4 interface research organisations are a particular feature of this type of region, and abound. Turin has CORFUI (Association for the promotion of research between universities and enterprises); IRES (Economic Social Research Institute for the Piedmont Region). Of especial note in Brussels is Technopol Brussels which is profiled as an intermediary actor between the Brussels universities and industry, and has an initiative covering 8,300 enterprises in 4 R and D areas - Health, Agriculture and Food, Communication and the Precision Industries, as well as being the centre-point of the EU funded Brussels Innovation Relay Centre. In addition, the Brussels region has Science parks, 25 industrial parks and 350 co-ordination centres. In Rotterdam, we have the so-called 'Sustainability Club', and a huge variety of similar connections at university and faculty level (see later). Barcelona has a Science Park, stimulated initially by the University of Barcelona, which has seen the integration of R and D efforts of various companies.
- 28.5 alumni organisations are beginning to play an influencing role in cementing links between universities and ex students' companies.
- 28.6 this type of region also exhibits a proliferation of joint training organisations between universities, business and industry. Turin has the International Training

Centre of ILO; CORIPE (Association for permanent economic research and training); IPSET (International Role for the Support of Education and Training). Barcelona has the Fons per a la Formacio Continuada or Forum (Continuing Education Fund).

- 28.7 permeating all the above, is the question of relationships with other HEIs in the region. Regions of concentration tend to be well endowed with such institutions. Brussels has the Vrije Universiteit Brussels (VUB), Université Libre de Bruxelles (ULB), (its Francophone counterpart); Catholic University of Louvain (UCL), Vesalius College and Erasmus Hogeschool (EHS). Turin has the University of Torino and the Politecnico. The above list is certainly not exhaustive. Within Rotterdam, there are 5 professional high schools in addition to Erasmus University, and nearly Delft Technical University. UPC Barcelona cites not only the public university as players, but also a stream of activities provided by companies and utilities themselves.
- 28.8 The operating arrangements between HEIs in concentrated regions is an interesting question. There is considerable institutional differentiation in terms of mission, tradition, size and scope. Much networking and framework agreement exists in areas of training and research, and co-operation is generally at a good level. However, competitive positions can nonetheless be detected, which is perhaps inevitable in such a large and volatile market - and this includes those between universities and enterprises.
29. As far as the general pattern of university-industry-stakeholder links are concerned, the following points emerge
- 29.1 whilst there is abundant evidence of multiple interactions between universities and their partners, there seems to be a strong case throughout for more formalised, systematic and structured relationships, moving beyond individual co-operations and informal understandings to common policy frameworks in, for instance, IT, patent licensing and intellectual property. The Erasmus case distinguishes between what is appropriate for long term relations at faculty level, and what is necessary at top strategic level in university and external partner organisations. The Rotterdam permanent Strategy and Monitoring Groups are perhaps the most sophisticated demonstration, with ten strategic priority focus areas for interaction. The 197 Barcelona agreement is of similar potential.
- 29.2 universities are generally well perceived in terms of responsiveness and quality of work, though a recent survey by UPC Barcelona identifies, within a broad frame of high satisfaction, concerns over awareness; knowledge and trust; flows of information; deadlines; limited technological resource, and certain bureaucratic tendencies on the part of UPC. Equally, firms are criticised for lack of maturity and a speculative, rather than investment culture. Younger universities (e.g. VUB) or ones with a more entrepreneurial culture (Politecnico di Torino) are perceived to be less bureaucratic.
- 29.3 universities' engagement with the various instrumental organisations of regional economic development is varied, and more structure can be perceived in the operation of phenomena like science parks (Barcelona, Brussels).

- 29.4 it is an open question whether the introduction of more structure into a fluid situation would create undue bureaucracy and stifle creativity and synergy. Clearly more structured co-operation also requires money.
- 29.5 the community stakes in the universities themselves are not especially pronounced. Governing body structures do not have widespread external representation, which would seem to be a useful avenue of exploration. This could be even more valuable at faculty/institute level at which specific activities could be properly supported and legitimised.

Universities in Regions of Concentration : Evolving Mission

- 30. There is much more evidence in these universities of an articulated mission which goes way beyond the traditional statements of excellence in teaching and research, which is no doubt attributable to both the numbers of universities in these regions, and also to the volatility of the regions, and the range of opportunities and synergies available.
- 31. Differentiation of mission is thus a matter of fact. Elements of this would be
 - 31.1 the university as generator of knowledge; transferer of knowledge and applier of knowledge (Rotterdam).
 - 31.2 the university as a provider of services within this definition : most agreements with societal partners fall into this category (research, training). The aim of universities in this category would seem to be as 'the preferred partner' (Rotterdam). UPC Barcelona sees itself as the leading economic and social catalyst.
 - 31.3 the university as a catalyst for, for example, young entrepreneurs; for innovation in the R and D domain; for applied research, and job creation in the case of Barcelona.
 - 31.4 the university as a contributor to the public good and growth especially evident in contributions to initiatives to improve the regional economic or cultural situation, via policy research and economic research. In the Brussels case, this emerges in terms of strengthening the bond of Brussels to the Flemish region, the improvement of the positive aspects of its location, and the generation of consensus between the linguistic communities. The engagement of EU in regional economic development is seen as particularly significant in Barcelona.
 - 31.5 big regions at various European cross-roads are destined to play a significant international role, which may be trans-Alpine (in the case of Turin), may involve a mission with developing countries, and, of course, will clearly involve the normal range of EU exchanges for student mobility and R and D. However, it is not precisely clear whether this is actually different in the different types of region : it may be in scale, but not in nature.

Some concern is expressed by UPC Barcelona at the high level of expectations on the university arising from this broad mission, and the real inevitability that UPC becomes almost a holding company for its various enterprises.

- 32. The question of institutional autonomy is also relevant here, since quick responses to regional interests require the ability to set up new programmes, new lines of research, and conceivably to do things in creative and unconventional ways. The manifestations of this include the following

- 32.1 Italian universities (Torino) clearly need considerably more freedom to respond to regional initiatives in terms of diversifying programmes; introducing Diplomas as a staging point in a degree; specialised doctorates; taught Masters; innovative teacher training; shorter degree courses etc., without reference to Ministry. The recent Italian legislation is being tested in this regard.
- 32.2 Brussels (VUB) whilst technically autonomous, nonetheless has to be constrained by the Flemish government's policy on education and university education in particular, and the Brussels Region in terms of regional matters (economic and research policy).
- 32.3 Rotterdam records the inherent internal tensions evident between academic freedom and the pursuit of knowledge; its responsibilities as a provider of regional services; and the extent to which external influences are welcome.
- 32.4 Barcelona (UPC) indicates considerable autonomy, partly conditioned by the fact that 79% of funding is from the state. A recent 4 year contract programme linked to specific objectives with penalty clauses is an interesting new development.
- 32.5 Austrian universities have received substantial degrees of autonomy as a result of the New University Law 1993, which technically provides considerable flexibility for universities to act entrepreneurially. However, a long tradition of dependency and compliance has created inward looking and passive institutional cultures, which require considerable transformation.

Universities In Regions Of Economic Revival : Regional Characteristics

- 33. These may broadly be defined as regions which have, for various reasons, fallen upon hard economic times after a long period of prosperity, and are engaged in the process of economic turnaround. It may also be, of course, that there are rather more economically robust regions close by (e.g. Lyon in juxtaposition to St. Etienne). Within this broad framework, several critical issues may be distinguished.
 - 33.1 of the 'regions' selected for the survey, they vary in the robustness of the term 'region'. Brno, for instance, is the centre of the region of South Moravia (2.1 million) which is of long cultural significance, but was formally abolished as a governmental region, even though socio-economically, it functions as one. The Szeged region defined in operational terms by the Jozsef Attila University as three countries with a population of 1.3 million, is a natural unit of the South Hungarian plain, but not a governmental entity. The North East of England is certainly a recognisable cultural region, which has had a succession of central government regional offices of administration, but no regional government, as such.
 - 33.2 economically, there are certainly similarities, based on the structural decline of old established traditional industry - agriculture, steel and coal, shipbuilding (North East and Rostock), manufacturing, (especially machine tools), textiles, heavy electricals etc. This has been associated with change in ownership from public utilities, corporations or heavy subsidy, to a free market economy (Katowice, Rostock, Brno, Szeged). The combination of the two factors has clearly been traumatic with high levels of structural employment, (Newcastle 9.4%, Rostock 25%, Szeged 9.15%, Katowice 6%) (especially amongst women) company closures (Rostock 50%) and savage falls in investment in other industries, (textiles, ships, machine tools) and

initially slow investment in new industry (cars, chemicals, transport, telecommunications), which however, is now accelerating. Where this is evident, a new hierarchic structure of companies is developing with a major producer and various subsidiary suppliers. This produces interesting consequences for universities eager to do business. In Central Europe, of course, this was associated with the communist downfall, and in parts of Western Europe, with the rise of monetarism. It may also be added that pollution poses a major hazard in the Central European regions.

- 33.3 such structural change has resulted in a number of phenomena. In Central Europe, as the Jan Masaryk case demonstrates, privatisation, small partnerships, SMEs, and moonlighting (holding two plus jobs at a time), joint ownerships have become prevalent. Foreign investment in new ventures has had some success, when a range of conditions have been right (price of land, skilled labour force, local training provision, tax incentives, state subsidies etc.) e.g. French investment in Hungary, Japanese investment in North East (which now constitutes 20% of gross value), widespread use of EU Regional Funds. Western European investment in cars, chemicals, construction and food industries in Katowice. Thus, new growth areas are apparent, certainly in telecommunications, energy, transport, chemicals, and the service sector, especially health, education, finance, and tourism, and in the case of Rostock, food processing. The problem with foreign investment, of course, is its sustainability, as the current economic crisis in South East Asia demonstrates, in relation to uncertainty on new plant development. Similarly, the changes in regional status vis a vis Objective 1, 2 and 5B funds from the European Structural Fund can also have severe consequences.
- 33.4 the large proportion of smaller companies developing however, often display the capital reserves, and little capacity for R and D. This contrasts with the greater potential for the university of hi-tech companies, and technology clusters (Rostock).
- 33.5 given the age structure of the population in these areas, emerging international and national policies on equal opportunities and access, and the need for new skills in the labour force, we see widespread evidence of increased participation in post compulsory education e.g. the Szeged region plans a 22% - 30% increase in 1995-2000, and over the last 8 years, North East England institutions have witnessed a 40% rise in enrolments. The problem has been that public funds have not followed this expansion, raising questions about quality, and certainly contributing to an expansion of provision by privateers, in growth areas like business management and IT, which undoubtedly makes higher education provision much more competitive.
- 33.6 the universities in post-communist countries tend to have inherited something of a gap between the university culture and the populist culture (elitist v. populist, university v. business, theory v. practice etc.), and the challenge posed by the changed environment encompasses a number of dimensions
- i overcoming the tendency of university research to cut itself off from the outside world for political reasons.
 - i changing the emphasis of research to a better balance between basic and applied research.
 - i stimulating the interest of regional interests to look on the university in terms of its developmental assistance potential rather than in terms of ideological correctness.

These challenges, well described by Brno, are further reflected in mission imperatives described below.

- 33.7 all the above raises questions of how HEIs recognise, interpret and respond to both the issues and the opportunities.

Universities In Regions Of Economic Revival : The Nature Of Partnerships

34. The process of mobilising regional interest in this project by case study institutions has yielded some variable, but significant results which often varies with the historical traditions of co-operation, and the depth and richness thereof. In Newcastle and Rostock, for instance, this is long-lasting. In other cases, less so.
- 34.1 the usual range of prospective regional partners has been identified in most cases - other HEIs, municipal and state government, public services, the media, enterprises, chambers of commerce, and economic development organs (such as the Northern Development Corporation in Newcastle, the Upper Silseia Regional Development Agency in Katowice). However, in terms of actual involvement in questionnaire completion or participation in conferences, the picture varies sharply - which presumably reflects different perceptions by the stakeholders as to the relevance and value of a full regional dialogue, or indeed as to the potential of university-stakeholder action in regional development. The main non-participants in Brno for instance were economic interests and representations of legal and political organs, and in Szeged, the chief participants were chambers of commerce and other HEIs. Partial involvement would not seem to augur very well for sustained co-operative regional development on a very broad front.
- 34.2 some interesting configurations are identified in terms of the HE sector. Brno, for example, describes itself as a 'student city' with 6 university level institutions (Jan Masaryk and five specialised academies), which have been enhancing their mutual co-operation since 1989 on a faculty-faculty basis, especially in praxis-based internships; contribution of lecture specialisations; postgraduate doctoral studies; public events; and technical areas like patenting. However, very worthwhile though this is, it does not seem clear how it contributes so far to stakeholder participation or to interdisciplinary effort in teaching and research. Competition is likely to increase at the level of bachelors' degrees in the near future.
- 34.3 Szeged represents another configuration, where there is significant progress in integration via the Szeged Universitas Union, which is expected to evolve into a city multi-faculty university of the five principal colleges (Jozsef Attila - the multi-faculty university, - plus four specialised academies and three associates). The reinforcement to this offered by a parallel county regional development concept and project is potentially very valuable. The 12 Schools of higher education in Silesia seem less likely to evolve in this way at present, though numerous bilateral co-operations at faculty level are evident, which may be built on. The same tendency is evident in Rostock.
- 34.4 the North East of England experience of five more or less comprehensive large universities offers another model of horizontal co-operation - albeit within a highly competitive environment - rather than progressive integration. St. Etienne has 11 higher education institutions in its region, both private and public. A contrast between the North East and Central Europe and St. Etienne appears to be that the

regional stakeholders in the former seem to prefer to deal with each university separately rather than as a consortium. In St. Etienne, on the other hand, a specially formally created structure - the St. Etienne University Complex (PUSE) - has been set up to

- ï highlight the visibility of the collective interests of partners.
- ï enhance the value of jointly developed activities.
- ï build synergy.
- ï speak with one voice on higher education development.

This seems a very good model for this type of region.

St. Etienne also took the lead in forming under Erasmus a European network of 20 universities in mining regions, intended to co-ordinate joint activities.

34.5 the role of the Chambers of Commerce or Trade and Industry and Business Forums is worth commenting on, since generally their roles are extremely positive in brokering system change and regional co-operation by introducing members to the market; mapping the demand for medium and long term needs for specialists in the economy; helping universities establish their new education, training and postgraduate structures; consulting on and providing training themselves; and by facilitating distance education. Their activities in the consolidation of scientific research and its practical application are also evident in mediation between research centres and economic organisations, maximising access to regional data bases etc. In Katowice we see the growing networks of regional and local interests through the Upper Silesian Regional Development Agency; and ditto for Enterprise Restructuring, Construction Agency, and Conservation of Energy Agency. In short, creative co-operation is a mutual expectation. It is obviously beneficial if one Chamber of Commerce covers an entire region (Newcastle).

34.6 as far as mutual expectations are concerned, to a certain extent, these will be conditioned by the sophistication of the system in question. Thus, for instance, in the North East of England, we find criticisms of universities on grounds such as inter-university competition being a barrier to stakeholder engagement; academics alleged to be out of touch with reality; the weakly developed customer-client role relationship; the inability of academics to appreciate user end-criteria; problems of contact and accessibility etc. Against this, the volume of university-stakeholder activity in regional development is at a remarkably high level by any standards, as will be discussed later. Further, there is a whole range of intermediary organisations set up by the universities to facilitate linkages and joint action, including Regional Development Officers.

The expectations of stakeholders surveyed at Rostock reveal similar tendencies in terms of the universities proactively contributing to regional development in a systematic, transparent market. In this, the following elements are particularly cited : practical and applied orientation to teaching and research; in accordance with regional priorities improved range of marketable technology and product developments; joint research; venture capital to target R and D to SMEs; far better communication for student employment; determining R and D priorities etc.

35. The cases in this group do demonstrate a critical factor : the role of central government funding and other national rules as facilitator or inhibitor in university-stakeholder relationships. Several examples demonstrate this. Universities are generally accountable to

funding bodies, and the latter's success criteria are normally not those of regional stakeholders - a difficult tension for the universities. If it is public policy to encourage inter-institutional co-operation in a regional context, funding mechanisms should encourage this, not create disincentives e.g. many regional development funds are actually competitive. If governments genuinely wish universities to be part of the regional supply chain, they should construct funding mechanisms accordingly.

Universities In Regions Of Economic Revival : Evolving Mission

36. It is broadly the case that the core universities in the clusters within this group are relatively traditional universities, with a broad coverage of disciplines, and are very much publicly funded institutions. Relatively traditional universities probably tend to be cautious and conservative in outlook, building from existing strengths as perceived by governments, clients and stakeholders, rather than embarking on root and branch reforms. This is not unexpected, since their origins and strengths were partly evolved during periods when the regions themselves were economically probably healthier than they are now. Thus, we see statements of mission incorporating 'the advancement of knowledge', 'the pursuit of academic and other freedoms', 'the provision of excellent teaching and research to the community as natural extensions of mission' etc. In this, they are little different from universities in other groups, but the tension in mission development may be more acute.
37. However, some interesting features are apparent
- 37.1 they do see themselves as part of an 'Elite' structure of universities, and somewhere near the top.
- 37.2 consequently, with an increase in demand for university services, especially relating to student growth, they have a choice of market position. First, do they retain the same philosophical stance, and leave the mass H.E. to someone else i.e. the variants of Fachhochschulen? Second, do they selectively adopt segments of expansion or new developments for themselves, consistent with an elitist position? (thus Brno has added faculties since 1990 of a professional nature - administration, information and social science, and with a focus on Masters and doctoral study - which are distinctly market focused). Third, do they attempt a process of institutional mergers of a rather integrated nature, but ensure that the mass H.E. is not performed to the detriment of the traditional, and research focused areas, or indeed, to try to eliminate ostensibly weak institutions? (as seems to be occurring in Szeged). Fourth, do they acknowledge that other HE players may enter the level of activities which they have dominated, so the playing field becomes more level? (as has happened to some extent in the North East of England).
- 37.3 the tactical and strategic positions of the other players reflect similar tensions.
- 37.4 the economic plight of these regions presents universities with a difficult conundrum. Declining state finances for HE create an imperative to earn substantial amounts of non state funding. However, this has to come largely from regional enterprises which may be too small numerically to support serious training and contract research, and too slim to pay the fees involved. Creative financial management of entrepreneurial operations is thus essential, but in many cases in Eastern Europe, state-reared university finance directors are not really suited to the purpose. This would not apply to anything like the same extent in Western Europe. Small HE providers and privateers, of course, have much smaller overheads, hence their ability to undercut large traditional universities. However, this regional economic plight

clearly places an obligation on universities to become more active in, for instance, the development of capital markets, human resource development, assisting foreign investment etc. and the examples demonstrate how universities need to adapt their practices accordingly.

- 37.5 the same issues regarding institutional autonomy as surfaced in the other two categories of regional also apply here. Institutional entrepreneurialism cannot flourish in centralised bureaucracies, and happily, both the Czech Republic, Germany, Poland and Hungary evidence considerable progress in the removal of constraints.

This development of mission is thus especially reflected in

- i the expansion of the capability of research to offer adequate technologies and know-how.
- ii seeking better communication in terms of both channels and terminology.
- iii overcoming general distrust through the establishment of new and relevant fields of study/ecology, information, commercial law etc.).
- iv the involvement of practitioners in research and education, and the reduction of the age profile of university staff to enhance innovative thinking without rigid preconceptions.

and consequently, a much wider portfolio of activities than was hitherto the case (Rostock, Katowice, Silesia, Szeged).

- 37.6 the importance of universities playing a local or global role is also supporter here. The local dimension provides support and local alliances, whereas the international dimension provides access to the state of the art knowledge to benefit and develop the region. (This is particularly affirmed by Rostock, Newcastle and St. Etienne).

Reflections

38. It is apparent from the foregoing that there are some differences between the missions of universities in the three regional categories. However, a number of interesting general propositions emerge
- 38.1 the missions and positioning of universities are evidently being influenced by a pile up of societal expectations, which are constantly evolving in complexity, and may be differently expressed by different stakeholders.
 - 38.2 universities therefore cannot sit on a static mission.
 - 38.3 the assumption made by many externals is that universities are relatively wealthy and can easily respond to these demands. This is not really the case, and universities may well be subject to pressures leading to goal displacement and a distortion of their traditional role.
 - 38.4 universities have to be careful that, if they neglect the basics of a good university - high quality teaching and research, they are likely to provide inferior research transfer and continuing education e.g. valuable research for SME needs is likely to be of inferior quality in the international academic market place.

- 38.5 by various means, universities have to reconcile these multiple demands - including internal organisational differentiation and staff specialisation.
- 38.6 universities have not a monopoly of knowledge any longer, and thus need to enter into networks and strategic alliances with a wide range of knowledge based organisations, both to keep up to date, and deliver high quality services to the community.
- 38.7 international outlook is a necessary concomitant of an effective regional role, given the globalisation of the world economy and knowledge industry. In an European context, EC expectations would embrace both an East-West orientation and a North-South axis to the developing world - from quite different motivations.

How universities cope with the above, we shall now explore, having analysed the characteristics of these regions and regional groupings, focusing the discussion on various domains of regional development.

C. HUMAN RESOURCE DEVELOPMENT

39. Though universities in general have aims and mission which contain the lofty statements we have already examined, the preparation of students for the world of work has always been an intrinsic part of their role. Thus, the exploration of the relationships between the needs of the regional labour market in aggregate and in specific terms, is an essential area of enquiry. In this section, we attempt to assess whether the characteristics of the different categories of region selected for the study have any marked or differential effect on universities' roles in the development of human resources within their regions. This, of course, has to be placed in a broad context which encompasses vocational first degrees; continuing professional development and updating; advanced training; and general lifelong learning. This includes those who have missed out on initial training. The assumption will be that many different types of client groups will be catered for, and that flexibility in pedagogy, curriculum, delivery and organisation will be prerequisites. We shall consider evidence for the three categories in terms of
- i regional context
 - i policy responses
 - i organisational mechanisms

Universities In Peripheral Regions : The Regional Context

40. Peripheral regions, are by definition, somewhat removed from the main national theatres of population, economic activity and governance, and the case institutions reveal some problem areas which result from this, especially given the general tendency for such universities to obtain most of their students regionally (Cork 85%, UmeÅ 85%).
- 40.1 some universities (Catania) report a decrease in the number of teenagers (17% 1994-2008), which clearly reduces the number eligible to participate in higher education.
 - 40.2 others (Tromso) indicate that their average entry grades for school-leavers are lower in North Norway than in the rest of the country, which may either reflect the better students leaving the region to study in the South; or, less effective secondary education; or, immediate entry to the job market.
 - 40.3 graduating students from a peripheral university may not find it easy to obtain jobs locally, resulting in relatively high unemployment (Patras) or their seeking jobs nearer the capital city, which may well be more successful in attracting big multi-nationals with a strong market attractiveness (Cork).
 - 40.4 a strong reliance on SMEs in the local economy may not, in fact, enhance job prospects (Cork). As Patras observes, the desired jobs are in the public sector - but these are in short supply. The private sector has more vacancies, but they are considered less attractive.
 - 40.5 the size of some universities in peripheral regions may not be sufficient to present a fully comprehensive educational experience, so that key aspects of professional and regionally relevant training may be missing (Minho) or under-provided, (Tromso in relation to health and technology studies). Universities would like to present a comprehensive portfolio as well as cater for very specific regional employment needs as the former would certainly attract non-regional students.

- 40.6 regional companies may complain that degrees are not specific enough (Patras).
- 40.7 the pull of big city universities with all the attractiveness of city life, and the attendant infrastructures is clearly a big factor, as is the opportunist raiding of the potential periphery region student population by aggressive universities outside it (Cork), and, more subtly, by distance learning provision. Big city universities would also tend to be the main target of international students.
- 41. These points, of course, do not necessarily apply equally across all universities in this category. Cork, for instance, indicates that demand continually outstrips supply, which leaves the university with interesting debates over selection policies (and how to encourage adult fee paying learners), and also how to prioritise areas for development within the context of incremental growth. Kuopio, UmeÅ and Aalborg demonstrate a high retention of regional students.

Universities In Peripheral Regions : Policy Responses

- 42. Faced with these challenges, the response of universities is varied. The external responses theoretically may run as follows
 - 42.1 for regions of low per capita income and stagnant growth rates, the role of university education could quite understandably encompass the following : assisting the best students to escape their lot; acting as a sort of 'parking lot' to reduce unemployment levels by taking young people out of these statistics; generating a sizeable volume of targeted continuing education; and ensuring general education was substantially skill-based.
 - 42.2 for regions of low per capita income traditionally, but with clear indications of economic growth, the role of institutions could be more up beat with vigorous programmes of vocational/professional degrees and substantial manpower training and retraining in close collaboration with local stakeholders.
- 43. The responses of case institutions encompass elements of each stereotype, as may be itemised thus
 - 43.1 ensuring a regular flow of excellent students from the regional school system is clearly essential, against likely competition from other providers, inside and outside the region. This is manifest in the operation of an effective School Liaison service, Higher Education Information Centres, careers guidance exhibitions, briefings of school staff, a active Alumnus Organisation, and guaranteed access from schools with whom the university has official so-called 'compacting' arrangements (e.g. Cork, Tromso, Kuopio, UmeÅ, Aalborg).
 - 43.2 designing programme offerings which are perceived regionally to be state of the art, and particularly relevant to the vocational and professional needs of the region (Tromso, Cork). Aalborg has espoused as a central element in its mission a problem-based interdisciplinary approach to curricula and learning by projects which is highly relevant to regional issues. This presumes a number of pre-conditions - high quality course development and validation processes; the continuing engagement of stakeholders and professional groups in identification of needs and programme design; resource commitment at a necessary level. It is here that the balance must be

found between a course which produces a so-called 'well-rounded individual' and one who has relevant competencies (Patras).

- 43.3 incorporating within degree programmes a major industrial training component (Cork in Business Information, Computing etc.); delivering degree courses specifically for a company : so-called 'co-operative postgraduate education' (Catania and SGS Thomson) or focusing on priority 'Know-How' themes (Food, Forestry, Tourism and Biotechnology in Kuopio).
- 43.4 designing programmes which are imaginatively flexible in terms of part-time education and lifelong learning. This would imply credit recognition for eligibility to enter a course inter-institutional transfers and for exemption from part of it. The former is found in Cork and Tromsø, and on a fairly small scale, whereas credit exemption for prior learning based on work experience rather than prior study seems largely missing. This would appear to be a main area of potential development for this type of region. Tromsø has adopted in 1997 a whole package of interrelated policies and practices on problem - and project based learning, with a substantial relegation of lecturers as a vehicle of learning, and a commensurate boost to IT based pedagogy (the last point is true also of Patras). This is clearly potentially attractive to the late-entrant to HE, to the part-time student, and lifelong learning generally. The introduction of Diplomas at Catania, to facilitate credit accumulation, and to reduce drop-out and wastage, is also apparent, though credit exemption is not total.

Continuing and adult education programmes are part of this (Cork), but it is probably important to seek means of articulating these with mainstream degrees in a credit sense.

- 43.5 distance education and Internet based programmes, whilst ostensibly very relevant to geographically peripheral or elongated regions, do not seem to have received much attention to date with the exception of Umeå.
 - 43.6 all universities in the sample espouse the importance of the international dimension and international student exchanges, both to educate regional students from a broader perspective, and also to import students, who may subsequently work in the region. Precise evidence of volume and effect is not available.
44. There are several observations or caveats on the above
- 44.1 of the sample, the majority have not actually formulated or implemented policies on lifelong learning or the use of credits to this end. Rhetoric thus is stronger than visible action in these cases.
 - 44.2 some governmental policies regarding the funding of part-time students do not assist the lifelong learning movement (Cork).
 - 44.3 several well conceived national policies do not always take account of the particular settings of the peripheral university.
 - 44.4 as yet, systematic destination surveys of graduates are not well developed. Policy monitoring is thus deficient in this respect.

- 44.5 competency based approaches to curriculum design are apparently not recognised. This may be a critical key in developing common aims between stakeholders and universities.

Universities In Peripheral Regions : Organisational Mechanisms

45. To develop and consummate the above policies and practices, stable and purposive connections between stakeholders and universities are needed. These may take various forms, and among these cited are the following
- 45.1 organisations within the university to promote adult continuing education. Thus Catania has its Orientation and Training Centre (COF) which is responsible for developing a series of agreements with various partners. Cork has the Centre for Adult Continuing Education, which acts as a marketing arm of the university, generates policy with the assistance of an Advisory Group, and co-ordinates the university's delivery of programmes across 100+ centres in the region, and in various large employers, drawing on the extensive expertise in the faculties. Tromsø has the Centre for Teacher Training, Further Education and Distance Learning (UNIKOM) pursuing similar agendas. Aalborg has the EVA Consortium of 20 accredited educational establishments including the Centre for Labour Market Training to provide user friendly access. Kuopio has the Centre for Training and Development.
- 45.2 Minho, as previously indicated collaborates with regional and subregional co-operative organisations to do the same (AIM, AMAVE, ADRAVE).
- 45.3 university careers offices which are active in schools and the community (Cork, Patras).
- 45.4 standing fora for developing industrially oriented Further and Higher Education (Tromsø) drawing on a wide range of interests.
- 45.5 boards for inter-institutional networking, which apparently exclude companies: Tromsø's Board of Higher Education (RHU) attempts to define the scope of FE/HE in North Norway; co-ordinate provision sensibly; identify and fill needs; maximise student transfer; and engineer institutional agreements. This is important in an attempt to halt the outflow of students from North Norway.
- 45.6 a myriad of ad hoc. and unilateral conferences and meetings with universities and regional interests.
46. The picture developed in the above paras. 39-45 is one of considerable variety and sophistication. The messages are broadly similar, but there does appear to be significant potential left in exploring all the relevant aspects of lifelong learning, and engaging with particular enterprises. The provision of services for SMEs produces considerable problems for universities both in identifying and accessing the companies and also in designing appropriate services. It also produces problems for SMEs in terms of their internal sophistication for both research and training, and their ability to utilise fully university expertise.

Universities in Regions of Concentration : The Regional Context

47. Paragraph 27 has attempted to analyse the character of these regions, in terms of population density, strategic locations and identity, openness to international influences, economic base, and employment patterns.
48. In addition to those points, the follow may be mentioned
- 48.1 there appears to be a relatively balanced student intake in terms of gender, religion (Brussels), regional background, but with under-achievement in education. The latter certainly provides a major opportunity and challenge for universities.
- 48.2 the principal concerns of stakeholders in terms of education seem to be broadly articulated as a quality education (undefined), exposure to IT entrepreneurial skills, a comprehensive continuing education programme, especially for professional training. It is perhaps significant that these are not articulated in any operationally useful detail, neither in the case of Brussels do there appear to be any concrete studies of education and training needs in the region.
- 48.3 unemployment varies between 8% and 24%, but it does not appear that the universities have taken this on board as a factor in the appraisal of their educational programme. Graduate destination surveys are not well developed, except in the economics faculty in Brussels (VUB).
- 48.4 international experience, through Erasmus and Socrates, is warmly espoused, with, however, conflicting trends. More overseas students enter VUB than Brussels students move out, whilst the reverse is true of Torino. The significance of this in terms of regional development is not clear, though systematic organisation of the process is evident.
- 48.5 in all institutions, enrolments are healthy and expanding in most fields, with little evidence of damaging competition within the countries concerned, and a reasonable mix of students. Some of the societal needs in this domain are at the lower labour level, and municipalities would not automatically look to the flagship university for resolution of this problem, but to professional institutes (Rotterdam).
49. The overall picture is one of a relatively comfortable present, with no great storm clouds on the horizon. The relationship of the educational programme to regional human resource development is not as clearly articulated as with other regional types, for Brussels and Torino, though that for Rotterdam shows a marked entrepreneurial emphasis. UPC Barcelona indicates a concern for the proper development of the Internet - which seems to constitute the biggest challenge.

Universities in Regions of Concentration : Policy Responses

50. On the whole, the phenomenon described in para. 49 may well explain that universities in this group are not so well advanced in the formalisation of policies and practices in a number of areas, presumably because the external stimuli have not been strong enough to cause significant transformations. What we therefore find are more incremental adjustments, which are clearly worthy in their own right.
- 50.1 as far as lifelong learning is concerned, VUB accepted this as an important educational objective, back in 1975, and has formalised this in a centralised postgraduate/post-experience structure (IPAVUB) to act as a centre of excellence in delivering programmes arising out of quality research, also in socially relevant areas.

The intention is that the Erasmus Hogeschool (EHB) will link its efforts with VUB, which is a promising inter-institutional initiative of strategic significance. Rotterdam has also developed fundamentally different programmes for students other than conventional full-time e.g. postgraduate Masters programmes, courses for special interest groups, elderly, women, industry professionals, cultural minorities. However, the Municipality has not yet developed apparently, a systematic policy framework for cultural groups.

- 50.2 access is an important element in lifelong learning, and here, it appears, the universities are much more traditional. Torino has introduced numerous courses with conventional criteria. VUB's requirements are the standard Flemish school diploma or equivalent. No flexibility for late learners seems possible, and this is likely to constitute a barrier to the development of flexible lifelong learning. Rotterdam is an exception given its modular education programme, which opens courses to non-standard entrants.
- 50.3 credit transfer seems to be well deployed via ECTS for European students, which guarantees quality and encourages mobility. Whilst used for this purpose at VUB, it is not used as part of a much wider access or credit exemption programme, or indeed, as a means of articulating with company based programmes. In Torino, judgements are left to faculties which seems to encourage inconsistency of standards. Rotterdam is more systematic.
- 50.4 engagement with companies and enterprises is evident in Rotterdam; up to a point in Torino with in-company programmes for postgraduates, but the concept of co-operative education with companies seems undeveloped in VUB.
- 50.5 vocational programmes seem to follow the usual conventions with emphasis on internships (in 9/16 subject areas at VUB), and job placements and structured work trials in companies linked to career development plans at Torino. This project appears to have evinced interest from company partners to play a developmental role with universities in examining ways of maximising the theory-praxis interface, and defining what generic competencies and skills might systematically underpin university degrees (e.g. problem solving, IT, planning, team leading etc.). This looks a highly promising debate.
- 50.6 co-operation between Erasmus and Rotterdam municipality or labour market research through ECLA (labour studies institute) is fundamental to the systematic development of university programmes and regional. This is not apparent in other cases.
- 50.7 the use of new technologies is seen by UCP Barcelona as the key factor in the evolution of the university's capability in human resource development and lifelong learning, through the revolution IT has introduced in concepts of space and time as applied to learning (Cyberspace). The exploitation of the Internet to support distance education, work based education, virtual classrooms is thus likely to have significant effects for UCP and others on institutional culture; learning environments; new institutional roles; new teacher/learner roles etc. The European Commission White Paper 1995 on Education and Training reinforces the idea of the 'network culture'.

Universities in Regions of Concentration : Organisational Mechanisms

51. The development of an educational programme in universities relevant to the improvement of the regional human resource base is a complex task, especially in regions as economically and structurally complicated as those in this study. Furthermore, it is a task unlikely to be undertaken successfully by any single unified structure of interaction. The variations in enterprise and employer needs and the differentiation between the complexities and conventions of various academic disciplines and inter-disciplines calls for differentiated processes of liaison at various levels.
- 51.1 at the strategic level, the Flemish Interuniversity Council is such a vehicle for VUB, though it is to be noted, it incorporates only the Katholieke Universiteit Brussels in addition to VUB of universities in the Brussels area, which might be defined as a weakness. The other Brussels universities are part of the Francophone network. It is active in the definition of policy in innovative areas like lifelong learning, competence validation, credit accumulation, access criteria etc. This focus is obviously critical in legitimising new HE agendas and areas for reform.
- 51.2 university governing bodies or executive councils could well incorporate external representation from stakeholders (VUB). Indeed at Erasmus, the Executive Board of the University is monitored by a Board of Trustees. These, devices of course, are only profitable if the agendas of such meetings are meaningful exercises in considering academic development priorities from a stakeholder perspectives. However, in some cases, such bodies are precluded by constitution from academic discussion of this kind.
- 51.3 whilst strategic mechanisms for co-operative curricula curriculum development do not seem to exist within the sample, it is argued that piecemeal progress is made through periodic quality evaluations of programmes which incorporate stakeholder auditors, and by the feedback provided by alumni (VUB) or faculty level Advisory Boards (Rotterdam). Welcome though these are, they are piecemeal across the sample.
- 51.4 research units are seen as an important device to provide specialist professional training to enterprises (Rotterdam and Brussels), but this is seen by VUB as a reactive response to demand, rather than a concerted provision.
52. It is therefore apparent that there is a widespread realisation that future developments between enterprises and institutions to ensure more effective preparation for the world of work are necessary, and that reliance on sporadic engagements between faculty members and individual companies is insufficient for the challenges which lie ahead.

Universities in Regions of Revival : Regional Context

53. As far as these regions are concerned, they include a sample from Western Europe, and also from the former Communist bloc. Whilst understandably, the precise situations are different, some generic patterns may nonetheless be detected.
- 53.1 the economic infrastructure, as discussed in earlier paragraphs is in what may euphemistically be described as a transitional condition, with the collapse of former basic industry, a struggling but emerging generation of new enterprises, often SME, with short time horizons, variable corporate experience and uncertain expectations of what HEIs may have to offer.

- 53.2 unemployment may be extremely high in some pockets within these regions (40% + in parts of North East of England); much of this may be structural. and women and young people may be especially disadvantaged.
- 53.3 participation rates in HE are normally amongst the lowest in the respective countries, and in some areas (Katowice) a low percentage with good secondary education.
- 53.4 on the whole, not many students will not move outside the region for their higher education (75% of North East of England students stay in the region) ... so called territorial immobility (Brno). They will tend to seek employment in that region, especially in Central Europe, where graduate unemployment is highest amongst medics, arts and teachers.
- 53.5 the above is said to reflect a situation where there is a mismatch between what students want to study, what universities provide in the way of courses, and what employees wish to hire. Brno poses a massive underprovision of places in finance, law, media and information, and Szeged in science and technology. Newcastle poses a phenomenon of student course choice being unrelated to a perception of employment opportunity, and a situation where a well designed course in Chemical Engineering for local companies failed, whereas one in Media Studies unrelated to regional needs was very popular. Katowice indicates a reluctance of people/students to change occupation, and a lack of connection between training services and regional need.
- 53.6 most regions indicate an employer dissatisfaction with provision, and identified needs include : well rounded students able to work in an European context which demands linguistic skills and overseas work experience (Brno); computing and IT skills; communication skills (verbal and written); entrepreneurial training and lateral thinking; and a feeling by stakeholders that academic skills and employment skills are regarded as unrelated by universities (e.g. on MBAís).
- 53.7 there seems widespread concern that the educational needs of those not within easy geographical reach of centres are not adequately catered for.
- 53.8 curriculum structures are perceived to be far too rigid, given the volatility of regional demand, students' desire to change direction, and the fact that graduates take c. 3-5 years to emerge from a standard degree course.
- 53.9 the twin forces of access and demand would seem to justify significant expansion in particular fields, since educational services may often be significantly overloaded (Katowice). However, these regions are by definition, not rich, and desired expansion in professional areas may well be thwarted by national regulations and narrow interests of the professions themselves, who it is alleged (Newcastle) rarely espouse regional concerns.
54. In short, there are very substantial issues to be confronted in this type of region as far as human resource development is concerned : some are environmental ; some are systemic; and many are organisational, whether university or enterprise.

Universities in Regions of Revival : Policy Responses

55. In broad terms, the responses of universities and partners seem to be addressing six broad agendas
- 55.1 obtaining accurate information on labour market needs.
 - 55.2 the expansion of more responsive provision of education and training.
 - 55.3 restructuring of vocational education, the strengthening of general secondary education, and improved access to both.
 - 55.4 an increase in the number of graduates in these areas, and an increase in the proportion of these finding employment.
 - 55.5 strengthening the proportional distribution of the wealth.
 - 55.6 to these ends, the creation of flexible self adjusting systems and processes according to market shifts, whilst not being constrained by unnecessarily complex and shifting planning mechanisms at state, regional or institutional levels.
 - 55.7 a strong priority attached to the implementation of training for entrepreneurs, managerial staff and civil servants (the last named being particularly evident as a need in Central Europe).
56. Interestingly, several of the preferred policy options are not substantially different in nature from those being followed in other regional categories, despite the specific settings. Let us examine :
- 56.1 at a macro-level, we do see some strategic frameworks being developed for universities and enterprises to join forces. North East England for example, quotes the UK Government White Paper on Lifelong Learning, and the advent of the so-called University for Industry, both of which are likely to have profound effects on the local scene. In Katowice, there is a strong consensus on the strategies necessary for improvement in school education, university development, training systems to promote reconstruction etc.

At St. Etienne, the co-operation with 11 other HEIs within the PÙle Universitaire St. Etienne (PUSE) is a massive contribution to systematic human resource development, encompassing some 27,000 students under initial training or continuing professional development; and developing an impressive area of jointly designed and delivered programmes.
 - 56.2 significant efforts are being made to generate meaningful labour market surveys in regions to inform the dialogue (Brno; Katowice; the so-called GLAM study in Newcastle), rather than to act as the basis of sterile planning.
 - 56.3 curriculum and new course development is clearly addressing the need for new fields of study. Szeged, for instance, has developed a formidable portfolio of new courses and accreditations at all levels - post-secondary, college, university, remote education and second degree - the vast bulk of which are in areas of new economic and professional growth. Katowice's focus is on more inter-disciplinary studies relating to new market opportunities, at all the institutions in the region. St. Etienne's Pole (PUSE) has an impressive array of new vocational degrees since 1991, and an insertion of vocational elements into the classical curriculum.

The active and critical review of all existing programmes, incorporating a stakeholder perspective, seems inescapable. So does the creation of a devolved course educational process which is speedy and can adapt sensitively to market opportunities such as tourism. There is a big message here both for governments and over centralised institutions.

It is evident that this also involves opening up access in new locations (Newcastle, Katowice), and a significant imperative for staff development within the institutions themselves, in terms of pedagogy, new subjects and dealing with various student groups, and in terms of simply expanding the skilled teaching force available.

- 56.4 the design of programmes is moving toward a credit structure (Brno, Katowice, North East England, Szeged) for a number of reasons. Modular and block structures facilitate many things : credit accumulation; economising on course provision by rationalising duplication (i.e. one module may serve many degree courses); credit transfer with foreign institutions, and indeed domestic institutions, introducing a Diploma phase as a step off point in a degree; and enabling a student to change direction through a degree as his/her perceptions of employment opportunity shift. Newcastle emphasises that programmes cannot just be aimed at regional needs, given students need employability, and this may be found outside the region.

However, if such a movement is to be successful, a common credit tariff (whether ECTS or something else) and commonly applied procedures across universities is essential. The highly devolved nature of this are present in Brno and Szeged is likely to lead to problems.

- 56.5 the question of competencies is a common concern of employers, but not addressed with any consistency across the sample institutions, may be because of the newness of the concept, may be because of the dominance of traditional faculty cultures. It has probably reached its fullest development in the Newcastle case, with the so-called GNVQ movement (General National Vocational Qualifications) which is complex and problematic.
- 56.6 careers counselling is gaining in prominence (Newcastle, Brno Rostock, St. Etienne) since the employment situation is certainly worrying and in some cases (Rostock), alarming.
- 56.7 the co-operative education movement - degree programmes run within companies under the auspices of a university - is apparent in the Newcastle case (the so-called Ford Motor Company EDAP project), but does not seem to have gained ground in any significant way in Eastern Europe. It does, of course, call for sophisticated internal company personnel development and training operations, which were neither characteristic of the old state utilities, and not yet of the new SMEs. As an instrument of human resource development however, it clearly holds great potential. This, of course, is parallel with continuing professional development for such groups as doctors in keyhole surgery (Newcastle).
- 56.8 an expansion of the training system, which not only matches the needs of business reconstruction, but is also designed for the retraining of redundant employees (Katowice). This is likely to operate at three levels : the industry, the enterprise and the employee, (especially in hard-hit sectors like mining and metallurgy). It remains an interesting question for universities as to what their role should be in this context.

This might leave such training to others; they might do it themselves; they might be focal points for the development of curriculum and experimental projects, but not for mass delivery. There is a strategic choice to be made, influenced by issues of core mission, scale, and the configuration of institutions in the region.

- 56.9 St. Etienne is especially well advanced in its multiplicity of programmes involving training through apprenticeship, linked work and training, both in terms of specialised continuing education courses and within initial degrees (of which 25% study in this way). The permutations available are impressive, as are the multi-disciplinary combinations on offer. The fact that a high proportion of these are geared to MSEís is a major break-through, of general application.
- 56.10 the growing importance of internationalism in these universities is well demonstrated in the case of human resource development in terms of student mobility for part of first degree study in partner universities (Rostock, St. Etienne, Newcastle) accessing international distance education (Rostock). Here the role of Erasmus, Socrates, Comett, Leonardo, Sprint and Brite are crucial, as is ECTS.

Universities in Regions of Revival : Organisational Mechanisms

- 57. The point in para. 56.7 is of course relevant here also, and underlines that the organisational challenge is to
 - 57.1 create a coherent and structured market mechanism for HE.
 - 57.2 weak institutions from an unresponsive tradition and a producer-driven culture.
 - 57.3 counteract the ever present tendency of academic drift, likely to be exacerbated as in Eastern Europe, universities acquire new freedoms from state control.

These challenges are formidable, and need attention.

- 58. Organisationally, we therefore observe
 - 58.1 organisational forms within universities : here we see examples of Common Continuous Education and Department (St. Etienne); Careers Offices (Brno), organisational units for systematic new programme development (Szeged), hopefully with stakeholder participation, though the precise extent of this is not clear in central Europe.
 - 58.2 external organs designed to foster liaison : the so-called TEC (Training and Enterprise Council) in North East England; the ubiquitous Chambers of Commerce, ENTRUST (Newcastle), and regional offices of central government designed to co-ordinate the endeavours of ministries in a regional focus.
 - 58.3 there is clearly a huge need in regions where 60% of university entrants are from regional communities for smooth transitions between schools, further education and universities - at the very least a regional policy forum. This may be one of the critical areas of attention in the coming decade.

Reflections

59. However, there does seem evidence that less traditional universities will be more innovative and experimental than their more vulnerable counterparts. This may also imply that they will be more successful in terms of generating new income, which raises questions for older universities to confront. Notwithstanding, there is substantial difference between achieving this, and resolving the endemic unemployment apparent in many regions. It remains an open question as to how universities may most effectively assist in this process.

We may also observe

- 59.1 a general tension emerging between the needs and the competency movement and skill based training with the conventions of traditional academic teaching.
- 59.2 a strategic problem for universities as to how far they espouse a responsibility for lower levels of human resource development vis a vis enterprises or other educational establishments.
- 59.3 the growing attention being given to issues of access and participation and the interrelationship between and differentiation of effort between employers and higher education in these processes.
- 59.4 the general need for more intelligence on employment trends and needs arising therefrom.

D. CULTURAL DEVELOPMENT

60. This is an area which may seem a little nebulous, and certainly not quantifiable in its benefit the way other interfaces are. Nonetheless, it is important, in a number of respects
- 60.1 it has a lot to do with regional identity and self-esteem, and has knock-on consequences in other domains.
 - 60.2 it is about the enrichment of lives within the region, and the promotion of identify.
 - 60.3 it is about the enrichment of civilising values and their propagation, and thus is not just about regional values, but universal values of reasonable behaviour, citizenship, freedom of thought and expression, which are held by universities everywhere. Thus, the international dimension should not be overlooked. In this, the Magna Carta signed by European Universities in Bologna is very relevant.

We shall consider the evidence for the three categories in terms of

- i cultural mission
- i cultural activities
- i organisational aspects of cultural engagement

Universities in Peripheral Regions : Cultural Mission

61. This type of region is, by definition, not only geographically relatively remote from the capital city concentrations, but often represents a cultural stronghold as well, with well defined language, dialects, folk history, literature etc. This may reflect an original ethnic grouping which is now outnumbered by the multicultural influx often associated with capital cities. It may represent a vigorous provincialism and pride in the local area and its customs, and a resentment against big city-isms.
62. There are thus many facets to the cultural mission of universities in this category, namely
- 62.1 some universities (Catania) argue that in a world of fast intellectual and knowledge development in almost all domains, they are one of the few institutions which are able to take a helicopter views of the changing world, and have thus an unique role to play in bringing civilising influences with long term horizons.
 - 62.2 several argue the case for a cultural mission based on the preservation and promotion of regional culture (Patras, Cork, Minho, Catania). The 'promotion' of regional culture and the geographical and ethnic interests and heritage contained therein constitutes a formidable challenge. The promotion and development of a regional culture is somewhat more complex than its preservation, and the practical ramifications of this difference are examined later.
 - 62.3 in some cases, (Cork), a promotion of the Irish culture as a whole is not a preserve of the particular institution, since all colleges of the National University have this role. However, the promotion of Irish culture with an emphasis on this region is.

- 62.4 in some cases (Tromso) the regional culture, in fact, transcends national boundaries - hence its role with Swedish, Russian and Finnish associates in promoting the interests of the Saami culture.
 - 62.5 some (Patras, Catania) see internationalism as a major dimension of cultural development, by opening up the region to positive external perspectives, through student mobility, and all certainly see their role as exercising a generally civilising influence on the region through artistic and cultural pursuits and the promotion of humanitarian values. Cork, indeed, sees the Irish Diaspora as a very significant element in research, and support.
 - 62.6 finally, - and instrumentally - a strong cultural development programme is seen as important in creating outreach into the community, in an attempt to break down psychological barriers between university and community, and to reduce the mystique which sometimes surrounds institutions (Patras).
63. The extent of universities' endeavours in these directions varies, and is influenced by a number of factors, including
- 63.1 financing and resources
 - 63.2 whether the mission is explicitly articulated or merely a vague backdrop.
 - 63.3 the range of disciplines in the university. Clearly a strong arts and humanities capacity helps enormously, and its absence is a handicap (Kuopio).
 - 63.4 the existence of incentives to motivate faculties, especially in devolved institutions with a weak strategic framework.

It is also evident (from a Kuopio study) that external perceptions of the university's vigour in regional cultural life may be rather less geared than those of the university's own internal perceptions.

Let us now examine the manifestations.

Universities in Peripheral Regions : Cultural Activities

- 64. The provision of convenient degree study in subject areas related to regional culture is widespread. Cork indicates that 50%+ of its students are in the Arts area, so this is natural and the Faculty of Celtic Studies is prominent in this. This pattern is replicated elsewhere, with leading roles played by archaeology, history, music, art and language faculties, principally (Patras, Tromso, Umeå, Minho and Catania). Umeå also provides related vocalised programmes in arts administration etc., which play a major practical role in cultural development.
- 65. The provision of non vocational and non degree courses is widely prevalent in many forms.
 - 65.1 short courses conducted by faculties or centres for Continuing Education on the above areas are legion. The questions which surround this provision are : Should they be provided free or priced? If so, at what level? Should they be credit bearing courses, and if so, what is the mechanisms? Tromso awards 10 credits for courses on the Saami culture, but seems unusual in this respect. Patras' student auditorium class is

entitled to attend courses, but not receive credit. At a general level, one might observe that credit arrangements left to faculties will neither create consistency nor guarantee the achievement of university level aims, a point not confined to this type of region.

- 65.2 university fora and open regional, national and international conferences on pertinent topics e.g. Western Greek Heritage (Patras); Irish Diaspora (Cork); Arctic Life (Tromsø), or more general cultural or conference tourism (Kuopio).
66. Events provided by voluntary bodies and societies in conjunction with the university debaters, concerts, poetry, music making, theatre projects university expertise forming a focus around which groups coalesce.
67. There is a growing interest in universities' involvement in so-called Heritage developments - protection and re-creation of ancient sites etc. (Patras, Cork). This is not only significant in cultural development, but instrumental in the tourist industry. If universities activities in this domain through departments of archaeology and history integrate with those of business schools etc. on management of tourism and hospitality. Kuopio concedes it has had little effect on architecture per se, but has certainly accelerated the development of social and cultural facilities in the city.
68. Related to the above is the question of research and regional studies. For peripheral universities, this does seem to be an essential element, if their regional roles are to be taken seriously, since
- 68.1 it clearly underpins vocational and non vocational courses.
- 68.2 it is the instrument for engaging with regional cultural interests and societies.
- 68.3 it is potentially a source of income from regional companies and interests interested in demonstrating their cultural sensitivity through sponsorship.

How co-ordinated this actually is, and how genuinely active so-called regional research is, is somewhat variable. One factor which seems important is the existence of a thriving University Press, which can act as an incentive for staff to publish regionally oriented research (as well as other research, of course), and also propagate in practical ways the regional achievements of the university (Patras, Minho). Such research is subject to the usual difficulty in subject based universities, that of stimulating interdisciplinary thematic research.

69. Universities possess a wide range of cultural facilities which potentially constitute a formidable regional cultural resource, depending on whether the public are able to access them. These facilities include art galleries, museums, concert halls, libraries, archives, laboratories, and sports facilities. The overall picture is variable in this respect regarding societal access and utilisation.
- 69.1 in principle, there seems to be a split between those universities which regard their museums, galleries, sports facilities etc. as being part of a much larger regional resource, and have reasonably open and often free access (Cork, Catania) and those which regard the facilities as their own, with much more limited (grace and favour) access (Tromsø, Umeå). This may not just be a question of philosophy, but also questions of pressure on facilities, and of financing.

- 69.2 as far as libraries are concerned, access is generally quite open (Tromso), but in cases, borrowing is limited to staff and students and societies and institutions with whom the university has a registered relationship (Cork, Minho, Patras, Catania). There is growing interest in creating an on-line service for regional organisations to use swiftly on a costed basis, which seems a most helpful development. Minho's Programme Bibliopolis is seen as an interesting case. Where significant users contribute to the financing of services, this clearly assists in securing good standards (Tromso).
- 69.3 archives constitute a slightly different issues, but the trend seems to be open access, and encouragement to regional societies and interests.
- 69.4 laboratories tend to be much more restricted, other than where access/tasters is are seen as a useful device to attract potential students and school teachers.
- 69.5 University museums seem to be in varying conditions of systematisation and public access. Some are prominent and proactive (UmeÅís Museum of Pictures). Several (e.g. Catania) whilst they house important collections, are not well exhibited. With the assistance of EU funding, the whole is being reorganised and re-housed in new buildings, with public access a condition of grant.
- 69.6 sports facilities seem available for booking but only after the universities' own needs are satisfied. Tromso indicates that given pressure on sports facilities generally, the university needs its own building.
- 69.7 One can certainly appreciate the predicament of universities in this area. One detects a general willingness to accommodate non-university interests wherever possible, and Patras provides public buses from city to campus to this end. However, if the prime functions of universities are to be considered as teaching and research, then dislocations to these may be considered unacceptable, with the best will in the world.
70. If universities may traditionally be regarded as bastions of free speech, then this may well involve the obligation to undertake constructive sound criticism as an element of regional cultural development. This may take several forms
- 70.1 the university may undertake a series of regional studies, the orientation and discussion of which may provide criticisms of regional interest and policy. Cork studies on Irish corporate accountancy practices, or health arrangements provide an important regional voice on national issues on a national stage, and raises awareness of regional expertise. Patras, UmeÅ and Minho display similar phenomena.
- 70.2 it may simply act as a broker/facilitator for regional topics to be discussed (Catania).
- 70.3 university staff may be active in local, regional or national legislatures, and may even be prominent critics - but as individuals, not in any corporate university sense (Kuopio). Further university positions can be put forth through memberships of particular societies.
- 70.4 in certain circumstances, the university may take an official line on a particular regional issue e.g. environmentalism, but this seems rare. Minho in fact, concedes it is notoriously silent in the press, and argues for a stronger role in this direction, through a newspaper of its own, or (Patras) through a TV channel.

There is clearly a balance to be struck between making forthright objective comment on matters regional, and offending regional political and other interest whose support is critical to the university. Hence, the preferred solution seems to be for the university to expect and allow social criticism to arise from research and individual staff interests, rather than have a substantive university policy or party line itself.

Universities in Peripheral Regions : Organisational Aspects of Cultural Engagement

71. Given what has already been discussed, it is evident that the engagement of universities with various regional cultural stakeholders operates at a number of levels within an without the university.

71.1 universally, the lowest and most active level of communication is between practising academics in faculties, and their counterparts in the external cultural professions. This must be the mainspring of creativity, and thus the role of universities should be to encourage and support consistent with mission and reasonable resources.

71.2 beyond this, several university units have an obvious regional cultural role, i.e. Centres of Continuing Education (Cork); Archaeological Units (Cork, Minho); the Snellman Institute (Kuopio); Faculty of Celtic Studies (Cork); university Foundations (Catania), with a particular role to serve regional interests and support financially where possible.

71.3 at university level, we see a reasonably sophisticated central focus in the Cultural Council (a Minho senate committee) which co-ordinates 6 cultural units in Braga, District Archives, Adult Education Unit, Archaeology Unit, Museum and Public Library. Patrasí Council of Cultural Development plays a similar role, but appears rather less managerial. Other universities do not go this far in corporate responsibility.

71.4 beyond the university, institutions take part in various regional cultural fora (Minho in the CONVIVIO, a Guimaraes cultural association), and other examples are evident.

Notwithstanding arrangements of all types are central to any cultural development activity, and network support is perhaps one of the university's most useful contributions.

72. Reference has already been made to the issue of funding regional cultural activities. The issues here seem to be

72.1 universities contribute by virtue of the fact they base fund the main academic units. Whether this base funding for teaching and research is sufficient for the community dimensions is doubtful.

72.2 municipalities and governments fund libraries and museums, and other facilities - as do universities. Whether this funding is in any way cross-referenced in any significant way is doubtful.

72.3 the combination of 71.1 and 71.2 may mean that in terms of public financial hardship, cultural study suffers twice.

- 72.4 the search for alternative additional funding becomes pressing : from charges to the public (Tromso); from subsidies from university Foundations; from private/corporate sponsorship (Cork and Toyota), from EU Regional Projects (Catania) or from public corporations (Tourist boards). All have strings attached, by they are different strings. However, the buoyancy of these sources clearly varies.

This would seem to be an important area of debate for the immediate future, given trends in public funds.

Universities in Regions of Concentration : Cultural Mission

73. Of the cases in this sample, there does seem to be variable attention to the regional role of the university in cultural development than in the other regional categories. Why this is, is not too clear. It may have something to do with the fact that, as traditional areas of population concentration over centuries, they do not, as a whole, see themselves as having to protect a culture, by their defensive or offensive strategies. There is a large cultural infrastructure already in place, built by various other providers, civic and private, and there are a range of other single purpose academies and conservatories which play lead roles in the cultural field, which in some cases may be suspicious of university expansion in this area. However, in VUB, there is a specific cultural strategy towards the free-thinking population of Brussels and Belgium. Also UPC Barcelona sees itself as playing a major role in strengthening Catalan regional values in art, traditions, democracy etc.
74. Thus, we find, as far as stated mission is concerned,
- 74.1 some have no explicit statements to be made (Torino).
- 74.2 others will adopt generalised statements about free enquiry and the popularisation of scientific knowledge which are not specific to any particular regional setting other than in the particular VUB case.
- 74.3 a commitment to assist in the open inter-cultural infrastructure of the region and the integration of different linguistic and ethnic groups. In VUB's case, this means a protection of the Flemish dimension, without compromising its positioning in the Brussels region. In UPC Barcelona, the university is much concerned with so-called Catalan linguistic normalisation through bilingualism in various domains, which is a mission about social cohesion.
- 74.4 in the particular case of Brussels, we see cultural development independent of religious authority (the source of the foundation of VUB).
- 74.5 we see a general desire to propagate an innovative and experimental culture, to avoid Elitism in favour of general integration of effort with others (VUB, UPC Barcelona).

Interestingly, some feel impelled to say that they are consciously striving to avoid a P.R. culture!

Universities in Regions of Concentration : Cultural Activities

75. As is the case generally, all the universities in the sample provide a whole range of normal degree courses in arts and humanities which are aimed at producing graduates able to

propagate civilised values, some of which address themes of regional history, archaeology, literature etc.

76. As far as non vocational continuing education is concerned, the popularisation of scientific knowledge and encouragement of free thinking is the mission, and to this end, VUB has set up an independent non-profit organisation UVP, in parallel with its professional continuing education areas IPAVUB, and subsidised VUB. Creative workshops in art, music photography are common, and aim at personal development, unconnected with any regional goal per se. A similar pattern is evident at UPC Barcelona with the creation of foundations and private centres to this end, especially in the training of Hispanists, socio-linguistics, art and design, anthropology etc. The Music and Art Academy at Graz is influential in local cultural development.
77. There again seems to be a general issue except for Rotterdam, that very few normal classes are open to the general public, no means of credit accumulation are possible, so that few financial or academic incentives are available to faculties. The cross walks between continuing education and mainstream education are thus very limited, and access is certainly not facilitates. Rotterdam's "Summer university" is strongly supported by the municipality.
78. However, there is certainly considerable evidence of very focused regional research, and studies. The trends in this area seem to be
 - 78.1 evolution of inter-disciplinary approaches from an original single discipline base. BRUT (Brussels Centre for Interdisciplinary Studies at VUB) originated in history, but moved into linguistics, socio-political, demographic and other themes. Torino's Centro Studi Piemontese, and the IRES (economic and social research) have similarly evolved. This focus on regionally relevant themes has clearly resulted in a stimulus to interdisciplinary activity, which may not otherwise have happened. The Brussels 2000 project is producing similar results. Rotterdam's faculties have a track record of regional research, with the post and company development being prime foci. UPC Barcelona has strong concentrations in business research; regional welfare; and income distribution; history of art etc.
 - 78.2 such centres also attract archives, thus establishing regional documentation centres.
 - 78.3 UPC Barcelona again provides an exception with its significant commitment to Barcelona 2004 Forum - a regional wide "culture for peace" vision. This is defined by UPC as a Cultural Provocation in which the authorities have engaged UPC to work on several projects till 2004 - Language and Communication, Urbanism, and the Virtual Forum.
79. The same range of cultural facilities exist in these institutions as elsewhere, but we can perceive more limitations in access and user security arrangements. Thus, whilst library and sports facilities may be open, borrowing is only permitted by staff and students and associated institutions in the former case; whilst non university personnel have to pay for services in the latter case. However, there does not seem to be much evidence of co-operation with other cultural providers (museums, art galleries etc.), and the Catalan universities are exceptions to the above in the open public access of university facilities.
80. As far as social criticism is concerned, there seems little in the way of formal institutional engagement or recognition. However, UPC bewails the loss of its capacity to generate passionate debates and radical actions to transform society - which was certainly a feature in its past life. Universities do put on public debates, and VUB has become involved in

attempts to save a prominent Flemish newspaper from bankruptcy. Other than these, no clear strategy is apparent, apart from Rotterdam's. With the Municipality, a long term public debate on the future of the region has been engaged - Rotterdam 2005, and the university's policy is to encourage its members to engage in critical public debate.

Universities in Regions of Concentration : Organisational Aspects of Cultural Engagement

81. The development of organisations to achieve cultural engagement seems restricted to
 - 81.1 orientation towards individual artists and performers by individual staff members.
 - 81.2 initiatives at departmental level.
 - 81.3 some specialist interdisciplinary regional centres (see para. 77).
 - 81.4 publicising the availability of space/halls for hire through the marketing/communications office.
 - 81.5 the provision of social, youth services, family support, psychological and legal assistance through VUB's Cultural Service and its various subunits.
 - 81.6 participation in various regional commissions for e.g. monuments and landscapes (VUB).
 - 81.7 internal publishing houses (VUB).
 - 81.8 Cultural Council at university level (VUB).
 - 81.9 specialist centres for non-vocational continuing education (Centre de Formacio Les Heures at UPC Barcelona).

However, the overall conclusion seems to be of a general lack of strategy; a management focus (a senior university officer) to search out and conclude cultural agreements; clear financial policies. In short, structural partnership are lacking, and a tendency to laissez faire prevails, with the exception of Barcelona.

Universities in Regions of Revival : Cultural Mission

82. These regions tend to be rather proud, and in this domain, the incidence of several long established universities in the region provides a very solid base from which cultural initiatives may be derived. As former bastions of heavy industry, there may even have been a strong tradition of adult working class education, often assisted/initiated by trades union movements. However, as we have observed, this working class commitment is countered by the relative poverty of these regions in recent years, and EU regional support has not generally had cultural development as strong a priority as economic development, as we shall see, and in former communist countries was certainly circumscribed.
83. Thus, as far as mission is concerned, the institutions in the sample present a varied picture.
 - 83.1 some (Szeged) see the role as tied up with so-called 'intellectual culture emanation' : the university as a repository of knowledge and information, and the potential means

of access through electronic means to a whole lot more. Cultural values are said to be those of local science and scientific business transmitted through staff and students.

- 83.2 St. Etienne sees the staff-student dimension as being central, and makes young people the focus of its cultural development policy.
- 83.3 Brno confesses to no explicit cultural strategy per se, but still professes a commitment to the cultural development of the region through a variety of activities. The absence of strategy is explained by substantial faculty autonomy and the reluctance of rectors to commit their successors.
- 83.4 Newcastle indicates that the living populist culture of its region is strongly centred on football, and that the region has the lowest participation in cultural events nationally. Where this leads in strategic terms is not clear.
- 83.5 Rostock emphasises it has a clear role in trying to develop crucial cultural values, partly emanating from the release from Soviet domination - the promotion of global awareness; removal of barriers between classes, races, nation and languages; the ability to resolve conflicts; the taking of rational ethical decisions and the exercise of self control. Assisting the process of European unification is a spur to this ethical mission.
- 83.6 Katowice sees its role as re-asserting the significance of arts, culture and tourism, in the face of a regional image described externally as rather uncultured.

Universities in Regions of Revival : Cultural Activities

- 84. In terms of non vocational degree courses, most regions seem well provided, which ostensibly, creates a strong civilising foundation, though this is partly compromised by the relatively low participation rate in some of the region, and the variable enrolments in these subjects. Only some of the newer universities in North East England provide some degree of open access to these programmes, by non-conventional students.

The existence of a wide variety of music academies, orchestras, fine arts academics clearly helps greatly (Katowice).

- 85. There is a wide variation in the provision of non vocational continuing education of various different kinds. The North East of England not only has mainstream universities with strong extra-mural departments, but also the Open University which has a sizeable presence in terms of relevant courses, delivery points for student support, and of course, distance learning. This open dimension is only replicated elsewhere in St. Etienne with over 2500 students p.a. in 13 centres in the Loire.

Other than these manifestations, we have the usual view of public lectures (Brno, Rostock, Newcastle) and annual conferences (St. Etienne), and Third Age developments which are generally embryonic.

- 86. In terms of music, art, drama etc., provision seems better with extensive live theatre (Newcastle), music (Rostock and Katowice) and arts festivals and jazz festivals (St. Etienne). St. Etienne's commitment to young people is demonstrated in the so-called Carnet Culture, which provides cheap access to cultural events through blocks of cheap tickets. There does

seem to be a clear difference between the regions of Western and Eastern Europe in respect of this whole area.

87. As far as regional research is concerned, Brno has a multi-disciplinary focus on South Moravia (arts, literature, music, history) and its Centre of Continuing Education publishes curricula on regional topics. Sunderland (N.E. England) has the National Glass Centre, whilst Szeged has acquired reasonable PHARE grants for regional research, the production of educational materials relating thereto, a regional data base, and various Europe Study Centres. Rostock is encouraging multi-disciplinary research on prevailing regional social problems, such as racism and neo-fascism. Compared with other types of region, the totality, however, seems rather small.

88. The question of access to university facilities by regional individuals and groups reveals quite a discrepancy in situations.

88.1 the Central European universities have an open access policy as far as libraries, botanical gardens, zoos, archives and documentation centres is concerned, with the limitation that items may not be borrowed or only on short term. Newcastle also reveals similar limitations in the case of library and sports facilities. Rostock has limited access to computing and communication systems laboratory facilities, but plays a major role in regional sports.

Some Central European universities would very much like to establish their own museums and art galleries, but these acquisitions clearly need financing. Rostock is nonetheless well advanced, through both university and external funding.

88.2 St. Etienne has an impressive computerised library network (BRISE) established by the city and its various higher education institutions, in order to make the collective library resources available to the public. This now constitutes 30 resource centres able to tap into the complete regional resource, which, in future, will also involve Lyon, by electronic means.

88.3 one reverse movement of interest is the practice amongst some faculties at Newcastle of sending their students to work in local prisons, and indeed on missions in European trouble spots : the university going to the community.

88.4 Katowice has a comprehensive programme of increasing access not only to its facilities but to those of the voivodship, in co-operation with local governments. This has involved a significant increase in library stocks, museum and gallery holdings, concerts, assistance to the artistic community, training of cultural specialists, the revision of the school curriculum, enhanced publicity, radio and video productions etc.

89. Regarding social criticism, there is little explicit evidence in the Western European cases to suggest any particular strategy at institutional level. One presumes it is regarded as a normal function of an university in a democracy, and that comments by faculties and their members are a normal organic process of engaging in the cut and thrust of community life.

In Szeged and Brno, a different orientation may be observed. Brno's explicit strategy is to be non political, though faculty are clearly active in social criticism, especially in fields of ecology and the law. The Janacek Academy (a separate organisation) is prominent in its public pronouncements. Szeged apparently walks a similar tightrope, and whilst active on PR, recognises the difference between this and cultural dialogue. Interestingly, it seems both

regional societies would welcome more public engagement by their universities, and this has been forthcoming, in part, through for example, anti-racist demonstrations. This element has been taken up with vigour by Rostock where the resurgence of neo-fascism has been a disturbing recent trend. The university sees public debates, publications, research and a strong PR presence as being essential to its mission in this area.

The tension for universities is evident in a post-communist society : they may well wish to stimulate social commentary by staff, but have some trepidation should this lead to lack of popular or civic support.

90. Only Katowice of this group stresses a priority to protect and promote places rich in historical interest - castles, palaces, monasteries, monuments of technology etc. A further focus for Katowice is the development of tourism, landscape parks and recreation, but the specific contribution of the university to this is not clear.

Universities in Regions of Revival : Aspects of Organisation and Financing

91. The issues discussed earlier convey the impression of a relatively lower level of formalised activity, especially by Central European Universities, in favour of devolved initiatives at faculty and individual levels, and limited central interventions. In this context, limited, but increasingly effective instruments can be identified.
 - 91.1 the role of university publishing houses is seen as positive as a means of making visible a great deal of regional cultural material. However, valuable though this is internally, we must question the actual publication levels, and who are the readers of the publications. Further analysis seems necessary here.
 - 91.2 University Foundations are seen as increasingly helpful in funding university arts activities direct; brokering discussions with external sponsors; and establishing contacts between departments and external organisations (arts, musicology and theatre in particular).
 - 91.3 organisations for direct provision of the arts by universities are always likely to be suspect in terms of long term financial security.
92. The above raises the core question of financial support, and solutions/approaches in other regional types may have resonance here. This category of institutions well demonstrate the issues of determining clearly the university's priorities in its cultural politics, and for each of these priorities, figuring out a coherent funding portfolio, in conjunction with other partners. As para. 71 demonstrates, uncoordinated regional funding of the arts is likely to produce very undesirable consequences. Here, St. Etienne is interesting, with its priorities based on young people, and recognising the declining state financial support for students per se. The response of St. Etienne has been to create several different, but interarching initiatives, including the Cultural Reserve Fund; the Carnet-Culture; assistance from the City authorities; 50% subsidy for university cultural events, and plans for creating large scale student facilities on campuses. This is a specific example, but it also demonstrate the virtues of a focused explicit policy.

Reflections

93. The following features stand out from this analysis

- 93.1 cultural development is a very broad arena in which universities may be active on a regional level. Much will clearly occur in very organic ways, in spite of an overt institutional strategy, and perhaps better without an institutional strategy in certain settings, when to take a particular line on cultural development may well cause unhelpful affiliation or identification with a particular group. In this event, the understandable inclination would be to opt out of cultural positions which could conceivably be politically difficult. In other settings, we see universities taking a courageous line in public criticism and public opinion formation.
- 93.2 this, of course, is not the totality of cultural development, and the various examples cited of artistic co-operation represent a sound framework against which universities may benchmark themselves. Access, of course, is a different thing from provision.
- 93.3 universities do traditionally stand for relatively secure values of free enquiry, free speech, democracy etc., admirably encapsulated in CREÍs Magna Carta, and similar documents. The translation of this into cultural policy remains an ongoing challenge.

E. REGIONAL ECONOMIC DEVELOPMENT

94. This is, of course, a critical area of interest of regional stakeholders of various types, government, enterprises and the EU, apart from the universities themselves. It raises big philosophical and practical questions for universities, relating to interaction
- 94.1 the extension of traditional domains of university mission.
 - 94.2 a differentiation between and synthesis of effort of university and corporate research laboratories.
 - 94.3 the development of an enterprise culture, mentality, and a range of processes to deliver market related tasks.
95. The basis of any successful research and technology transfer and continuing professional development is that
- 95.1 the university has high quality research and scholarly activity which has utility and commercial possibilities.
 - 95.2 there are potential partners in the industrial/business sector, who have development needs which can be facilitated by research and educational connections.
 - 95.3 there are specific organisational forms and processes which may facilitate the exchange, which may increase in complexity, the more sophisticated the setting.

We shall consider the evidence for the three categories in terms of

- i contextual factors
- i research and technology transfer
- i issues of policy and practice

Universities in Peripheral Regions : Contextual Factors

96. The role of universities in stimulating the economic development of peripheral regions is a formidable task given
- 96.1 the economic context. In the cases of Patras, Minho, Tromso, Catania and Aalborg, the character is one variously, of significant unemployment, de-industrialisation (Patras) or major shifts in the original base industries of say, agriculture and fishing, and some problems of attracting industry to distant locations. UmeÅ as a city is better news, but the region is not in good shape, when we encounter decline in construction, rationalisation, and changing views of the role of the public sector. Cork is in better shape, but partly because of external subsidy, especially from EU. Kuopio observes that as a region characterised by a high rates of primary production, its improvement in relative status is more evident in times of national recession, and vice-versa. Success overall seems to be dependent on the success of limited and local business initiatives.
 - 96.2 potential and actual stakeholders of the universities in these regions clearly see institutions playing a major role to redress the situation, through a synergistic

relationship with themselves. This is centred on the exploitation of a dynamic research environment for innovation and new business, as well as the attraction of inward investment, and the regeneration of existing industries, through new technology and business methods.

- 96.3 there is evidence that stakeholders are looking for an integrated capability in universities of continuing professional development, research and technology transfer in its various forms, and magnets for inward investment. Technology transfer implies a clear relationship between faculty research through to applied research in centres set up for this purpose, through to technology transfer in incubators, spin offs and joint companies. This is a sophisticated model in which some universities are not well developed : the interfaces with industry along the above spectrum are not in place. Implicitly, this constitutes the framework for a coherent strategy, which some (Tromsø, Umeå, Catania, Patras) admit is not yet developed.
- 96.4 it should be said that some universities (Aalborg) essentially seek co-operation from industry in state of the art areas, where this will obviously benefit academic research most. Thus, a mismatch of expectations needs to be clarified, if this is likely to pose a problem.
- 96.5 the discipline base of the University is clearly a critical factor in determining the scope, size and relevance of university assistance. Minho's School of Engineering formed the original base for technology transfer developments in the Ave Valley, and other disciplines have now joined the action. Umeå's main weakness is the scope of its science and technology provision, which clearly limits transfer processes. This is especially evident when Luleå University, its neighbour, is a technological university. On the other hand, we note the broadening of Cork's disciplinary base, very much in the light of regional opportunities : such flexibility is essential.
- 96.6 the governmental context is fundamental in many respects. Tapping EU regional funds is critical to the successful evolution of these regions ... and most are beneficiaries (as an Objective 1 Region in the case of Catania, for instance and as an Objective 1, 2 and 3 Region in the case of Kuopio). Extra EU support is seen as vital in re-inforcing the co-operation between university and regional partners (Kuopio). However, unstable regional government produces delays both in the submission of tenders and the spending of money (Catania). Where submissions are centralised nationally (Ireland is a single EU region), there do not seem to be appropriate mechanisms for co-ordinating sub-regional Irish bids (i.e. Cork and Munster), which is posed as a problem.
97. Many of the above factors are, of course, capable of resolution by dialogue and concerted action, to which the case studies are happily beginning to testify.

Universities in Peripheral Regions : Research and Technology Transfer

98. As far as peripheral regions are concerned, the conditions for research and technology transfer as outlined in para. 92 are found, but in varying degrees of development, which is not unexpected, given the base point from which most start.

99. The simplest transfer of research is really through the educational process, assuming teaching is based on state of the art research, and the right recipients are involved. The manifestations are thus
- 99.1 student industrial placements to undertake company research projects (small scale research) as part of a degree (Patras, Minho) together with a strong praxis element. An extension of this is companies hiring Ph.D. students for part of their time from the university to work on a project of joint interest (Minho).
 - 99.2 continuing education programmes aimed at senior practising managers and professionals, based on updating on latest research, conducted by faculties or by Professional Training Centres (Patras, Catania). This is perhaps surprisingly not strongly emphasised, since it is a cheap form of transfer, but few universities indicate any leadership role in this respect.
 - 99.3 direct communication between individuals/faculties and particular companies for specific projects e.g. Cork's small enterprise food sector programme; Umeå's department of space physics venture at Kiruna. Universities' concerns here are both legal and financial, and consequently ...
 - 99.4 the importance of an Industrial Liaison/Patents Office should be emphasised, both to ensure contracts are well costed and priced, and that intellectual property is protected (Patras, Minho). The function is organised in different settings, depending on the structure of local university administration.
 - 99.5 designated university research and development centres which are outside the faculty structures, with their own locations, staff and budgets. These are normally multi-disciplinary; interface strongly with the user communities; undertake research training and dissemination; attract considerable external income; assist departments apply for grants; and encourage spin-off companies. Cork has, for instance, the National Micro-electronics Centre; the National Food Biotechnology Centre; the Aqua Culture Development Centre. Aalborg has the Virtual Centre for Health Information; Minho the Innovation Relay Centre. These are clearly free from the normal routine of academic departments, and thus may focus on the market for research.
 - 99.6 incubator organisations, which may either be for spin-off companies from university faculties or for individuals in society with a bright scientific idea who need support in order to achieve lift-off (e.g. Minho's CAIEJ Incubator; Kuopio's Technology Centre; Umeå Innovation Centre). These are certainly SME specific, and generally hi-tech in nature. Catania's is in the experimental stage.
 - 99.7 joint venture companies with key large companies, who are science-intensive, where university and company have complementary roles and parallel stakes. Tromsø has the so-called NORUT Group Ltd. (a holding company with 5 subsidiaries, and an university 30% stakeholding), and also EISCAT (for high atmosphere research). Catania has similar ventures with SGS Thomson Micro-electronics, and is a member of several consortia for applied research e.g. with IBM (Archimedes); with micro-electronics companies (CORINNE); Catania Ricerche (European Relay Centre); Aalborg has a very strong development with Bosch in the telecommunications area, and Kuopio with Pharming Oy (an international pharmaceutical company).

99.8 more complex science and technology parks, which involve real estate, a whole supportive infrastructure, and normally encompasses incubator organisations. These are extremely demanding financially, and requires formidable backing from government, municipalities, ventures capital houses and large and small enterprises. Aalborgís is relatively mature (founded in 1980ís) with three large co-operating tenants. Those at Tromso and Minho are ambitious and proceeding satisfactorily. Patras suffers from poor local participation and limited facilities to date, but has a focus on SME. The connections with mainstream faculties seems difficult to maintain. Cataniaís interest in a science park is as a branch of the Palermo Science Park, which poses further issues.

There are thus a variety of mechanisms of stakeholder engagement in research and technology transfer. The choice of appropriate mechanisms needs to be carefully made.

Universities in Peripheral Regions : Issues of Policy and Practice

100. For this type of university, considerable care is needed in the determination of a clear strategy for development, a process, it is argued, which is best done in concert with stakeholders. It is an area which lends itself to incremental drift, until it becomes clear that a number of basic necessities have been overlooked or neglected (see para. 98). It is also an area in which delusions of grandeur can take off vertically and forms of co-operation may be entertained, which are rather too sophisticated and demanding for the setting itself. Whilst the base must be genuine academic expertise, its harnessing to the benefit of regional society is a different issue.

101. The range of policy issues emerging for attention may thus be categorised
- 101.1 defining the cluster of expertise within the university which are ripe for development in a regional context, Patras, for instance, identifies its front-runners as culture, tourism, Hi-tech, agriculture.
 - 101.2 the assembly of a range of regional interests pertinent to the areas defined : regional government, enterprises, finance houses etc. This presumes the university - the rectorate - has the tactical skills required. A Co-ordinating Council (Patras) seems a helpful way to proceed.
 - 101.3 SMEs appear very difficult to engage ... but these are the most numerous economic forms in such regions. They are uncertain about relations with universities, and generally are not interested so much in the R as the D in R and D, whilst universities tend to display the reverse (Umeå, Aalborg). Large companies thus tend to dominate work placement opportunities.
 - 101.4 the costs of providing such infrastructure are high; contract research probably does not contribute enough invisible overhead; and the state is reluctant to divert t and r basic grant to this domain (Cork). Some governments also put limits on university involvement with venture capitalists and share acquisition (Tromsø). Clear financial strategies are thus essential at an early stage.
 - 101.5 unilateral activity by staff/units, whilst commendable in some senses, can lead to general confusion and financial problems unless placed in a coherent policy frame and robust processes, such as an intellectual property, where staff are encouraged to put such work through formal process on the strength of additional personal earnings (Tromsø, Cork, Catania) i.e. clear transparent rules.

It is interesting that issues of marketing the university and co-operation with corporate laboratories are not directly identified as issues.

Universities in Regions of Concentration : Contextual Factors

102. The underlying assumptions made by universities in this category are not vastly different from others in general terms, but with some interesting nuances
- 102.1 the contribution of high quality research to economic development is an essential and legitimate 'third task' of the university.
 - 102.2 consequently, a main role of the university is to assist regional development agencies, and other organs capable of engaging in economic development.
 - 102.3 notwithstanding the commitment to economic development, this should not compromise the commitment of the university to research freely whatever is of academic interest.
 - 102.4 the university (according to stakeholders in VUB) should not be doing contract research where it is likely to be in competition with, and undercut private research laboratories.

- 102.5 there are discernible variations of emphasis. VUB, Rotterdam and UPC Barcelona are certainly at the proactive end of the spectrum, whereas Torino takes the view that research transfer is basically a 'fall out' from basic research. Taken to its logical conclusion, this would not seem to be augur well for partnership. This is not unconnected with the presence of a prevailing culture of stability and caution in the business world which may not helpfully stimulate universities in the desired direction.
- 102.6 international competition is seen as threatening, and thus the role of universities is to assist companies become innovative, outward looking and competitive. The international/inter-regional dimension thus figures strongly with this group. VUB's emphasis is on technology transfer, whereas Torino's is more concerned with research and teaching partnerships, and it is not clear how technology transfer would be assisted by international collaboration. Rotterdam certainly sees its international standing enriching, and being enriched by partner (the municipality) which is itself a major international player. The precise manifestations in this case and international conference/congress business, the inter-city network with Shanghai (CHERC), and the potential of significant international centres (the Rotterdam School of Management, and the European Institute for Comparative Urban Research). Similar desiderata exist with UPC Barcelona.

The above perspectives are indicative of the respective differences in the development of an entrepreneurial culture in the various institutions.

Universities in Regions of Concentration : Research and Technology Transfer

103. Institutions in this sample, are, of course, in different regional settings to those previously analysed, but significant variations may nonetheless be detected, based probably more on university mission, culture and national tradition, rather than location within a particular regional type. Thus, VUB and Erasmus display the organisational characteristics one would associate with a northern university, whilst the Torino approaches are not untypical of most Italian university settings. UPC Barcelona lies somewhere in between.
103. This is well illustrated in the approach to strategic alliances for research and technology transfer. Those of Torino are of the 'international agreement' character, and relatively unfocused. VUB, whilst declining the responsibility for forming such alliances, is nonetheless a big player in Technopol Brussels; the Flemish Institute for the Promotion of Scientific and Technological Research (IWT) (especially the SME Division), BRIA and BRUA (previously described); and Chambers of Commerce. These bodies emphasise the centrality of university centres of excellence in their own co-operative efforts, including both VUB and ULB in this assertion. Strategic alliances in densely concentrated areas would seem rather important to avoid unhelpful duplication or competition, and UPC Barcelona sees strategic alliances of chambers, enterprises, universities and finance houses as being critical to further development.
- Graz has capitalised on the establishment of an international Automotive Cluster of AV List GmbH and Steyr Daimler with Chrysler, and 100 vertically associated Austrian companies, through R and D projects primarily.
104. In terms of organisational focus, we see a similar recognition of evolving stages of complexity, i.e.

- 104.1 transfer through contract education, continuing professional development is moving promisingly Rotterdam (especially in business, science and environment) and at VUB through the IPAVUB, the Entrepreneurial Talent Corporation for developing micro-entrepreneurs (via Applied Economic Studies and Solvay), and to a lesser extent through the R and D Interface Cell.
- Related to this are internships in large companies and the use of enterprise staff as teachers and researchers (Rotterdam).
- 104.2 an organic ad hoc engagement commencing with individual researchers and faculties, (Torino, VUB, Rotterdam) supported by central services for patents licensing and intellectual property arrangements (VUB).
- 104.3 based on an identification of IP, the evolution of spin-off companies from within the university, glad to be clear of mainstream structures because of the lack of an enterprise mentality (VUB's R and D Interface Cell, and UPC's Technology Transfer Centre (CCT)).
- 104.4 ascending in complexity, the next stage would be an incubator type organisation - VUB's Innovation and Incubator Centre, with 15 companies; UPC Barcelona's Incubator at Terrassa). The crucial issue here seems to be to generate genuinely hi-tech companies. UPC's impressive record of 350 agreements only contains 30% hi-tech ventures, which implies a limited exploitation of university research capital.
- 104.5 science parks : VUB has 3 research parks, all outside the City boundary, and apparently subject to the criticism that the companies there are too bound to the university, and insufficiently joint with industry. The Barcelona Science and Technology Park has witnessed significant recent growth.
- 104.6 Technopol (described previously) VUB.
105. It should be observed that Torino's development has not progressed beyond point 105.2. VUB has not yet been able to develop joint companies with venture capital and the next steps include joint company development, much more of a marketing approach, rather than a reactive one, and electronic networking. Rotterdam reports on the 'brainpark' which has developed around the university, due to the attraction of other so-called 'knowledge institutes', but the university is not greatly involved in this 'brainpark'.

Universities in Regions of Concentration : Issues of Policy and Practice

106. The ability of an institution to pick up these possibilities is dependent at the very least on the extent of its problem-solving culture, the responsiveness of central administration and the existence of a powerful central policy committee, such as VUB's Committee for Industrial Policy and Services to Society. These factors are but variably found in the sample institutions.
107. This said, the main policy agendas and issues appearing are
- 107.1 defining the clusters of university research which lend themselves to research and technology transfer. VUB admits this has not occurred, and Torino has only advanced economics as a candidate, which is a narrow base. Rotterdam's

connections at project level seem the result of devolved decision taking, rather than strategic planning.

UPC is fully conscious of the vast efforts needed to filter processing ventures, provide guidance and feasibility studies, and secure purposive agreements with business start-up bodies.

107.2 a robust IP policy - VUB has one, Torino has not, and it is unclear where UPC stands.

107.3 the creation of financial strategies which will facilitate spin-offs and the means to finance joint companies. Here, engagement with start-up bodies, such as Barcelona Activa is critical.

107.4 developing a proper marketing strategy for research and technology transfer, based on the above. This is especially so in the case of SMEs, where Rotterdam concedes a big problem of engagement because of the 'non academic culture' of SMEs.

The counterpoint is the need for universities to develop an SME 'customer friendly' strategy.

107.5 developing an effective capacity for prising R and D money out of the EU - advancing these connections seems difficult all round.

107.6 developing a genuinely entrepreneurial culture within the university, and helping cautious academics and business people to be innovative.

108. The volume of activity in some of these institutions is clearly no guarantee that all the necessary systems and processes are in place.

Universities in Regions of Renewal : Contextual Factors

109. It will be apparent from preceding sections that whilst these regions have many common factors, there are significant differences between the samples of university clusters in Western and Central Europe, based not so much on the economic profile but on factors such as
- 109.1 previous membership of economic development power blocs : EU has clearly a better pedigree than COMECON in stimulating economic growth.
 - 109.2 the range, complexity and maturity of institutions within a given region.
 - 109.3 the fact that western universities have had large exposure to entrepreneurial stimuli than Central European counterparts, and have thus developed more advanced responses.
 - 109.4 the fact that in Central Europe, there are huge problems of spatial development, given the problem of old industrial plants, and of establishing ownership and the legal status of property, as a precursor to regional economic development.
 - 109.5 whether pre-conditions for sound development exist (co-location of higher education establishments, development conscious municipalities, venture capital, transport etc.) or whether they need to be created ab initio.
110. Bearing this in mind,
- 110.1 preparation for possible EU membership is an important driving force for universities to take aboard the notion of a mission for economic regeneration (Brno, Szeged, Rostock). To achieve necessary critical mass, a transnational consortium of 4 Hungarian, 4 Romanian and 1 university from the former Yugoslavia has been set up to facilitate composition within the said regions, including 3 large university cities (Szeged). Similarly, the so-called Katowice Agglomeration provides a strong pole for the development of national co-operation along the Krakow-Wroclaw axis - the 'Europolis' of Southern Poland. Agreements with French and German regions, and cross-border co-operations with Czechoslovakia confirm the existence of an embryonic Euro-region, with all that implies for inward investment.
 - 110.2 if the above is a concerted strategy to 'sell the region' for inward investment, the same is true on a much bigger scale in the West. Newcastle and North East's target is global as far as inward investment is concerned (TWEDCo, the publicity arm operates internationally).
 - 110.3 Central European universities have inherited a tradition of a limited discipline base, which hinders research and technology transfer and continuing professional development across a front too narrow to be hugely effective for emerging industry. Szeged itself lacked medicine, engineering and agriculture until the current merger. Brno has only recently set up economics, administration and informatics to meet market demand, but their mode of operation is still traditional rather than entrepreneurial. The humanities base is stronger. This is a market contrast to St. Etienne and North East of England.
 - 110.4 there is a widely recognised disparity between industrial needs in technology transfer and university capability in Central Europe, and much less so in Newcastle and

France, despite the absence in St. Etienne of the big French research organisations (only CNRS and INSERM are nearby) .

110.5 the upshot is of a more concerted explicit and detailed strategic framework in St. Etienne and Newcastle, and a host of public organisations and quangos with specific interests in regeneration, fuelled, it has to be said, by national and EU money.

We are thus talking of different levels of sophistication within an ostensibly common context, though Rostock is certainly much closer to Western models.

Universities in Regions of Renewal : Research and Technology Transfer

Given the above, we might usefully consider the forms of technology transfer in terms of the two groupings.

111. As far as Brno, Katowice and Szeged are concerned, the stage of development is an early one, characterised by

111.1 institutional groupings to establish a bigger, more multi-disciplinary resource base.

111.2 commissioning area marketing studies and discussions to ascertain precisely what the research needs of the predominantly SME economy are, and to identify appropriate investors, sponsors and financial backers.

111.3 pragmatically exploiting those faculties which are capable of being exploited. In Brno, only Medicine and Science and informatics offer immediate hope of progress in the scientific area, and a Medi-park is being developed, as an independent quality organisation, to try to stimulate biotechnology, biomedical and pharmaceutical work. In Szeged, agricultural biology is the early candidate. Katowice reports a problem where its R and D facilities have difficulty switching over to new clients from the traditional ones of metallurgy, mining and chemicals. The re-orientation to SME opportunities is a great challenge.

111.4 in continuing professional development and consultancy, law, economics and languages are the growth areas (Brno and Szeged) and marketing, finance and business management (Katowice). However, language assistance tends to be provided free, whilst the problem with law and business faculties is that staff wish to do private consultancy to supplement low salaries rather than turn it into the university. Innovative training programmes in those areas remain the priority.

111.5 joint companies and incubators are not well developed, though the establishment of the Medi-park in Brno and the industrial park in Szeged should facilitate both - in principle. Katowice has plans to set up two new Innovation and Technology Transfer Centres in Katowice and Gliwice, linked to academic faculties.

There is thus a very long way to go if the infrastructure is only in its infancy.

112. North East of England, St. Etienne and Rostock represent more advanced formulations :

112.1 in continuing professional development and base degree education, arrangements are organised precisely with economic regeneration in mind - not the case in the east. Thus, St. Etienne has a vast array of first degree studies in vocational areas, with

25% of all students engaged in industrial placements which are integral to the curriculum. These encompass some six optional formats, a wide range of co-operative education arrangements, apprenticeships, and a very innovative devices called 'Professional Experience Units'. Newcastle similarly indicates a wide range of sandwich and part-time courses particularly in the former polytechnics within the cluster.

- 112.2 continuing professional development is a major driving force across the whole range of programmes in specialised vocational areas, including short courses and degrees and diplomas at various levels. Continuing Education Departments (or equivalent) play a large role in marketing, course development and validation, course delivery, guidance and counselling, and shall ventures into distance education.
- 112.3 sophisticated attempts to provide a data-base of university expertise can be seen. HESIN (Newcastle) is defined as a 'Knowledge House', which brokers links between some 500 firms and university departments.
- 112.4 numerous R and D centres are apparent e.g. Newcastle's Centre for Innovation and Design, Durham's Regional Centre for Electro-Technology; Rostock's so-called Blue List Institutes (Oceanography; Tideless Coastal Systems; Biology and Animal Livestock; Baltic Sea Research); Rostock's so-called An-Institutes. All these are typified as units with legal or semi-legal status, budget centres, with administrative flexibility, co-operative arrangements with industrial partners. The An-Institutes have Chair and Institute Director appointed from university and industry, an interesting partnership.
- 112.5 St. Etienne has 25 research teams linked to the regional development research base, with particularly an impressive infrastructure complex in Optics.
- 112.6 St. Etienne has also well developed regional networks which undertake research, advanced training and research transfer to user organisations - the Economic Intelligence Network; the Rhone-Alpes Network; and the South East Technological Network which supervises the Technopolis.
- 112.7 cross-representations on boards are a common feature.

The contrasts are clear to see, but thoroughly explicable in terms of the factors in paras. 109 and 110.

Universities in Regions of Renewal : Issues of Policy and Practice

- 113. Despite the differences in the two poles, common troublesome areas can be detected
 - 113.1 the design and maintenance of an adequate and current data-base is a major problem, quite apart from actually using it to engineer connections.
 - 113.2 there are considerable shortages of university staff who are comfortable and expert in working in entrepreneurial settings. Excellent researchers may not make good managers and company directors.
 - 113.3 the tradition of staff undertaking private consultancy is not confined to the east, though low salaries are very much a contributory cause there. Consequently, this

creates problems in terms of marketing consultancy expertise at faculty level, and also provides significant income loss to the university. Professional ethics may be in question.

- 113.4 this is not unconnected with intellectual property rights and patenting - hence the need for robust codes and an effective I.P. office.
- 113.5 the significance of foreign investment should not be underestimated both in terms of new industry and overseas Banks. This linked with special economic status, is an important catalyst, and a crucial pole for universities to grow themselves. The combination of these factors is more evident here than in the other regional types.
- 114. The particularities of the problems of this type of region are apparent. Nonetheless, so is evidence of a developing conventional wisdom of how they should be approached.

Interestingly, the cases here contain much more detail of extra-university initiatives than the other regional types, which perhaps reflects the historical insularity of several of these institutions, as well as the current realisation that the future of university research is inextricably linked with the economic development of the region.

Reflections

115. The character of the regional setting is clearly of fundamental importance as far as this domain is concerned, in terms of

115.1 historic situations in economic health or poverty.

115.2 the buoyancy and growth potential of the economy.

115.3 the extent to which the region qualifies for external assistance.

115.4 the economic make-up in terms of the company disposition of multi-nationals, large nationals, large regionals, and SMEís.

These clearly influence the possibilities of stakeholders-university collaboration.

116. It is certainly possible to trace different stages in the complexity of organisational focus and processes related to regional economic generation, and different stages require focus of the appropriate purpose and complexity - which in some cases, must be relatively simple.

117. The role of governments at various levels is crucial as a brokering agency, pump-priming agency and as a agency to synthesis regional policy - including the EC.

118. SMEís constitute the greatest challenge, in terms of

118.1 identification.

118.2 assessment of need and growth potential.

118.3 delivery of the right service at the right level.

118.4 achieving a real dialogue with the SMEís themselves, rather than through a surrogate agency.

there is a general consensus that much work needs to be done on this.

119. To deliver a good service, the case is overwhelming for inter-institutional collaboration, given the discipline-mix variations amongst institutions; the need to access expert know-how from all relevant sources; and the desirability of minimising wasteful competition. Governments and EC have a role in brokering such co-operation.

F. REGIONAL ECONOMIC IMPACT

120. This is a domain which, of course, is very closely related to the others discussed in this paper, and is a difficult one to pin down. It is based on the premise that universities, by reason of their very existence, are bound to have a significant economic consequence for the regions in which they are located, quite apart from the services which they render to students, the research community at large, and employing organisations. The political act of establishing a university in the region is often done with reference to the expectations of the economic benefits it will bring - hence the competition for government designations. These benefits are likely to flow to a large extent based on the size of the university, which may only be partly influenced by the academic merits of the university. It is clear from the evidence on the cases, that the factors of

120.1 international profile

120.2 discipline mix

120.3 perceptions of regional potential

120.4 entrepreneurial leadership

will play a part in determining the directions and content of impact.

121. Impact is perceived to be at two levels :

121.1 direct impact - economic effects generated through earned income, employment of staff and deployment of students, procurement of goods and services, building projects and students consumption etc.

121.2 indirect impact - demands created in local production, local jobs, tax revenues etc.

Measuring these impacts is a difficult process, and the case studies are extremely variable in whether and how they attempt measurement. The principal method which could be used is that of an economic multiplier which relates the direct expenditure of the university to secondary expenditure on the indirect items mentioned above. This could be used to assess university impact in for example, employment, by adding to direct university costs, an estimate of additional jobs created or maintained in meeting university demand through locally produced or delivered goods and services. This input - output - expenditure model is not easy to apply, and needs to be discounted to take account of 'leakages' due to factors outside the region, such as student and staff origins and mobility.

With these background points in mind, let us now consider the evidence in the cases.

Regional Economic Impact : Peripheral Regions

122. The context may briefly be summarised thus : the regions have a clear need to stem the flow or potential flow out outward migration of jobs; to induce migration of organisations and jobs into the regions and thus to contribute to inward investment and increased prosperity.

123. On the whole, universities in this category do not seem to have explicit strategies for contributing to regional economic impact, in the terms described above. Some make the

point that this is essentially an organic process, in which the university has multiple effects on its region with a wide range of partners, and that there are very definite limits to which planning can be useful. Others (Catania, Aalborg) are of the view that such impact may well be forecast in policy terms; is not yet measured, but really should be. They offer perceptions of the economic impact, which is certainly a helpful start. Others (Cork, Kuopio, Tromso) have undertaken studies of various kinds, which have demonstrated, however imperfectly methodologically, as they concede, that the university does make a major economic contribution.

- 123.1 The study undertaken by the Department of Economics at Cork is a sophisticated exercise based on the six centres of the province of Munster, using a variety of data from various sources, public and private. The resultant multipliers derived are 2.25 (output); 1.69 (income) and 2.4 (expenditure), giving an employment impact of 4,000 jobs plus.
- 123.2 Kuopio's cashflow analysis demonstrates from 1993-96, a direct impact increase of 182 - 207m. FIM; an indirect increase of 282 - 322m. FIM; and a job increase of 600 - 660.
- 123.3 Tromso's research project demonstrates 1968-1997 negative net migration; a population increase in the town of 35,000 - 57,000; and significant expenditure impact.

The few studies to date are thus encouraging evidence of a positive impact, which, as Cork observes, is actually rather important to counteract public misunderstandings and to use as a instrument in planning applications for land development and public relations generally.

- 124. There appears to be common ground in terms of the successful elements in regional economic impact.
 - 124.1 in most cases, the university would seem to be amongst the very largest employers in the region, if not the largest (Cork, Aalborg, Patras, Tromso, Catania). Where a University Hospital exists (Catania, Tromso) the effect is considerably greater.
 - 124.2 in some cases, the university has deliberately located a section of its activity in a particularly geographic location to stimulate the local economy (Catania has devolved its agricultural studies and tourism to Ragusa and Caltagirone. Its architectural faculty opens in Syracuse, and the provision of courses in the same city is envisaged as a source of local revenue).
 - 124.3 the effect on the built environment is considerable. Universities play a significant role in some cases in the restoration and re-use of historic buildings (Catania) assisted by the Social Urban Programme and EU funds. University expansion itself creates major construction projects (Tromso, Cork). The development of out of town campuses creates a residential growth of suburbs and small enterprise, in the intervening belt (Patras, Tromso) which may owe a great deal to the water, waste disposal and transportation services of the university. This may be linked to a university role in ecology and environmental protection (Aalborg).
 - 124.4 the development of conference facilities has considerable spin-offs for hotels, accommodation, leisure, sports, entertainments (Cork, Patras).

- 124.5 evidence is growing of the pull exerted by the university in terms of research capability, through research transfer, organisations, inward investment of small enterprises, innovation companies etc. (Patras, Cork, Aalborg), especially in areas like IT, biotechnology, bio-medicine etc. This is also associated with student employment, especially where enterprise creation is a central element in mission (Aalborg, Kuopio). This is, of course, dependent on the university's discipline mix, and Catania's slower development in this respect compared to Kuopio, Tromso, Cork and Umeå may be partly explained thus. However, Umeå raises the caveat about over-dependence on the public sector.
125. All cases subscribe to the need for more explicit strategy for regional economic impact, and carefully constructed ongoing studies of impact. The permanent involvement of universities in local and regional planning is thus a key requirement. Whilst university based committees are helpful for developing internal preferences (Tromso), they have distinct limitations in terms of engaging the local political committees. Impact studies also must not be underestimated as a tool of university public relations and image building.

Regional Economic Impact : Regions of Concentration

126. The universities in this sample do not appear to have evolved specific positions in this domain as defined by the parameters outlined in paras. 113-114. The main thrust of the responses is to relate economic impact to the university's provision of services in the fields of human resource development and regional economic development through research and technology transfer. Perhaps this is not entirely unexpected given the character of the region since
- 126.1 the various cases, there are many more significant economic players in terms of large enterprises.
- 126.2 the municipal governments of the major metropoli may well play a more major role vis - vis universities than is the case in peripheral regions.
- 126.3 universities in these regions may be managerially less cohesive and, thus, not so well equipped to evolve strategic responses to questions of impact, in terms of the elements defined in paras. 113-114. Consequently, the level of awareness of issues may be lower.
- 126.4 it may be that universities view impact as obvious!
127. It thus transpires that little evidence of explicit strategies is forthcoming. Brussels and Torino describe the strong interests and expectations of regional partners, and the desire to increase mutual awareness, and both Brussels and Rotterdam indicate some evidence of activity, but in no case is there evidence of detailed studies of economic impact. Rotterdam sees itself as having no major role in inward investment, though it is happy to respond to municipality initiatives.
128. As far as the specific elements of impact are concerned, the following appears to be the situation.
- 128.1 it is recognised that strategic alliances and partnerships are the key to progress. VUB quotes the extension of the service function through its Technopol, BRIA and InduTec partnership organisations. This point is reinforced by Graz (which stresses the value of COMETT II, its local successors (APS) and the European Training Partnerships in stimulating the regional economic of Styria) and Torino, through its investment in research and innovation transfer (RIT).
- 128.2 in terms of employment, the universities represented in the sample are all large employers. VUB (11,000 employees) is the largest in Flemish Brussels, and claims 20,000 people indirectly connected with the university. Regional partners quote further examples of personnel residing in Brussels because of the link, but this is in the absence of a systematic study. Rotterdam cites the large student population in its secondary role of generating/consuming part-time jobs.
- Rotterdam is nonetheless concerned that more graduates do not stay in the region for jobs.
- 128.3 as far as inward investment is concerned, VUB's Research Cell concedes little evidence is available. Rotterdam cites the 'brainpark' as an important focus, and the 'knowledge harbour' is warmly supported by the business community, though statistical evidence is not clear.

- 128.4 the general contribution to general tourism seems small, other than access to some historic buildings (VUB), but as far as urban (business) tourism is concerned, Chambers of Commerce and universities, amongst others, co-operate on conventions and congresses. Given the character of the regions, much of this is international, and greatly assisted by the presence of international university institutes - management Schools (Torino, Rotterdam) urban research (Rotterdam) etc.
- 128.5 little information is available on spending patterns, though it is assumed this is mainly confined to areas adjacent to the university.
- 128.6 regarding the built environment, there is evidence of renovations of historic buildings (the Arsenal in VUB), libraries and museums (Barcelona), and the extension of campuses (Rotterdam, VUB) which demonstrates positive co-operation with regional and city governments and development agencies. The knock-on consequences for the acquisition of housing for student accommodation are also apparent. Rotterdam cites the Axis (West to East), on which line all HEIs have been built to spread access and opportunity, but indirectly, this does distribute economic spin-offs from the higher education sector.
- 128.7 whilst there is no quantitative evidence, the international status of the universities in this category is clearly seen by all stakeholders as a major potential contribution. Torino outlines its various international connections without indicating with any precision what the ramifications for economic impact are. Rotterdam is quite certain that its international partnerships, strongly supported by the City - and vice versa - is a key to further economic impact.
129. The general conclusion, therefore, for the universities in this region is that, in terms of regional economic impact, hardly any interconnections of explicit policy exist with regional partners, other than on broad international declarations of intent, and the stimulation of spin-offs and competencies. A discussion council - socio-economic forum is seen by VUB as a way forward, comprising all community partners. The content of the policy is seen very much as those elements in paras. 113-114.

Regional Economic Impact : Regions of Revival

130. The character of this type of region has been examined elsewhere, but in this context, the main factors are : decay of large traditional industry; emerging SME and multi-national interests; heavy structural unemployment; a transitional dependence on public support expenditure; an opening up to global competition; and a big drive for inward investment to stabilise and reverse labour migration. Regional economic transformation is the name of the game.
131. Expectations of universities by regional partners seem to vary : in most cases, expectations in terms of human resource development are high (see Section C) and similarly in terms of research and technology transfer and innovation (see Section E) with the exception of these universities (Brno), whose discipline base is not so currently relevant. Most institutions in this sample indeed see their main contribution to regional economic impact coming from the provision of facilitators to inward investment e.g.
- 131.1 the North East of England sees itself in the context of global competition in attracting US, European and Japanese firms (Nissan, Siemens) and the provision of well

trained and adaptable manpower is seen as more important in this process than financial incentives.

- 131.2 Rostock, Katowice and Newcastle see the provision of innovation R and D instruments (technology transfer centres, high-tech centres, Know How and Technology Transfer incubators etc.).
- 131.3 Katowice and Newcastle cite manager development in the public and private sectors.
132. The obligation on universities with their partners to 'sell' the region is of a different order to the other categories of region discussed, and places a considerable responsibility on investors to co-operate - rather than compete - for the greater good of the region. One can detect varying degrees of success in this process. In Szeged, the tri-national regional cross-border co-operation in the Duma-Maros-Tisza zone (Hungary, Romania, 'old Yugoslavia' where Szeged has a co-ordinating role seems most promising. In the North East of England, various environmental factors still stimulate competition and unilateral action. How this inbuilt tension is resolved is an ongoing issue.
133. As far as the various elements in Regional Economic Impact are concerned, we do not see evidence in the cases of detailed economic multiplier studies. Nonetheless, evidence of impact is strong.
- 133.1 again, universities seem to be amongst the biggest employers in their regions. Rostock quotes 5,200 direct employees and a further 1,300 indirect employees. St. Etienne quotes a similar phenomenon, emphasising also the added significance of part-time staff, outsourced functions (cleaning, security etc.), business activities linked to the university (computing, technology transfer).
- 133.2 student purchasing power is reckoned to be a major benefit to local communities, especially in downtown areas where other commerce may be failing.
- 133.3 property investment is considerable and growing (St. Etienne - FF.27m.p.a.), whilst Brno reports that its dynamic investment policies, funded by the State contribute greatly to the region's construction industry and impact considerably upon the preservation of the architectural heritage.
- 133.4 a growing impact is the massive university commitment to the purchase of computing/IT facilities and associated issues of installation and maintenance (St. Etienne). Similar tendencies may be observed with health care (Rostock).
- 133.5 an aggregate of all the various expenditure types has been calculated by St. Etienne as well over FF 1,310 billion p.a.
134. In regions which are very susceptible to fluctuations in economic performance in a transitional re-building stage, this level of injection of purchasing power by universities is a major stabilising force, all the more significant in that the regional system of production tends to distort national economic fluctuations more than elsewhere. This effect is not as pronounced in the other regional types, and it can be said to alleviate and contain the effects of outward migration.
135. However, there are some areas of regional economic impact in terms of inward investment to which universities are not apparently contributing greatly, though there may be some background effect. These, may include professional services to investors, venture capital funding, regional assistance and consultancy in terms of strategy, marketing and finance (Katowice). It is a legitimate area of debate as to whether these services are a proper part of

institutional mission; whether these are best left to others; or whether there is scope for co-operation.

136. There is general agreement that there is considerable scope for improvement in the regional dialogue on university regional economic impact, defined as in paras. 113-114. There seems to be a series of instruments emerging to progress matters on technology transfer and SME development (Rostock is considering a Technology Foundation; the North East has a series of mechanisms) . This is clearly not just a matter for the institution, since it involves planning authorities and economic development agencies at various levels. To this, we return later.

Reflections

137. This is an area of regional activity, which the cases in general, find most difficult to pin down and demonstrate success. There is variable understanding of the concept; very definite limitations in the application of analytical technique; and consequently, a shortage of data to demonstrate the value of universities to the regional economy. This is clearly an area where universities could exchange a great deal of good practice.
138. Universities, it seems, can be an important factor in inward investment, which does necessitate their becoming part of a sophisticated campaign for regional marketing as several cases demonstrate, especially in terms of the attraction of international investment. How universities gear themselves up for this is another matter, as is the question of how investment agencies recognise university resource as a factor in their enterprise.

G. COMMUNICATIONS

139. The underlying assumptions of this section are that the interactions and dialogue between the various regional partners depends on the existence and refinement of good communication patterns and networks. As has already been indicated, these may operate at various levels, i.e.
- 139.1 political dialogue between the chief officers, leading politicians and managers of the various agencies needs to be purposive, creative and innovative, and such networking will often be informal, relatively invisible to the public eye, and may rely heavily on personal chemistry, as well as organisational agendas.
 - 139.2 structural dialogue may be facilitated by permanent or ad hoc organisations comprising membership from across the various constitutions and focused on particular domains of community university interaction, such as technology transfer, physical development etc.
 - 139.3 mechanisms for the exchange of information which rely more on the technologies of information flow and access, which, of course, are becoming increasingly electronically based, and open up wide interactive possibilities way beyond the region.
- The last-named is the focus of this section.
140. There would seem to be at least three dimensions of the communication/information strategic role of the university.
- 140.1 the university develops its own internal capability in communication/IT which it uses to advance its own cause in the regional and other markets - internal teaching, research, administration and marketing systems etc.
 - 140.2 the university, through its research, R and D, training and consultancy capability, helps other regional players to develop their own IT competencies - enterprises, public bodies, other institutions etc.
 - 140.3 the university, because of its position and expertise vis a vis other players, may well act as a co-ordinator/principal facilitator of a regional information network which involve relevant partners in a continuous process of information access and exchange. Here, the priority is for systems which are flexible, interactive, accessible, and, of course, related to the fundamental purposes of the regional network. This role may be sought by universities, or ascribed to it by government or the partners themselves, depending on the nature of the relationship and the perceived expertise of the university.
141. The role which a particular university may adopt is the result of a combination of several factors e.g.
- 141.1 the state of development and health of the partnership.
 - 141.2 the existence or otherwise, of other expert regional partners, some of whom may be technically very sophisticated, and in the IT market for profit.

- 141.3 the perceived expertise of the university - hence the importance of having sorted out its internal capability first.
 - 141.4 the mission of the university and whether it sees this role as a profit enterprise for itself or service to the regional community.
 - 141.5 tactical considerations for the university : is it prepared to act as a pioneer in the development phase, and bow out of a leadership role subsequently?
142. In short, there is a difference between a regional communications and information strategy, and a university system acting in a regional setting. We should finally, not forget that the technology opens up global possibilities of a positive and negative nature.

Universities in Peripheral Regions

143. There is general agreement on the need for a regional communications and IT strategy, though the precise orientations differ considerably.
- 143.1 Minho's view that it makes no sense for the university to build up the independent network with private operators already in business, and thus the university should be a participant rather than a leader, though this might change with its projected Science and Technology Park.
 - 143.2 Aalborg and Kuopio see huge advantage in using such a network to sell the region on Internet and WWW in the global village to the benefit of the university (student inflows, research) and the economy (inward investment).
 - 143.3 Cork and Catania see the development initiative as highly important for regional economic development, with agreements with regional authorities on investment, training, and the evolution of a centre of national excellence (Cork). However, this is not of itself the model outlined in 131.3, since apparently various players are missing from the table - notably chambers of commerce and some key enterprises.
 - 143.4 Tromsø, Patras and Kuopio indicate progressive development of internal capability over the last decade or so, through optical fibre networks, video conferencing, internet and www operations, and regional leadership roles have been ascribed through governmental designation (Tromsø and the so-called UNINETT national project).

The character of these regions - peripheral location; space; population distribution, often slow land communication - lends itself to electronic communication.

144. Regarding the scope of a regional communications/IT strategy, it appears that
- 144.1 primary and secondary schools are becoming progressively tuned into the Internet and regional university information for educational and admission purposes (Patras, Minho, Catania (in future)).
 - 144.2 student courses are increasingly available on the media (Cork, Catania, Kuopio), but the full potential in terms of systematic distance learning, access, and co-operative education is still a long way from realisation. Experimentation is thus needed.

- 144.3 researchers in universities and consumers of research in enterprises are tied into Internet. Metropolitan Area Networks (MAN) etc.
- 144.4 enterprises are able to use the networks for accessing information; advertising their products and services, and searching for markets and suppliers, which is held by Minho and Kuopio to be highly advantageous in terms of innovation, time to market etc. The virtual reality enterprise and laboratory is clearly with us (Minho, UmeÅ).
- 144.5 the electronic Library is seen as vital in all respects - research, student activity, access to the general public and enterprises (Kuopio, Tromso). The Kuopio Library in fact functions also as the Northern Savo (region) Information Service Centre and as an Electronic Journal Collection site on www, with particular agreements with Elsevier and Springer-Verlag - the virtual library.
- 144.6 the potential for radio education is also evident (Kuopio's Radio Kantti), which is of great regional significance in education, employment, job placement and internationalism.
145. The policy and operational ramifications of course are considerable. These may be summarised thus
- 145.1 the demands on university staff are considerable in terms of system development, curriculum reform and delivery, standardisation of processes etc. (Cork), which places a premium on staff development.
- 145.2 expectations and pressures to develop cannot be delivered by incremental growth, but requires substantial immediate investment (Cork).
- 145.3 the creation of interactive networks and interlocking data bases creates problems of accessibility, confidentiality and intellectual property safeguards.
- 145.4 whilst the technology permits extra-regional marketing for business etc. it also permits extra regional universities and companies to penetrate the region, which could be conceived as a source of unwelcome competition.
- 145.5 at present, it appears that the take up and involvement of regional interests and enterprises in both provider and consumer terms is still relatively small. This is partly a function of the newness of the development, but their engagement is clearly

own purpose in teaching, research, administration, library/resource bases, and marketing for student recruitment through Internet/www. They all assist other agencies to develop capabilities through the aegis of advice, consultancy, hardware and software development through IT and Computing Centres and departments; learning resource centres, and medium-type operations, and of course, through the training of IT specialists. UPC here emphasises its role as a test bed for experiments being conveyed to Catalan Society. This includes a wide range of Internet based projects, developed with councils, enterprises and other educational establishments; integration of services for the Barcelona City Council; the Epithelium project (EU funded) for building civic networks; and Internet provision for SMEs.

147. However, of particular interest is the third dimension - the university as brokers of a regional consortium of interests, which is probably better developed than in the case of peripheral regions. Why this is so, is not altogether clear, but it might be explained by

147.1 the larger concentration of higher education institutes in a smaller area.

147.2 the immediate presence of national and large regional television and telecommunications interests (Torino, Brussels, Barcelona).

147.3 the more formalised organisational settings for co-operation.

147.4 the more intrusive role of ministries in urging and facilitating co-operation and the reconciliation and integration of systems, through national public subsidies (Brussels, Rotterdam) or through city governments (Torino, Brussels, Barcelona). Torino has set up a City sponsored Steering Committee for new IT in the University. Brussels, VUB and ULB are co-operating on the Brussels 2000 project, whilst UCP is a major player in Barcelona Forum 2004.

147.5 universities playing a proactive role leading policy development amongst the various influential groups (UCP Barcelona).

148. The manifestations of progress so far seem to be thus

148.1 use of Internet/WWW for student marketing and recruitment.

148.2 use of IT for teaching and learning, home-based education and tele-learning of an individualised nature (Brussels, UPC Barcelona, Graz and Torino). Torino is planning for a third public TV channel for didactic purposes and the transmission of courses.

148.3 use of electronic innovations for R and D purposes, especially involving liaison organisations (such as Technopol, Regional Investment Agency, BRIA, BRDA, InduTec in Brussels) and ministry agencies (Division of Competitiveness (Brussels)).

UCP sees one of its main priorities in terms of 'the Scientific Ring', a network linking scientists in all universities for dissemination of results and collaborative research. This is only a starting point to the linkage of the universities with their science customers, and the creation of territorial technology centres is seen as a main investment for this ('virtual laboratories').

- 148.4 use of IT for administrative connections between university R and D and stakeholders (Brussels Linc Mail - which will eventually connect with the university's accounting data base).
- 148.5 library and learning resource connections : in Brussels, the VUBIS system connects the libraries of VUB, ULB and the City electronically, and a similar provision exists in Barcelona.
- 148.6 educational networks : university liaison. Educabler in Rotterdam provides a service for primary and secondary students and teachers, from the university, whilst Ro Plein (Rotterdam Education Square) connects and co-ordinates all Internet/www offerings from educational institutions. UCP Barcelona is active in Internet based work on teleteaching with schools, a virtual University, and the preparation of teaching materials.
- 148.7 regional consortia for developing consistent IT standards are participating organisations (Consorzio Sistemi Informativi in Torino).
149. In short, much of the infrastructure has been conceived and created. The big task now is to develop operational policies and procedures. What remains unclear is whether the perceptions of the core universities all shared by the full range of partners, governmental, educational and business.

The other big issue, well developed by UPC Barcelona, is the challenge which the Internet poses to the university both in terms of creating a different pedagogy for its own staff and students, and also in terms of the fact it enables private organisations, companies and other universities to enter this domain. The monopoly of universities is thus over, and the opportunities and threats posed by the Internet are seen as needing urgent attention.

A further issue is the extent to which Internet will bring in influences which will weaken the cultural identity of these regions. This may not be a common issue to all - in Catalunya it is likely it will be.

Universities in Regions of Revival

150. The character of these regions historically does seem to have had an effect on the extent of progress in this domain. Several of the cases from Central Europe reveal historical underinvestment in information technology, which is only recently being addressed. Universities in these areas have often been traditional academics with no great track record in innovation with industry, and internally, they have been very loose federations of departments. The Western cases also reveal inter-university competitiveness within the region. These factors, when added to the inherent regional economic problems clearly pose a big challenge in the domain of co-operation in communications/information strategies.
151. In terms of the three strategic roles postulated in para. 131, a diverse picture thus emerges. Brno describes a position where the university has a very limited brokerage role in the region in this domain, and to date has been principally concerned within its own public relations - informing the public in a non-targeted way about the university. A similar pattern has been discernible in Szeged whilst the North East of England's various universities have their own individual connections with the various publics for research, innovation and teaching, but in an apparently non co-ordinated manner.
152. St. Etienne and Katowice are much further along the spectrum in the sense that there is considerable inter-institutional collaboration in the promotion of the region's academic and intellectual expertise. Thus, St. Etienne has both formal and informal networks of institutions where in the so-called PUSE alliance, each partner is responsible for promoting the others as well as the regional capability. Katowice has set up Local Area Networks connected to the global Internet e.g. the Academic Network of Silesia connects all the academic and research establishments, and is planning the development of two new super computers at Gliwice and Katowice. However, all the above, whilst their are examples of inter-institutional co-operation, do not involve regional economic or educational partners to any meaningful degree.
153. The only example of an university actively leading/brokering collaborative developments with regional partners is Rostock. The distinguishing factor here appears to be the region's efficient data-communication system, held to be the most advanced in Germany, where the costs to the university are borne by the Federal Government, and other regional partners subscribe on a less than commercial costs basis. This model thus involves universities and other educational establishments, enterprises, other ministries, research organisations, local government and publishing houses. Such external stimulus and subsidy is rather important, and the growing interest of the Hungarian Telecommunications organisation in Szeged suggests a similar avenue of development.
154. In terms of the manifestations of communications/information strategy, therefore, the picture is variable
- 154.1 there is fairly common use of traditional P.R. mechanisms across all universities, using newspapers, targeted and untargeted circulations to regional users, schools etc. (Brno, North East of England, St. Etienne, Katowice, Rostock, Szeged|but most of this is disseminating information about the university, collecting it and developing the institution's corporate image.
- 154.2 this, whilst traditionally done by P.R. departments, is gradually moving to the Internet (Brno, Szeged, St. Etienne, North East of England), and targeted to specific users.

- 154.3 library/information resources are certainly becoming electronically linked, in terms of cataloguing but access to regional users seems a challenge for the future (Brno, Newcastle).
- 154.4 there seems to be a general need for information bases on the graduate labour market (Newcastle).
- 154.5 progress is reported in Rostock on the development of technical data bases (SWING) and access by enterprises to this and universities to both this and the so-called B-Win data base. Such mechanisms of this kind are clearly vital to the process of economic regeneration which is the key problem of this type of region. It has brokered the setting up of a Scientific Association amongst partners to develop and apply modern computer technology in terms of technical, pedagogic and legal issues. Newcastle sees this as a priority in harnessing the combined efforts of universities and their regional partners.
- 154.6 it is in the field of the Learning Society (Rostock) where the greatest diversity of approach and intent is apparent. The universities in the North East of England are very active in various dimensions of lifelong learning, co-operative education and self development approaches, but recognise they are in very early stages in utilising technology to these ends. Rostock also sees its main priorities in expanding access in a flexible manner; the design of credit-based, outcome specific modules; co-operative education with partners; differentiated needs analysis; targeted provision etc. All Rostock's developments in this field are predicated on the work being done by the regional partnership.
155. We thus have considerable variation in this type of region. A number of important considerations emerge
- 155.1 such developments in communication/information networking seem critical to the regions' efforts in stimulating economic renewal.
- 155.2 the role of excellent Computer Centres or Institutes of Telecommunications within universities is a valuable resource in stimulating and sustaining such developments. However, they do have other roles to play, which may create tensions within the university as to the balance of their effort.
- 155.3 external stimuli in the way of brokering patronage and subsidy (from government - both education and trade ministries); technical assistance (from telecommunications companies) is required to kick-start developments.
- 155.4 evidence of the third strategic role (see para. 131) is not strong to date, and this is perhaps a reflection of the internal culture of the university, as well as the above factors.

Reflections

156. This area is clearly one of enormous challenge, complexity and potential, but one where the inherent expertise of university R and D can be utilised to great effect. The cases demonstrate swift progress over a short period of time in setting up appropriate infrastructure, and the most advanced contain important lessons for those who follow. Using the infrastructure is the next task.

157. New technologies have immense potential in breaking down organisational barriers, and creating genuine synergy for change. Thus, these interactions should not be viewed as a series of linear exchanges. Co-operation in this domain does involve some surrender of sovereignty and confidentiality in the greater good, which seems to call for considerable attitude shifts by many partners. It is likely there will be a series of ethical questions arising as this field of co-operation accelerates in significance as a genuinely regional, trans-sectoral endeavour.

H. STRATEGIES FOR CHANGE AND DEVELOPMENT

158. In the preceding sections, we have considered the various domains in which universities do, can and should interact with their various partners and stakeholders in a regional context. In these sections, reference has been made to particular types of action related to the needs of particular domains. The purpose of this section is to take a helicopter view, and examine particularly, inter alia

158.1 underlying assumptions about the culture and co-operative capacity of the institution and its partners, and the tension between various cultural modes of organisational behaviour.

158.2 underlying assumptions about the nature of the partnership itself in terms of cohesion, strategic capability, ownership, resourcing and accountability.

158.3 the nature of integration of effort between the various partners.

158.4 instruments and levers for securing effective and long lasting change and development.

In this discussion, we shall also consider the evidence relating to the conduct of this project itself, and what learnings may be derived for good practice in terms of university-partner relations.

Universities in Peripheral Regions

159. It is probably true to say that in most cases in this group, the catalyst for change within universities has been external rather than internal to the institution. Whilst the mission of some institutions was conceived as essentially being of regional service (Aalborg) or problem-solving (Tromsø), the early histories were generally more conventional and traditional, and it has taken a combination of imperatives and facilitators to move things forward in terms of regional dialogue, whether at strategic or devolved level. The factors include the following

159.1 political attention being given to peripheral regions, both internationally (through the EU and its various regional funds) and nationally (through attempts to stimulate economic growth). Inevitably, these have focused interest on universities as resource bases for regional development and on joint bids for additional resource from regional consortia, from both education and trade and industry ministries. Deregulation from the centre clearly facilitates this (Umeå).

159.2 shifts in the nature of higher education funding from central governments. Catania is subject to the 1993 MURST changes for instance, (fixed budgets; authority to determine criteria for internal allocation; incentives to generate non-government funding). Cork is subject to similar consequences by the 1997 Higher Education Act (autonomy within a broad frame; the obligation to plan strategically, and to develop a quality culture which itself implies a client orientation; competition for funds in priority areas; interventions on student numbers). Kuopio is subject to framework budgeting and contract bidding.

- 159.3 a combination of demands - specific demands (e.g. UmeÅ and local government pressures to develop a strong health provision) and general stakeholder urgings (Minho, Kuopio, Catania, Cork) thus create a strong motivation for universities to seek partnerships in the region, or respond to external initiatives so to do.
- 159.4 there are indications that in some domains, inter-institutional co-operation would only occur if induced by external agencies. Thus, in Cork, the spread of higher education into the non university sector (degrees and continuing education) apparently creates an imperative for the Higher Education Authority to broker constructive co-operation, through funding instruments. Whilst the imperative is there, the absence of a coherent regional authority (Cork, Minho) makes it more difficult to deliver - hence the focus on City and County as a pragmatic starting point (Cork).
160. The net consequences of the above factors working solely and collectively appears to be
- 160.1 institutional profiling and a results oriented culture as a conscious strategic choice, rather than based on institutional drift (Kuopio); vision of a problem solving institution (Tromso); and an extrovert and multi-faceted institution (Patras).
- 160.2 the desire to articulate regional strategic themes with the strategy of the university, and vice-versa (Minho, UmeÅ, Cork, Catania). This is clearly a difficult challenge to respond to, especially given 148.4 above, and raises the question of the nature of the strategic plan itself as an instrument of change. The notion of a detailed static plan finds little favour. A generalised statement of principles and directions up to 2010 (Tromso) allowing scope for project-based developments and flexible multi-layered responses within the broad frame seems much more agreeable (UmeÅ, Aalborg, Tromso, Kuopio). UmeÅ's project portfolio is a particularly interesting example. The medium of parallel interlocking plans between agencies seems at this stage pragmatically more relevant than a good regional strategy (Minho), especially where the private sector is comparatively weak in its expression of need (UmeÅ).
- 160.3 A mix of different organisational metaphors and cultures within the university - the entrepreneurial, the collegial, the bureaucratic and the corporate - is creating tensions for universities, e.g. the balance of local and international agendas; applied R and D vis · vis strategic and basic research; short and long term perspectives; market derived income (soft money) vis · vis guaranteed state funding; regional needs for comprehensive provision as against the pressure to identify niche centre strengths in national and international competitive settings. The very existence of this tension, of course, is a powerful stimulus to change in itself - a sort of regional organisational dialectic. How these tensions are used creatively by universities to move things on, and how well stakeholders appreciate the tensions and opportunities presented and assist universities to resolve the tensions is clearly one of the big leadership issues for the next decade.
- 160.4 this will be reflected in very clear ground rules for strategic investment, the provision of strategic long term funds for regional development which transcend the vagaries and dislocations of one-year budget cycles so characteristic of public funding.
161. Earlier discussions have identified a consistent trail of organisational devices for change and development between universities and their partners in respect of human resource, cultural and economic development. Some additional points should be made here

- 161.1 the necessity for close networking with regional partners, thus facilitating brainstorming on future development aspirations and particular innovations, early exchange of information and market intelligence, cross-representation on each others' managing organs, reciprocal memberships etc. This takes various forms, which may be exemplified thus. All have a multiplicity of connections with specific partners for specific purposes at various levels, reflecting an organic approach which may not call for central steering, and may certainly be difficult to identify and control.
- 161.2 the bringing together and focusing of these disparate elements thus constitutes an important challenge. Aalborg has a Centre for Network Relations, which co-ordinates 8 networks principally for R and D, technology transfer. It is thus research oriented, rather than covering the whole gamut of university- stakeholder links. It addresses issues of benefits to companies (early access to research results, influencing curriculum, scientific briefings, improved productivity, and use of Ph.D.'s) and to the university (R and D outreach, joint research, operational contact etc.). The role of the Centre consultants in initiating and developing networks; forming new groups; supporting activity etc. seems a useful model for other regions.
- 161.3 however, several point to the need for a forum or central focus for this dialogue. Cork's core regional alliances are focused on Cork City and Cork County in the absence of a truly regional forum, and this picks up all manner of issues of social, economic and urban regeneration, and the means of resolving these. Catania has its Administration Council has representatives from government, but not from industrial or commercial partners. Catania is thus a strong advocate of a Permanent Advisory Board with a broad based membership to deliver the outcomes sought at the start of this paragraph. There thus does seem to be considerable scope for developing regional fora along these lines. Whether such foci are able to develop concrete binding co-operative plans along the lines of the Kuopio 2020 Provincial Plan is another point.
- 161.4 we have previously referred to science and technology parks and joint venture companies, and it seems further discussion is generally needed here on the precise way these might develop in peripheral regions.
- 161.5 there seems to be a growing perception that service to a region could be more effective, by realising the potential of institutions in neighbouring regions. These may be regions which culturally and geographically are anyway rather similar, and where joint effort in similar or complementary disciplines would be to everyone's benefit. Thus, Kuopio networks with Joensuu on toxicology and education; with Oulu on environmental protection; and Lappeenranta Institute of Technology on production economics. Thus, Umeå sees considerable advantage in liaising with the Vasa institutions in Finland in the context of Gulf of Bothnia issues.
162. On the whole, the awareness of the key issues in peripheral regions is high, and there is abundant evidence of experimentation at various levels. What is more lacking from the evidence is on the stakeholder side. What do they need to do in order to maximise the use of the potential of a strong university community? In the same way universities may need to be helped to exploit the dialogue fully, so may enterprises.

Universities in Regions of Concentration

163. This sample of universities reveals some interesting variants to the patterns typical of the peripheral regions, which seems to be based on
- 163.1 the particular character of the metropolitan regions themselves, which represents a strong driving force for change. VUB is always conscious of the strategic significance of strengthening the Flemish bond, and of the stimulus given by the multi-cultural European capital which Brussels. Rotterdam municipality is similarly a strong force for driving development and expecting Erasmus to be a major player. Catalunya has similar expectations of UCP Barcelona.
 - 163.2 VUB and Erasmus seem thus to have adopted, or been given the role of preferred supplier, and higher education and research providers, which both point out, places obligations which have to be balanced against autonomy. Torino's role is inferred rather than explicit in this context, but the common expectation is that city will be a catalyst and stimulant to the university.
 - 163.3 considerable emphasis is placed on the concept of 'sustainability' in the regional dialogue, in terms of its cultural norms and co-operative capacity, and all are committed to an extension, intensification and systematisation of effort. The three principal dimensions quoted are sustainability of the mentality of dialogue; sustainability through embedded and permanent structural forms; and sustainability through instruments and key levers of change.
 - 163.4 the tension between the domains of science and entrepreneurialism, and bureaucracy and business is apparent, and resolutions are sought as indicated below. In a region with a multiplicity of universities, it is always likely that a multiplicity of different institutional cultures will be found and this presents an interesting variable in the search for some sort of equilibrium in university-stakeholder relationships.
164. As far as sustainability through structures is concerned, the general assumption is that unless structures are relatively permanent, robust and flexible to adapt to changing conditions, the interactions will wither and perish. The trick seems to be to ensure that they do not become intransigent species of the bureaucratic art with their own agendas, but serve the common and strategic purposes. UCP Barcelona's advocacy of highly flexible, often temporary organisational focus seems accurate. Thus, we see the following
- 164.1 the concept of a 'Sustainability Club' seems confined to Rotterdam's RDC - a network of sustainability-related persons from the university, business community and others. This is one of the 9 co-operative foci (each with two co-directors) between the university and municipality, and although its short existence has not guaranteed tangible outputs, it appears an unique device to confront a difficult issue.
 - 164.2 there are several cases of flagship organisations which bear the prime responsibility for the dialogue. Rotterdam has both a Strategy and Monitoring Group for this purpose. VUB's Technopolis and Research Interface Cell are good examples. Torino's CSI (Consorzio Sistemi Informativo) is another, but its focus is primarily on IT and public telecommunications support, and is related to CSP (Super Calculator Centre). COREP is focused on high quality learning projects. However, the common conclusion is that a great deal more work needs to be done on both the 'flagship' organ, and its relationship with other means of dialogue.
 - 164.3 the mechanism of a private holding company owned by the university and contributing profits to the university is one finding favour at Rotterdam, because it

institutionalises and stabilises a business-like organisation for the university. There seem to be a series of advantages of this mechanism : it forms subsidiary companies on a discipline basis closely related to the faculties; it is a transparent system for commercial projects; it is risk-bearing; it is task and market oriented, and has acted as a catalyst for the change of attitudes across the university. VUB's spin off companies demonstrate the same points.

164.4 UPC Barcelona goes a stage further and talks of the university itself as a holding company for a wide variety of permanent and transient organisations fulfilling different purposes.

164.5 academic hospitals present an obvious structural form (VUB).

These are interesting formulations, and differ accordingly to local circumstances, but the general principles are common.

165. Sustainability is also manifested in a series of instruments and levers of change : process rather than structural responses, of which the main examples are

165.1 flagship courses, devised and delivered as joint operations with stakeholders (Torino's business and public administration degrees, and Rotterdam's academic starter programmes) especially at postgraduate level. Rotterdam expresses this interestingly as the utilisation of private knowledge.

165.2 focused high prestige projects, such as the Brussels 2000 project, or the joint internationalisation programmes of municipality and university (Rotterdam).

165.3 so-called 'visitor friendliness' (Rotterdam) or a much more client-oriented approach by universities to break down communication barriers with stakeholders. Structural reform, as in 153.3 is a parallel need.

165.4 well articulated patenting and licensing policies and procedures, where intellectual property rights are clear and unambiguously defined between universities and partners (VUB).

165.5 clear joint quality assurance processes (VUB).

165.6 strategic planning processes which encourage the involvement of the whole community (external and internal); which provide directions for opportunism; and which provide a common vision are seen as vital, and the recently developed contract-objectives programme promoted by the Catalan government seems a precursor of what is to come.

166. In all cases is posed the difficult question of balancing institutional autonomy and the pursuit of academic freedom with the responsibility of working with partners, especially in these institutions which have generally devolved characteristics. The careful conception and design of differentiated structures and processes is clearly a major step forward in the reconciliation of these pressures.

Universities in Regions of Economic Revival

167. In terms of stimulating a dynamic for change in regional partnerships in this type of region, we again see the significant of a whole host of external stimuli as the principal initial catalysts, rather than internal conviction. The latter will follow, but often rather slower, and, as all the cases demonstrate, institutional leadership needs to open up the university community to outside influences, and to free up internal inhibitors to change before much concrete action follows. The external stimuli may be briefly identified thus :
- 167.1 the growing significance of government regional agendas (Rostock, North East of England, Katowice) often accompanied by funding incentives from EU.
 - 167.2 producing creative responses to major societal problems, notably unemployment (Newcastle) or the xenophobia against foreign influences (Rostock).
 - 167.3 responding to attempts to get universities and non-universities to work closer together (North East of England).
168. These institutions are particularly conscious of the tension between
- 168.1 internal development agendas, based on academic collegial criteria and the need to be credible in an international academic market place.
 - 168.2 the outward expansion of university role demanding entrepreneurialism and progressive economic independence of government.
- The task of partnerships seems thus, on the one hand to persuade institutions of the benefits of doing regionally oriented research etc. and, on the other, to persuade regional stakeholder partners to recognise the importance of a strong internationally oriented university for regional development and inward investment. Newcastle refers to this as the so-called 'Learning Region'. Managing both dimensions simultaneously seems the key.
169. There is a general concern with some inhibitions to the above ... for instance
- 169.1 funds given for regional development by government are often predicated on inter-institutional competition rather than co-operation (Newcastle).
 - 169.2 state regulatory norms for curriculum, fee charging, financial and personnel management seem diametrically opposed to flexible and imaginative responses to societal opportunities (Rostock). Legal constraints to contract agreements are also present in some Central and Eastern European settings.
 - 169.3 the absence of regional governments or administrations creates a vacuum (Brno) or the proliferation of agencies may well create confusion (Newcastle), especially where lack of co-ordination may be demonstrated.
 - 169.4 the internal organisation of universities is or has clearly a problem (Brno, Newcastle, St. Etienne, Katowice, Rostock).
170. The resolution of the external issues may only be capable of resolution at a political level, and here, the role of rector's conferences and networks of municipalities is central in exerting pressure on politicians and central governments. It therefore follows that a major dimension of the rector's role in these regions is a convenor/ facilitator of quasi political and economic strategic alliances and the cultivation of friends of the university and region, since without such political change, progress must be slow.

171. The resolution of internal issues, whilst perhaps subject to national framework legislation, is more susceptible to internal action. Thus, we see considerable evidence of
- 171.1 internal devolution to faculties and associated deregulation (Rostock, Newcastle, St. Etienne).
 - 171.2 presidential teams/rectorates based on specific policy portfolios (Newcastle, St. Etienne).
 - 171.3 professionalised administration with different operating norms to state bureaucracies, especially in fields of finance and management information.
 - 171.4 differentiated structures for lifelong learning, R and D etc. (Newcastle, Rostock, St. Etienne).

However, in some cases (Brno) devolution has not been accompanied by a compensating growth in the strategic role of the rectorate, with accompanying levers of change, thus exacerbating a problem of legitimacy, authority and fragmentation.

In the light of the above, however, some clear change instruments may be discussed, which we now discuss.

172. Institutions in this sample see the early evolution/refinement of a strategy for the regional role of the university as necessary. However, it may be noted that
- 172.1 that of Szeged, whilst based on a systematic SWOT analysis seems more institutionally based than partnership inspired or informed.
 - 172.2 Katowice's strategy is for the voivodship (region) including the university, and includes responsibilities etc. for urban renewal, free enterprise, transport infrastructure, business competition etc. as well as educational and research development.
 - 172.3 Rostock lies somewhere in between, whilst the North East of England is characterised by a more volatile situation of overlapping players and plans and a complex set of simultaneous focal priorities.
173. Nonetheless, the pleas for coherent regional strategy of which the university is a part, and for a coherent regional strategy for the university seem well founded and agreed. The content of such strategies includes the elements described for Katowice (161.2), and also elements such as life-long learning in its various forms; R and D; private sector networking (Rostock); new programmes; curriculum creditisation (Szeged, Newcastle), financing and extended integration (Szeged); regional conferencing on a permanent basis (Rostock, Newcastle); international partnership based on region to region and university to university within the same region (Newcastle, Rostock); the sharing of skills with other institutions within the region (Newcastle, St. Etienne); and the creation of a common partnership mail-base (Newcastle).
174. However, whilst the above are all considered highly significant instruments for the development of the regional partnership, it is commonly asserted that a robust and high quality research and development dimension is quite fundamental, as is the production of excellent and competent graduates. This reinforces the interest of the regional partnership in

quality assurance processes. Overall, systematisation and institutionalisation of partners efforts is accepted as a priority.

Reflections

175. The cases reveal a growing sophistication in approaches to societal - and institutional - change and development, reflected especially in

175.1 the overt attention to issues of sustainability in its various dimensions.

175.2 the apparent acceptance of the conceptual framework of the Responsive or Entrepreneurial University, with all it means in terms of risk taking, strategic analysis, differentiated and transitory structures etc.

175.3 the acceptance that co-operation and competition are not mutually exclusive in regional advancement.

Further ramifications are analysed in the final section.

I. CONCLUSIONS

176. It is acknowledged at the outset that generalisations based on this breadth of evidence from such a wide variety of settings is not an easy task. Whilst for analytical purposes, the data has been collected in 3 broad regional categories, equally important are factors such as institutional size, scope and complexity; discipline range; traditions; and, of course, the self interest and character of the range of regional partners. Nonetheless, some broad tentative strategic conclusions are beginning to emerge, which are now discussed, with the caveat that each institutional cluster needs to work out its own directions for progress, using these findings as a broad template of parameters and good practice.
177. It is evident that we have a spectrum of maturity in terms of regional relationships as demonstrated by the various cases, and the processes by which they have approached the project. Conceptually, this is demonstrated in Figure 2. It is clear from the evidence that some clusters are very much in the early stages of acquaintance,^① and that the project itself may well have assisted in catalysing the relationship in a more systematic manner. Some clusters^② describe fully the current situation, but do not display any marked analysis as yet^③. Some indicate a marked willingness to confront identified problems head-on at least, in certain domains, and to criticise partner efforts in a creative, helpful and constructive manner^④. Others show a developed tendency to be able to reconstruct arrangements together and to go well beyond the planning stage to systematic implementation of improvements^⑤.

There is also a sophistication dimension to this, so clusters in ^⑤ which are dealing with exceedingly complex realities, (e.g. in regions of concentration), may have more variables to

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178. There are a number of complex factors which may explain cluster positioning on Figure 2 e.g.
- 178.1 the existence or otherwise of various strong stakeholder consortia within a region able to harness policy preferences e.g. chambers of commerce, municipalities, regional economic agencies.
 - 178.2 the configuration and the extent of competition between institutions within a region.
 - 178.3 the responsiveness of institutions to external stimuli and the strategic clout of rectorates.
 - 178.4 the sophistication of enterprises in terms of their ability to articulate needs for R and D, human resource development etc.
 - 178.5 the ability of leaders to move matters from a series of essentially ad hoc approaches to more formalised, systematic and institutionalised patterns.
 - 178.6 the existence or otherwise of a common problem-solving culture.
 - 178.7 the provision of resource incentives, usually from government or EU to stimulate co-operation.
 - 178.8 the existence of three speeds^î in the process - market speed, which usually demands very swift responses; political speed, which normally requires considered due

process and political bargaining; and university speed, which requires the satisfaction of academic conventions and the collegium, which usually takes considerably longer. An appreciation of these, and how they may be brought into line in specific situations, is clearly important.

There are doubtless others, but experience does demonstrate that it is unlikely that a cluster of limited maturity and life could move immediately from ① to ⑤. Things have to be learned about relationships, agendas, issues, identifies and likely solutions, and this, understandably, takes time. Recognising the existence of this evolutionary dynamic would certainly induce a spirit of realism, patience and toleration for what will be a long process.

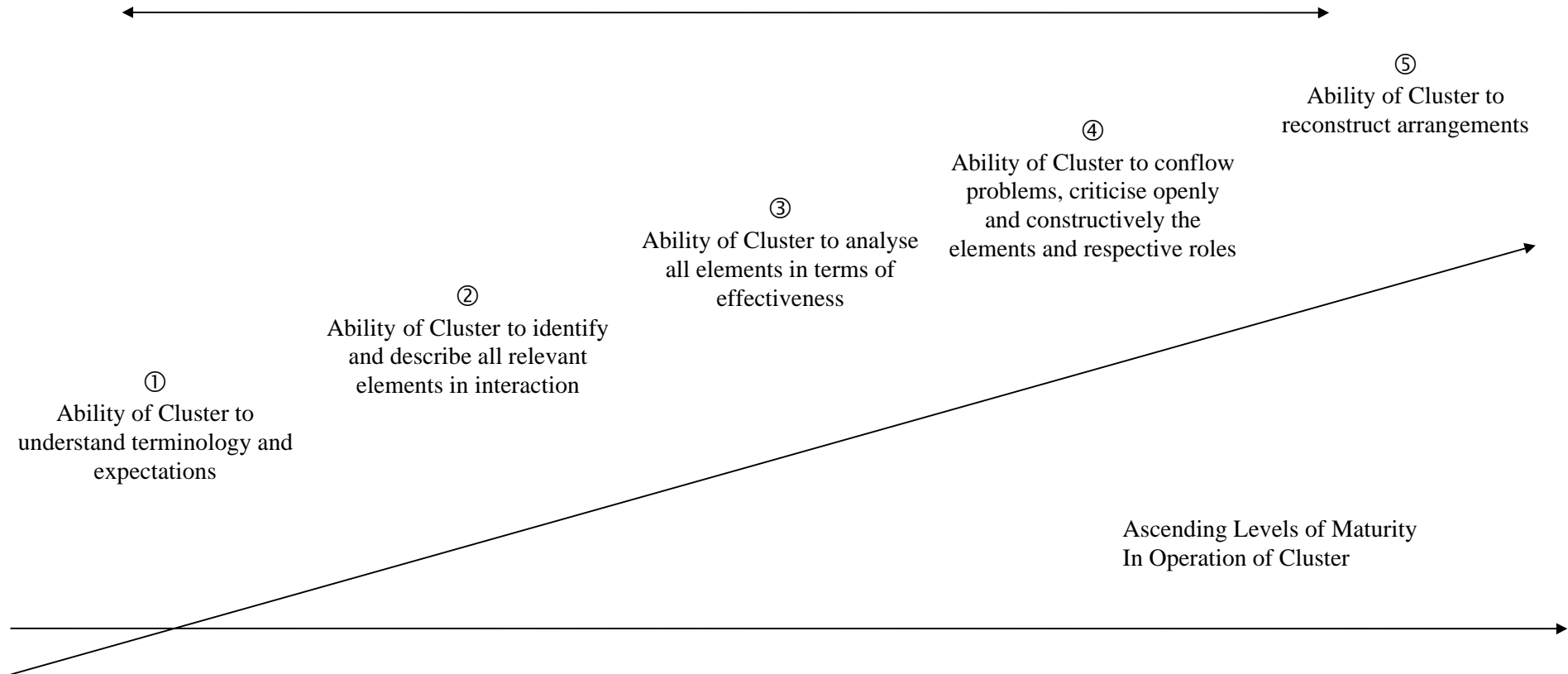
179. It perhaps should be observed that the choice of partners is itself a fundamental strategic decision, since this will govern the eventual health and potency of the entire enterprise. Some partners are, of course, given - there is no alternative to working with local city councils or chambers. But to some extent stakeholders can shop around for universities which are perceived to have appropriate styles, resources, expertise and prestige. Universities, too, can select enterprise partners - hence the neglect of SMEs in some regions, rightly or wrongly. For universities, the recognition of supply chains may well prove to be a critical step in their regional strategies.

FIGURE 2

A REGIONAL CLUSTER MATURITY SPECTRUM

RELATIVE IMMATURITY, LACK OF
SOPHISTICATION AND
SYSTEMATISATION

RELATIVE MATURITY, OF
SYSTEMATISATION AND
SOPHISTICATION



180. Referring back to Figure 1 (page 7), we may thus trace a desire to move towards the co-operative boxes E and F, which presumes there must be powerful instruments to reduce unhealthy competition or dysfunctional fragmentation (A and B), and to ameliorate the ambiguities and uncertainties in C and D. The placement in E or F is then the question, and this cannot really be answered on an entirely rational basis, since organisational and national cultural norms may well constrain the achievement of what may be thought rationally sound. The critical element then, is what works best in a particular setting, but it can be contended that a judicious combination of boxes E and F is perhaps most likely to ensure the sustainability of the regional partnership over a long period.

181. In Section H, we have indicated what some of the critical factors in sustainability seem to be, namely

181.1 sustainability of the mental and social dialogue.

181.2 sustainability through quasi-permanent and embedded structural forms.

181.3 sustainability through instruments and key levers of change.

and, though the precise nature of these differ from region to region, the essential character is similar.

182. It is quite evident that within particular regions, different institutions will play different roles. In the North East of England, for instance, Newcastle and Durham have quite different roles within the region than Sunderland or Northumbria. Put in a slightly different way, stakeholders have different needs of different universities, and this is especially evident in regions of concentration and renewal. This reinforces the need for an overt framework of information about regional needs and provision to enable the linkages to occur as effectively as possible, bearing in mind, it is not a perfect market with perfect information access (hence the importance of Section G on Communications). A considerable challenge, though, is posed to the peripheral region universities, which may be the sole or principal provider : they may well suffer from expectation or mission overload, and may not have the benefit of portfolio or depth of resources to cope adequately.

183. It also follows that universities have varying relationships with partners, in terms of what partners may give to the university : it is after all, an exchange process. We thus see the need of universities to build themselves in different ways with different circles of interest groups, and, of course, senior university management may understandably not be at all aware of all the connections at various levels in a devolved and entrepreneurial university. The leadership issues for rectors from this observation are

183.1 the university still needs a well articulated regional strategy which interlocks with those of other partners, so that in a devolved setting, faculties, research groups and individuals have a framework to guide activity, and consistency which appertains at the various levels of dialogue - strategic, managerial and operational.

183.2 the rector has a responsibility to manage an 'assembly process' whereby he/she brokers the meeting of minds of various partners who can push things forward - venture capitalists, enterprises, government agencies, etc.

183.3 the 'regional' university still needs to be oriented internationally for the benefit of institution and region : there is no contradiction here.

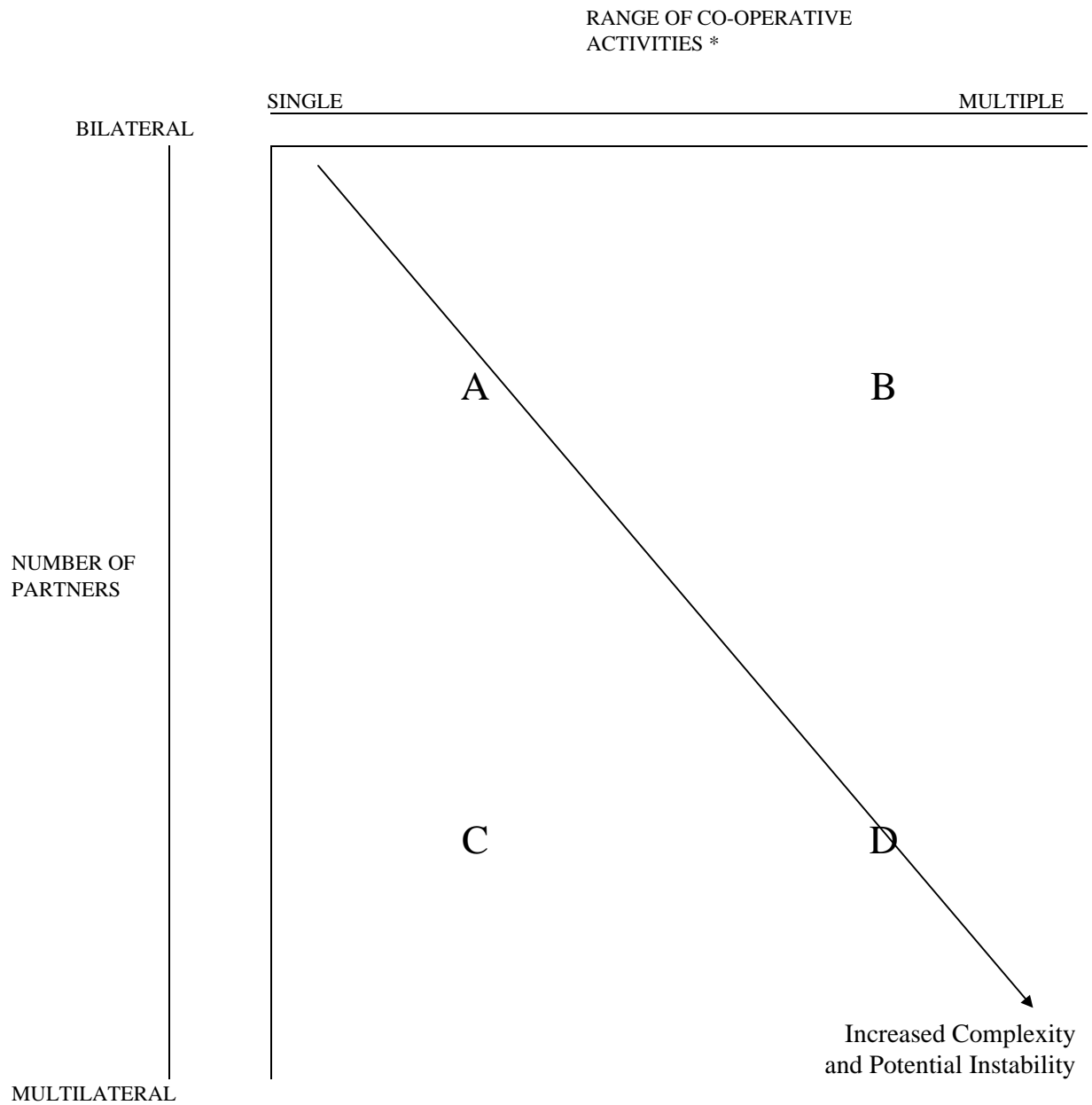
- 183.4 the necessity of moving several important elements of university life to an entrepreneurial mode - in the various manifestations indicated in the various sections.
- 183.5 there seems to be an obligation on universities to promote sustainability, especially in settings where rectorates and deanships may be short term and elected. Here, stable senior administration is vital.
- 183.6 the identification of key people to act as animators or translators at the university - stakeholder interface is an essential condition of success.
184. For the universities' partners in the regions there are parallel issues, which include the following
- 184.1 enterprises also may be less than effective in articulating needs for R and D; lifelong learning; human resource development etc., and may also be very conservative in adjusting to new realities.
- 184.2 they may need to think carefully of how they can extract the best from their regional university.
- 184.3 the resolution of financing and intellectual property questions in regional partnerships.
- 184.4 a realisation that they collectively may be placing on universities a whole series of divergent expectations and preferences. The many references to stakeholder comments in, for example, paras. 40, 51 and 53 (Human Resource Development) or paras. 93, 99 and 108 (Economic Regeneration) demonstrate this. In the spirit of genuine partnership in a mature setting (see Figure 2 point ④), this divergence should be capable of being thought through. The collective and co-operative management of mismatch is essential.
- For universities, in turn, the responsibility is to assist stakeholders articulate expectations in terms of level, specificity and priority. It is then a matter of negotiation to determine what universities may effectively be asked to deliver within the parameters of their autonomy, available resource and technical expertise.
185. It is possible to conceptualise this complexity and fragmentation, with reference to different patterns of relationship often co-existing side by side, even in relatively mature settings. Thus, we can discern the following
- 185.1 a Competition Model : where participants may fight for business and the exercise will be waged in terms of market share, specialisation, strategic alliances; price; and customer care.
- 185.2 a Regulation Model : where in several systems, the state may determine the ground rules of operation; status positioning; financial reward; organisational role; etc. in an attempt to reduce fragmentation and conflict, but often with the result of unnecessary constraint which may hinder flexible development (see para. 158.2).
- 185.3 a Collaboration or Horizontal Integration Model : as indicated in Figure 3, which may manifest itself along two dimensions ... the number of partners, and the range of

co-operative activities. This provides us with four different idealised quadrants, which nonetheless bear close resemblance to reality.

Quadrant A is easier to bring into being, and may extend either in terms of the number of partners co-operating on the same issues (C) or by the same number of partners expanding their area of co-operation (B) or both. Quadrant D represents a very complex network, and one which is difficult to sustain, especially if entered into too precipitately, without the institutionalisation of the factors governing sustainability.

Here, it is wise to view the regional partnership as a Learning Organisation (see para. 157), in which case, graduating from steps ① to ⑤ on Figure 2 becomes the normal progression. It is strongly contended that clusters should not accelerate beyond their capabilities on the respective steps, or else, they will surely regress.

INTER-INSTITUTIONAL CO-OPERATION AT REGIONAL LEVEL



* For example credit recognition, continuing education, technology transfer, research, resource sharing (Libraries, IT)

185.4 there may be a fourth possibility, a Vertical Integration Model, of which we see some evidence, for instance, of institutional mergers and the integration of functional service, such as R and D.

Of the Models described, elements of all may be seen, but it does seem that 172.3 is the one which probably describes where most of the action is at present. Strategically, therefore, this deserves most consideration in terms of factors determining the choice of movement across the matrix.

186. Another factor of significance is the role of government at various levels.

186.1 the European Commission's role is perceived as being central to regional development, in terms of the plethora of programmes specific and general, which can progress the regional agenda - Leonardo, Comett, Socrates, Brite, and the Structural Funds with different levels of Objectives are well known. However, there are strong views running through the cases. One is that some encourage programme competition within regions, and are actually counterproductive to regional co-ordination and synergy. Another is that attention to the overall co-ordinated needs of regions is often neglected in Brussels, and the third is the feeling that EC does not properly understand that the success of a university in its basic functions is a prerequisite for high quality research and technology transfer and continuing education. In short, the view is that one undermines the basic functions of an university at one's peril.

186.2 national governments often send out conflicting policy statements on university developments, which in turn, do not chime with existing bureaucratic practices. We especially see examples of exhortations for relevant research, inter-disciplinary effort, or extensive continuing education being undermined by budget allocation processes; heavy financial and personnel policy and regulations; arcane academic approval mechanisms; and inadequate resourcing. If governments believe in entrepreneurial and regionally oriented universities, then they should ensure consistency of policy; appropriate incentives and adequate resource.

186.3 for local governments, similar considerations apply. Best practice in the cases can be observed where local governments demonstrate considerable acumen in putting together land deals, brokering effective alliances, and exerting pressure on central governments and Brussels for appropriate policies and grants.

187. Finally, what is apparent, having said all this, is that there are very strenuous efforts being made by institutions and their regional partners to realise the synergies which may flow from co-operation and dialogue. The cases contain many criticisms and self criticisms implicit and explicit, but it is evident that much concentrated effort has gone into this project, and it is hoped that this project in itself will have fostered fresh thinking, within and between clusters, of how the process may be sensibly accelerated.

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*The dialogue of universities with their stakeholders:
comparison between different regions of Europe*

/LWV RI UHJLRQV SDUWLFLSDMLQJ LQ WKH SURMHFW

1. In each region, one university was responsible for setting up and coordinating the dialogue process, and for producing a report.

2 A variety of stakeholders were consulted in different regions. An overview of these different stakeholders involved in each region is being prepared.

3 Below is a list of the regions participating in the project, with the lead university and the main stakeholder represented at the plenary project meetings.

REGION	LEAD UNIVERSITY	MAIN STAKEHOLDER
5HJLRQV RI &RQFHQWUDMLRQ		
Graz - A	Technische Universität Graz in Styria	Federation of Austrian Industry
Brussels - B	Vrije Universiteit Brussel	Brussels Regional Government
Catalunya - ES	Universitat Politècnica de Catalunya	Town Council of Terrassa
Turin - I	Università degli Studi di Torino	
Rotterdam - NL	Erasmus University Rotterdam	Department of Social and Economic Affairs, City of Rotterdam
3HULSKHUD0 5HJLRQV		
Aalborg - DK	Aalborg Universitet	Hedevang Management & Project
Kuopio - FIN	University of Kuopio	Regional Council of Savo
Patras - GR	University of Patras	Federation of Industries in Peloponnese
Cork - IRL	University College of Cork	Cork Chamber of Commerce
Catania - I	Università degli Studi di Catania	Municipality of Catania
Tromsø - N	Universitetet i Tromsø	Norut Gruppen AS
Minho - P	Universidade do Minho	Ave Valley Development Agency
Umeå - S	Umeå University	Centre for Regional Science / CERUM
5HJLRQV RI (FRQRPLF 5HYLYD0		
Brno - CZ	Masaryk University	Municipality of the City of Brno
Rostock - D	Universität Rostock	Employers' Association
St. Etienne - F	Université Jean Monnet	Municipality of St. Etienne
Newcastle - GB	University of Newcastle	Northern Development Company
Szeged - H	József Attila University	Chamber of Commerce & Industry
Katowice - PL	University of Silesia	Katowice Regional Parliament

