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Discussion papers

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Labour and employment : reconciling flexibility and security

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TRAVAIL ET EMPLOI : RECONCILIER FLEXIBILITE ET SECURITE

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1. Introduction

11. Le concept de « société fondée sur la connaissance » est ambigu, comme le montre bien Robert Lindlay (Lindlay, 1999). Cependant on peut l'accepter comme un résumé commode pour désigner le fait que la capacité d'acquérir et de créer des connaissances, de les communiquer et de les mettre en œuvre de manière coopérative tend à devenir simultanément le facteur central du développement personnel, de l'intégration sociale et de l'efficacité économique.

Telle qu'elle se développe spontanément, la société fondée sur la connaissance est facteur d'amplification des inégalités sur le marché du travail : elle offre des activités stimulantes et des mobilités ascendantes à ceux qui la maîtrisent ; elle marginalise ceux qui ne peuvent y accéder. Un modèle social européen doit donc offrir un projet qui permette de maîtriser ce risque sans stériliser les potentialités offertes par le progrès et l'interconnexion des connaissances.

12. Les pays de l'Union européenne se sont transformés au cours de la décennie 1990 sous l'effet du choc engendré par une brutale récession économique et par la mise en œuvre des traités de Maastricht et d'Amsterdam. Le fonctionnement des marchés du travail, la nature des négociations collectives, le contenu des politiques publiques de l'emploi ont été profondément modifiés. C'est en référence à cette dynamique qu'il faut réfléchir aux évolutions futures et non en référence aux thèses sur l' « Eurosclérose » qui ont été à la mode pendant la décennie 1980.

13. Dans une société démocratique, les choix politiques sont toujours des compromis. Toutefois, il est souvent utile de réfléchir sur des « modèles purs » ou des « idéaux-types » parce qu'ils permettent de définir les frontières de l'espace au sein duquel s'établiront les compromis. Au sein des pays de l'Union européenne, nous voyons s'affronter (et se combiner) deux logiques dominantes dans la gestion du travail et de l'emploi : la première privilégie la « dérégulation », c'est-à-dire la régulation par les marchés ; la seconde privilégie la recherche d'accords sociaux négociés, bipartites ou tripartites [1]. Elles proposent deux conceptions des rapports entre flexibilité et sécurité. L'objectif sera ici d'examiner comment ces deux conceptions prennent en compte les exigences nouvelles portées par une société fondée sur la connaissance.

2. La régulation par le marché : spécificité ou transférabilité du capital humain

21. Il faut, dans un premier temps, écarter une stratégie de la « dérégulation » des marchés du travail qui se réduirait à **l'élargissement des formes d'emplois précaires** visant à rechercher la compétitivité par l'abaissement du coût salarial. Cette solution ne peut se développer qu'aux marges d'une société fondée sur la connaissance : elle est en effet génératrice d'un piège d' « équilibre de basse qualification ». Les employeurs n'ont aucun intérêt à donner une formation (sauf de brèves formations d'adaptation au poste de travail) à des salariés qui sont seulement de passage. Les salariés n'ont pas d'informations sur les qualifications qu'il serait « rentable » pour eux d'acquérir à long terme. La division du travail sera poussée au maximum pour pouvoir utiliser rapidement des travailleurs dotés de connaissances élémentaires.

Il est significatif, sous cet aspect, d'analyser l'expérience du Royaume-Uni où le dispositif du **Youth Training Scheme** (puis **Youth Training**) a été abandonné et où l'introduction du **New Apprenticeship** a été la première étape d'une inflexion qualitative. De la même façon, en Espagne, les dysfonctionnements engendrés par le recours massif aux embauches sur emplois précaires a été à l'origine de **l'Acuerdo Interconfederal para la Estabilidad en el Empleo** (avril 1997) qui traduit une volonté commune des partenaires sociaux de réduire la précarité, parallèlement à une politique de développement de la formation professionnelle.

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1 Nous employons ici le terme « régulation » au sens large pour désigner l'ensemble des mécanismes et des institutions qui assurent la cohérence du système social et non au sens étroit qui la réduit aux interventions contraignantes de l'Etat, selon une acception du terme dans la langue anglaise.

La régulation par le marché ne peut être ramenée à ces expériences caricaturales, cependant le risque est réel dans de nombreux pays.

22. **La théorie du capital humain** offre un cadre pour l'analyse des logiques marchandes d'acquisition des qualifications.

Si la qualification est transférable, le coût est à la charge du travailleur qui est ainsi responsable de créer les conditions de son employabilité. Compte-tenu des problèmes d'autofinancement qui en résultent, l'Etat peut offrir des « chèques formation » (**vouchers**) que chaque individu utilise pour acquérir les formations de son choix.

Si la qualification est spécifique, seul l'employeur a intérêt à la financer. Nous restons dans le domaine du calcul micro-économique mais le marché externe du travail laisse place au marché interne [2].

Les organismes de formation sont soumis à la même logique de marché : la nécessité de vendre leurs produits les contraint à s'adapter à la demande.

Dans ce système, la flexibilité de l'emploi est assurée par les mobilités que le caractère transférable des qualifications rend à tout moment possibles. La sécurité de l'emploi a la même origine : elle ne se traduit pas par une garantie de l'emploi mais par une forte probabilité de retrouver un emploi en cas de mobilité. Dans le cas de qualifications spécifiques, les conséquences sont inverses : la garantie de l'emploi naît de l'intérêt qu'a l'employeur à rentabiliser ses investissements en formation ; la flexibilité doit alors être internalisée sur la base d'une gestion prévisionnelle des qualifications.

23. Il est aisé de repérer, dans les pays de l'Union européenne, de nombreux exemples et de nombreux projets de développement de ce mode de régulation de la formation. Il faut en mesurer les limites et les risques.

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2 Dans la mesure où les qualifications sont, en général, partiellement transférables et partiellement spécifiques, des systèmes de co-investissement peuvent combiner les contributions de l'employeur et du salarié.

- Si le marché constitue, en règle générale, un bon mécanisme de résorption des déséquilibres de court terme (pénuries ou excédents selon les qualifications offertes et demandées), il est peu efficace pour gérer les transformations qualitatives de la force de travail à long terme (sauf hypothèse de prévision et d'information parfaites). Seuls des travaux de prospective et de programmation à l'échelle sociale (européenne, nationale, régionale) permettent de réunir les informations dont disposent les différents acteurs concernés et de confronter leurs priorités pour définir des objectifs communs.
- La société fondée sur la connaissance est caractérisée par l'ampleur des effets externes positifs engendrés par le développement et la mise en communication des savoirs et des compétences. Seule une politique d'investissements collectifs, matériels et immatériels, permet l'optimisation des externalités.
- L'expérience enseigne qu'en matière d'investissement humain le calcul micro-économique est un puissant facteur d'amplification des inégalités. L'information dont disposent les individus et la motivation qu'ils ont à se former sont directement fonction de leur niveau de formation initiale et de leur position dans la hiérarchie professionnelle. L'intérêt des entreprises (et celui des organismes de formation s'ils sont jugés sur leurs résultats) engendre la sélectivité dans l'accès à la formation. Des processus cumulatifs en résultent qui ne peuvent être combattus que par des politiques, générales et ciblées, visant à réduire l'inégalité dans l'accès aux connaissances et aux qualifications.

3. La régulation négociée : objectifs collectifs et droits individuels

31. Une précision de vocabulaire s'impose quant à la signification donnée ici au terme de « régulation négociée ». Elle ne se limite pas à la négociation collective classique entre employeurs et syndicats, même si celle-ci doit conserver toute sa place. Elle englobe tous les mécanismes par lesquels les acteurs sociaux établissent des compromis durables sur des objectifs d'intérêt commun. L'expérience des pays de l'Union européenne montre le caractère le plus souvent tripartite de ces négociations, en particulier dans les domaines qui nous concernent. Le tripartisme peut être institutionnalisé, comme on l'observe dans de nombreux pays lors de la conclusion de « pactes sociaux » (au niveau national, mais aussi

parfois au niveau régional ou territorial). Il présente des formes plus complexes lorsqu'il résulte de différents mécanismes d'articulation entre la négociation collective interprofessionnelle et l'intervention publique, bien analysés dans le récent rapport préparé sous la direction d'Alain Supiot (Supiot, 1999).

A l'échelle de l'Union européenne, le thème du partenariat dans la gestion des problèmes du travail et de l'emploi est fréquemment mis en avant. Par exemple, Le Livre vert **« Partenariat pour une nouvelle organisation du travail »** (Commission européenne, 1997) se donne pour objet « les possibilités d'amélioration de l'emploi et de la compétitivité par une meilleure organisation du travail sur le lieu de travail » ; il identifie un défi politique : « comment réconcilier la sécurité des travailleurs et la flexibilité nécessaire aux entreprises » et il propose une méthode : « le partenariat entre pouvoirs publics et partenaires sociaux pour un nouveau cadre de modernisation du travail ». Le rapport du groupe d'experts « **Gérer le changement** » (Commission européenne, 1998) préconise la même démarche, en particulier au niveau territorial, pour élaborer « une stratégie collective de reconversion ou de ré-industrialisation », sous l'égide des pouvoirs publics locaux avec l'ensemble des acteurs concernés, y compris les organismes de formation.

L'ampleur des mutations engendrées par l'émergence d'une société fondée sur la connaissance, l'importance des effets externes qui y sont associés, rendent nécessaire la présence de mécanismes de régulation assurant la coordination des stratégies des acteurs sur des objectifs de long terme.

22. Comment se pose, dans ce cadre, la question des rapports entre flexibilité et sécurité ? Le problème central à résoudre est celui de l'organisation d'itinéraires de mobilité « tout au long de la vie ». Ces itinéraires doivent satisfaire simultanément plusieurs exigences.

- Le cycle de vie doit être organisé comme un processus continu (mais hétérogène dans son contenu) d'acquisition, de mise en œuvre et de reconnaissance des savoirs, des qualifications et des compétences dans leurs dimensions indissociablement individuelles et collectives.
- Ce processus sera marqué par la diversité des conditions d'exercice et d'amélioration des capacités de travail : temps de travail rémunéré directement productif, temps de formation, temps consacré à des

activités bénévoles et militantes, temps de travail domestique... Toutes ces activités ont le caractère commun d'être socialement utiles et d'être des lieux possibles d'élargissement et d'échange des savoirs.

- Pour que les mobilités nécessaires soient vécues en termes d'opportunités et non de coûts, les statuts dans lesquels elles s'exercent doivent être articulés de manière à garantir la continuité des droits sociaux et de l'insertion sociale. Chaque étape doit offrir des perspectives de progression.

Deux pistes de recherche stimulantes ont été ouvertes par des travaux récents.

Le rapport Supiot, déjà cité (Supiot, 1999), propose de dépasser un « modèle de l'emploi » où les droits ont été progressivement construits en référence au contrat de travail salarié. Le projet est de construire un « **état professionnel** » englobant « les diverses formes de travail que toute personne est susceptible d'accomplir durant son existence » (*op. cit.*, pp. 89-90). Quatre cercles concentriques définiraient les droits sociaux :

- les droits sociaux universaux, garantis à tous indépendamment de tout travail (ils incluraient le droit à la formation),
- les droits fondés sur le travail non-professionnel,
- le droit commun de l'activité professionnelle,
- le droit propre au travail salarié.

L'exercice de la mobilité suppose la reconnaissance de « droits de tirage sociaux » qui garantissent les conditions de passage d'une situation à une autre.

Les propositions faites en matière d'organisation des « **marchés transitionnels** » relèvent de la même logique (Schmid, Gazier, 2000). Il s'agit d'organiser des passages entre diverses formes d'activités socialement utiles. Ceci implique des accords sociaux qui définissent un réseau de droits permettant d'affronter les discontinuités des statuts et assurent le libre exercice des choix individuels.

On mesure bien le risque que créeraient ces propositions si elles étaient mises en œuvre dans un contexte de chômage massif. Elles pourraient se réduire à la création de dispositifs rendant socialement tolérables des situations de marginalisation ou d'exclusion sociale. Nous reviendrons plus loin sur cette question.

23. Il ne faut pas sous estimer les difficultés que doit affronter une procédure de régulation négociée de l'articulation flexibilité/sécurité.

En premier lieu, les compromis engendrés par une négociation sont fonction de la nature des acteurs qui y participent et des rapports de forces qui s'établissent entre eux. Le risque permanent est que la négociation débouche sur des arrangements d'**insiders** en ignorant les intérêts de ceux qui n'ont pas la capacité d'y être représentés efficacement. Si la société fondée sur la connaissance engendre un risque d'exclusion ou, pour le moins, d'amplification des inégalités, il est vraisemblable que les catégories les plus faibles seront mal armées pour faire entendre leur voix. Sous cet aspect, la tendance à la décentralisation des régulations négociées, qui concerne aussi bien la sphère des régulations publiques que celle de la négociation collective classique, est génératrice d'amplification des écarts si elle n'est pas équilibrée par des mécanismes d'articulation des niveaux de négociation, incluant des moyens concrets pour garantir l'équité et la solidarité.

En second lieu, les régulations négociées ont traditionnellement porté sur la définition de normes collectives uniformes. Le débat qui s'est développé sur la pertinence respective des concepts de **qualification** et de **compétences** (voir, par exemple, Lichtenberger, 1999) montre la difficulté qui existe aujourd'hui pour reconnaître socialement les « qualités » des travailleurs. Les qualifications ont été historiquement reconnues par la négociation collective et parfois consacrées par l'Etat ; elles sont construites sur des niveaux de formation professionnelle certifiés, parfois complétées par la prise en compte de l'expérience professionnelle ; elles sont d'abord une garantie collective pour les travailleurs face à l'employeur. La compétence renvoie directement à la performance productive, observée ou potentielle de chaque travailleur ; elle est liée à son engagement personnel, à sa créativité, à sa capacité d'autonomie et de coopération. Elle implique un nouveau type de rapport entre salarié et employeur ; sauf à être évaluée de manière discrétionnaire par le second, elle devra être l'objet de procédures négociées de reconnaissance, articulées avec celles qui définissent la qualification. Parallèlement,

il conviendra de définir les modes de fonctionnement d' « organisations apprenantes » qui assurent aux salariés la possibilité de développer et de mettre en œuvre leurs compétences.

En troisième lieu, la perspective d'itinéraires individuels de mobilité transforme la nature des normes collectives qui définissent le statut des travailleurs. La reconnaissance de la diversité des préférences individuelles implique que ces normes aient moins pour fonction à l'avenir d'assurer l'homogénéité des situations que l'égalité des droits. Chacun disposerait de garanties collectives dans le cadre desquelles il exercerait ses choix. La recherche d'un équilibre entre normes homogènes de contenu et normes procédurales encadrant les choix individuels constituera un enjeu complexe de la régulation négociée.

3. Remarques conclusives

31. La société fondée sur la connaissance ne constitue ni une rupture radicale, ni une réalité généralisée. Ce terme désigne, imparfaitement, un mouvement de transformation qui connaît aujourd'hui une phase d'accélération.

Ce mouvement est fondamentalement sélectif. Il peut approfondir la segmentation de nos sociétés sur la base des capacités d'accès aux réseaux de diffusion et d'échange de l'information et des savoirs. Il peut accélérer les tendances à la fragmentation de l'espace européen entre des zones, organisées en réseaux, qui monopoliseront la création des connaissances et l'innovation, et d'autres zones qui accueilleront des formes d'organisation néo-tayloristes (CGP, 1999).

Il n'existe de perspective de modèle social européen que si sont mises en œuvre des politiques qui combattent cette tendance aujourd'hui dominante.

32. Dans un contexte de chômage massif, les politiques de lutte contre l'inégalité et l'exclusion se heurtent à la sélectivité des marchés du travail. Aussi nécessaires qu'elles soient, les mesures de prévention et de réparation ont pour principal effet, non négligeable, de modifier les places dans les files d'attente de l'emploi. Dans un contexte de croissance faible, le potentiel de productivité et d'innovation qu'offre la société fondée sur la connaissance est vécu par les plus faibles comme source de précarité et d'exclusion. Les thèmes développés par le

document de la présidence : « d'avantage d'emplois et plus de cohésion », « des politiques macroéconomiques pour une croissance durable » (Conseil de l'Union européenne, 2000) constituent donc des composantes fondamentales pour un modèle social qui assurerait la cohérence entre flexibilité et sécurité sur le marché du travail.

REFERENCES BIBLIOGRAPHIQUES

C G P (Commissariat général du Plan) (1999), **Scénario pour une nouvelle géographie économique de l'Europe**, Economica, Paris

Commission européenne (1997), **Partenariat pour une nouvelle organisation du travail**, Livre vert, Luxembourg.

Commission européenne (1998), **Gérer le changement**, Rapport final du groupe d'experts de haut niveau sur les implications économiques et sociales des mutations industrielles, Luxembourg

Conseil de l'Union européenne (2000), **Emploi, réformes économiques et cohésion sociale. Pour une Europe de l'innovation et de la connaissance**, Document de la présidence, Bruxelles, 12 janvier.

Lichtenberger Y. (1999), « Compétence, organisation du travail et confrontation sociale », **Formation et Emploi**, n° 67.

Lindlay R.M. (1999), **Knowledge-Based Economies : the European Employment Debate in a New Context**, Background Paper prepared for the Portuguese Presidency of the European Union, December.

Schmid G., Gazier B. (ed) (2000), **The dynamics of Full Employment, Social Integration By Transitional Labour Markets**, Edward Elgor (à paraître).

Supiot A. (sous la direction de) (1999), **Au-delà de l'emploi**, Rapport pour la Commission européenne, Flammarion, Paris

KNOWLEDGE-BASED ECONOMIES: THE EUROPEAN EMPLOYMENT DEBATE IN A NEW CONTEXT

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KNOWLEDGE-BASED ECONOMIES: THE EUROPEAN EMPLOYMENT DEBATE IN A NEW CONTEXT

EXECUTIVE SUMMARY

This paper explores some of the key issues raised by considering the development of a knowledge(-based) economy or society. The focus is mainly on its potential consequences for employment as far as they can be discerned and on policy in the labour and learning fields. However, ideas relating to the knowledge society have a certain edge to them that goes beyond the socio-economic scenario they seek to characterise. They are heavy with implications for the *behaviour of the policy development system itself.* Perhaps it is this, as much as the substantive change allegedly under way, that calls for a sharper perspective on the European employment debate.

This Executive Summary concentrates on presenting the main conclusions as they relate to the policy system. The paper, however, contains a number of other conclusions which deal with the underlying mechanisms by which the knowledge-based economy might evolve and on the position of the socially excluded in relation to skill acquisition and their re-integration.

It should be emphasised that any brief statement of the main elements which might be said to comprise the knowledge-based economy will almost inevitably move back and forth across the boundaries between description, analysis, prescription and speculation. This is certainly, in part, because the thesis is still being explored in its own terms and the data to test its applicability are hard to acquire. It is also because its potential implications are so important that they need to be examined within whatever framework of analysis can be articulated now and with the data available for scrutiny now.

The principle conclusions stated here address three questions: what is the knowledge-based economy, how does its development alter the terms of the European employment debate, and are there modifications that should be made to the EU 'processes' (Cologne, Cardiff and Luxembourg) that would help to monitor performance in the light of it?

The meaning of the 'knowledge-based economy'

The use of the term 'knowledge-based economy' or one of the other variations on that theme is bound to invite criticism because knowledge is involved in virtually all activities and the privileging of a group of sectors or a new phase of economic development by referring to them as being 'knowledge-based' seems presumptuous, if not actually ignorant of history. Perhaps, however, use of the term can be clarified, if not entirely legitimised, by allowing it to cover four complementary and in part overlapping phenomena which are growing substantially or should do so:

- the conscious recognition of the notion of 'practice' across a much wider range of occupational contexts than hitherto both at the professional level where it has been less developed (e.g. scientist, computer programmer as opposed to doctor, teacher and engineer) and at other levels (e.g. secretaries, care assistants, nurse auxiliaries, security guards, plumbers, sales assistants);
- the much greater codification of knowledge so that it is accessible and can be better used to bring 'what is practised' into closer association with 'what is known';
- the increasingly diverse production and exploitation of knowledge in more intensive and pervasive ways in many parts of the economy and society *and* the application of knowledge and advanced information processing to the knowledge production and dissemination processes themselves;
- the evolution of a knowledge-based policy development system with very high standards in the collection and use of evidence in the policy process.

This is not to say that a majority of economic life will be dominated by 'reflective practitioners' generating waves of knowledge-based services in a continual state of flux and feedback. But the creation of a knowledge-based economy will be the key innovation facing economic and social life at least in the industrialised nations. Whether this definition is likely to irritate the critics of the metaphor more or less than a vaguer interpretation is a moot point.

Knowledge-based economies and the European employment debate

The potential impact of the knowledge-based society will be pervasive. Rights and responsibilities will need to be re-drawn. New understandings will be required, including those forged between social partners in industry, between local partners, and among communities in areas of acute social and economic disadvantage. Partial visions of the knowledge society, focussing only on competitiveness, will be inadequate. They risk losing major opportunities, where virtuous circles of rising productivity, profitability, employment and job quality could be entered and where the pursuit of equity and efficiency could actually reinforce each other. An holistic approach to policy is required.

Consideration of the potential impact of the knowledge-based economy should give more prominence in the employment debate to the quality of organisational design and implementation. These need to be addressed much more explicitly in national and European-level debates which still tend to be more concerned with education, training and skill shortages. However, this does not mean an exclusive concern for the performance of internal labour markets and the support of corporate human resource policies. The knowledge-based society will increase the complexity of interaction between education, training, and mobility within organisations, networked employment structures and the external labour market.

The level of investment in education and skills will grow as life-long learning becomes more extensive, especially given the importance of raising the participation of older workers in the labour force and strategies for realising the potential of older workers. One of the main elements of the latter is to retain such workers within the organisation rather than face re-integration problems after redundancy or early retirement. Much of the education and training made available to these workers will thus be in the context of an employment relationship.

In these circumstances of rising human capital investment both in absolute terms and in relation to other investments, the allowable 'subsidy regime' will need to be carefully worked out; what are, in effect, state aids in the form of direct provision and/or financing to individuals and organisations for education, training and career development will have to come more fully within the scrutiny of the European Commission.

This focus should now take over from the substantial initiatives concerned with European-level regulation of the labour market during the last decade or so. The regulatory 'floor' has been established and, whilst enforcement and compliance require attention, the EU seems to have reached the reasonable limit of its scope for general regulation of the labour market. The evidence does not suggest that *de*-regulation relative to the standards set at the EU level would offer any great pay-off (indeed, it would probably have destructive effects on the attempts to create many more high performance organisations); this is the case even if some individual countries do have reason to re-consider existing measures that go well beyond the provisions implemented at European level.

Proposed modifications to the EU 'processes'

The EU has already taken major steps towards creating a framework for assessing the progress of Member States towards the adoption of appropriate macro-economic, structural and labour market policies. This consists of the initial establishment of the Broad Economic Guidelines and their review at the Cologne Council meeting, together with the introduction of the Cardiff and Luxembourg processes, respectively.

The development of the knowledge-based society does not provide grounds for creating new processes but does suggest modifications to the *content* and methods of scrutiny adopted. There has already been considerable discussion amongst the Member States and the Commission about the relationships between the processes and their potential future roles; this will not be pursued here. However, whatever happens to the division of responsibilities arising in the future, the analysis of this paper suggests that some modifications to the content of the processes taken collectively would be desirable. These would include the following five innovations:

- Taking a Rawlesian view of acceptable inequality which deems inequality appropriate only if disadvantaged people benefit from its existence, a key aggregate indicator should be the income accruing to, say, the poorest one third of individuals or households. In terms of overall performance this would represent the outcome of the various attempts to pursue efficiency and equity.

The use of aggregate GDP statistics does not offer any insight into this crucial aspect of performance.

- However, *social exclusion* results form being *trapped* in a state of cumulative disadvantage. In order to identify how much this is the case, the above indicator needs to be supplemented by one which measures the extent to which the people identified in a given year as being among the poorest are regularly found in that situation or to a large degree move on to better circumstances. It is quite practicable for such indicators to be produced now, even though there will be a need to treat them with care and subject them to refinement.

- The guidelines should be extended to deal with the interfaces between education, training and the labour market. Indicators of changes in the volume of participation in and value of investment in education and training need to be incorporated into the routine monitoring and review processes.

- In dealing with the work and learning aspects of the performance appraisal, there should be a conscious attempt to look at the coherence of the 'model' being pursued explicitly or implicitly by the Member State concerned, i.e. the relationship between overall labour market regulation, co-ordination, and social benefits; between market and non-market strategies for investing in education and training; and between the innovation system, the extent of social partnership, and policy vis-à-vis the encouragement to develop high performance organisations.

- Additional guidelines should be introduced so that the Commission includes, within its scrutiny of the progress on policy, an assessment of the current quality of the audit, monitoring, evaluation and policy research systems of Member States and their plans for improving them. There should also be a report from the Commission or an independent body on the quality of its own systems in this respect.

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KNOWLEDGE-BASED ECONOMIES: THE EUROPEAN EMPLOYMENT DEBATE IN A NEW CONTEXT

1. INTRODUCTION

Knowledge is the basis of much behaviour: the search for and exploitation of it have been at the heart of social and economic development for centuries. Yet there are now claims that radical changes are afoot which will greatly increase the significance of and alter the pattern of knowledge production, dissemination and use. Countries and organisations that understand this and adapt to take advantage of the enormous opportunities in prospect will, it is argued, place themselves in strong positions to compete effectively in the global economy. 'Knowledge workers' will emerge as the dominant occupational group with high levels of education, continuing professional development, and autonomy. They will be the first to connect to the evolving global community – many already are.

Social exclusion occurs when a society fails to organise itself to ensure that all its members can participate. Those excluded suffer from a cumulative disadvantage which goes well beyond their individual characteristics and experience and extends to the local communities in which they live. There are personal, family and wider collective ingredients to the process of their exclusion. They will be the last to 'get connected' electronically as well as socially.

Knowledge workers and the socially excluded seem destined to live in different worlds. But where will the rest of the population who fall into neither group live and work? What are the mechanisms by which the knowledge-based scenario might be moulded to meet social as well as economic objectives? How distinctively different is this scenario in any case? Have management fad and commercial hype led to the coining of a new pseudo-intellectual currency? Are governments caught up in the global transmission of shallow thinking before having time to absorb the lessons of the recent past? If there really is something substantial amongst the speculation and rhetoric, how does it alter the balance of judgement about the feasibility and desirability of presently debated policy options?

This paper explores some of the key issues raised by considering the development of a knowledge(-based) economy or society. The focus is mainly on its potential consequences for employment as far as they can be discerned and on policy in the labour and learning fields. However, ideas relating to the knowledge society have a certain edge to them that goes beyond the socio-economic scenario they seek to characterise. They are heavy with implications for the *behaviour of the policy development system itself*. Perhaps it is this, as much as the substantive change allegedly under way, that calls for a sharper perspective on the European employment debate.

The remainder of this paper is in five main sections. Section 2 deals with the overall nature of the changes envisaged which make an appreciation of and responses to the potential implications of the knowledge economy appear so important. Section 3 examines the employment trends identified in some leading projection exercises and explores the key insights available from more qualitative studies. It then turns to the analysis of the ways in which the knowledge-based economy might reinforce or modify some of the underlying forces that are affecting the evolution of job structures and content. Finally, this section considers the forms of adaptation necessary at the levels of the 'organisation' and the 'economy' relating the discussion to the kinds of mechanism thought likely to promote high-performance enterprises, especially as they relate to knowledge production and transfer, initial education and training, and continuing professional development.

Section 4 turns to address the implications of the knowledge economy for the 'other world' of social exclusion, starting by elaborating what is meant by social exclusion and going on to see how the evolving knowledge economy could make it more difficult to achieve the frequently stated but modestly realised aims in this area of policy. It then looks at how wider participation might be accommodated within a 'knowledge *society*'.

Section 5 turns to the conduct of the policy community itself as it increasingly promotes the overall vision of the knowledge society and begins to reflect more rigorously about how its own role should be conceived and carried out. Section 6 summarises the main conclusions.

2. THE KNOWLEDGE SOCIETY AND OTHER METAPHORS

A word of warning is called for. Any brief statement of the main elements which might be said to comprise the knowledge-based economy will almost inevitably move back and forth across the boundaries between description, analysis, prescription and speculation. This is certainly, in part, because the thesis is still being explored in its own terms and the data to test its applicability are hard to acquire. It is also because its potential implications are so important that they need to be examined within whatever framework of analysis can be articulated now and with the data available for scrutiny now.

Moreover, as demography, technology and globalisation generate their various imperatives, the policy community produces and reproduces initiatives which aim to counter the negative and enhance the positive potential effects of change. One new vision follows on from another and the basic ingredients of policy are recombined and then further 'refreshed' (as those who view the world through a web browser might have it) even within the attention spans of the policy community and the media and during the life-cycles of the policy products the one seeks to promote the other.

The speed with which we have moved from the 'micro-electronics revolution', through 'information society' and 'learning society' to the 'knowledge society' is a case in point. These in turn are being increasingly overlaid by ideas which draw out the

deeper implications of 'networking' and 'weightlessness' with which they are also now associated (see, for example, Castells (1996) and Coyle (1997) and Kelly(1998)). Nouns and adjectives sometimes seem carelessly brought together, drawn out of a bag containing 'organisation', 'network', 'economy', 'society', 'age', 'information', 'learning', 'knowledge', etc. In another bag devoted to policy responses we find 'flexibility', 'skill', 'knowledge', 'competence', 'employablity', 'capability', 'enterprise', 'entrepreneurship', 'high performance organisation', etc. Verbs also have their place in the lexicon of scenario-makers: the economy is to be knowledge-*based* or knowledge-*driven*. And when all this is combined with the multitude of interpretations of 'globalisation' whether as a natural phenomenon or a policy choice by rich nations (Lindley, 1997a), we have a potent mixture for both confusion and glibness.

The visions switch their emphasis in rather subtle ways between acting as metaphors for a set of phenomena to which we must pay attention or to which we must adjust and conveying the nature of the adjustment being advocated. They vary, too, in the extent to which they deal with the 'economic' and the 'social'. Here, the *information society* is taken to refer principally to the enormous proliferation of information powered by the exploitation of micro-electronics and the first awakenings to its potential social as well as economic implications. The *learning society*, on the other hand, contains within it an embryonic design for modern living. This is heavily predicated on both the growing integration of information and communication technologies and fears of what globalisation is doing to European competitiveness. But it embodies flashes of positive thinking about the potential for widening as well as deepening the involvement of people in learning for life as well as for labour, throughout life as well as during the early years.

As for the *knowledge society*, what distinguishes it from the *learning society* is the view it takes of long-run structural change in the economy. The vision is that the production, dissemination, and use of knowledge will take on a far more prominent role as a source of wealth creation and exploitation. There is much greater scope for codifying knowledge, abstracting it from its context, and this makes it potentially more accessible and marketable. At the same time individuals and organisations are likely to differentiate their performance from that of others by how they handle knowledge. An important aspect of this is the relationship between 'explicit' knowledge and 'tacit' knowledge. Organisations that are able to adopt ways of working that encourage the identification and sharing of key elements of knowledge which have hitherto been only tacit amongst their employees, sub-contractors, etc. are likely to be more effective. Thus, a radical diversification in the location of knowledge production within the sectoral and organisational structure of the economy is envisaged (Boisot, 1999). Many more organisations will quite genuinely be engaged in producing and disseminating as well as using knowledge.

The *learning society* and *knowledge society* scenarios have complementary implications for individuals as they progress through life and for the organisations with which they are involved. The former emphasises that learning should be a continuing activity. People should spend more time on it and the opportunities provided should be of a high quality suited in content and delivery to the needs of different groups of learners. The latter points to the importance of recognising knowledge as an asset whose nature and location need to be carefully monitored

and developed, along with the conditions that govern access to it. This is all the more crucial in periods of radical adjustment where an organisation's knowledge base can easily be damaged through poorly designed changes implemented quickly. Many of the failed attempts at business process re-engineering, for example, can be attributed to lack of attention to the relationship between human resource and knowledge issues.

Up to about the early 1990s, the industrial world seemed to be moving in a direction where flexibility, shortening of contracts, narrowing of commitments, and the replacement of principle by pragmatism would become the accepted way of conducting economic and, even, social life. Commitments to tackling social exclusion at the same time as these moves were afoot were evidently wearing thin. But, as the correction of past mistakes of macro-economic policy began to bear fruit and, at least, some labour market rigidities were being addressed (see section 3), the vision being explored started to alter in character and became what is now called the knowledge economy/society.

It is not then enough for people and organisations to embrace a 'learning culture'. New forms of management, participation, collaboration and contractual relationship need to be explored in order for them to prosper in a more knowledge-intensive environment. Several authors have argued that this will involve re-casting present approaches to human resources at various levels in the economy and society in order to get the right fit between the market for knowledge *per se* and the markets for work and learning.

Consideration of the knowledge society inherently blurs several boundaries which have hitherto governed our thinking, especially those between 'the economic and the social', 'the market and the organisation', 'competition and collaboration', 'companies and communities', 'consumption and investment', and 'work, employment, leisure and learning'. Yet this seems essentially to reinforce what has already been going on during the last decade and, in some cases, well before that. What is more significant is that the ground is shifting in several adjoining areas *together* and producing a *cumulative* effect upon the overall landscape of change The policy and scientific communities will need to strike a balance between, on the one hand, communicating the importance of potential change so as to encourage adaptive responses and, on the other hand, providing some continuity of thinking so that people do not become disorientated.

3. LABOUR MARKETS AND THE KNOWLEDGE ECONOMY

The background paper by Boyer (1999) deals with the macro-economic policy record and institutional frameworks for reconciling different economic and social objectives. Here, very brief reference in section 3.1 will be made to the wider labour market context within which the development of the knowledge-based economy might occur. Section 3.2 then considers the main employment trends and projections with a particular focus on the US evidence because of the more advanced stage of transition apparent in that economy. Skill shortages and skills gaps are also noted in general terms but it is beyond the scope of this paper to review the detailed evidence

of the extent of these in the US and Europe. At the same time, as will be shown, one feature of the knowledge-based economy is that it lends a different perspective to looking at such phenomena and it is on this that the focus of the paper dwells.

More qualitative evidence is then summarised in section 3.3 and the ideas of the knowledge-based economy explored in the light of the key features of occupational change which have been identified. In section 3.4, the discussion moves from the occupational level to the organisational strategies that affect the structure of jobs and then to the institutional and policy context with which the section began. Finally, in section 3.5, two particular issues are taken up: the role of professional highly qualified people in affecting change and the future place of the universities in the knowledge-based economy.

3.1 Job Creation Records, Flexibility and Employment Systems

There are four main reasons why the record of the US is of particular relevance to the EU employment debate: (i) its performance in terms of output, productivity, employment generation, unemployment and average per capita income is far superior to that of the EU and, indeed, Japan, (ii) moreover, it has *increased* its lead in terms of growth and productivity, especially during the last decade, so its current position is not simply due to some legacy of the past, (iii) it has consistently adopted very different approaches to certain areas of policy compared with those of the EU, notably in the labour market, and (iv) the US exemplifies a high commitment to innovation and is much further on towards embracing notions of the knowledge-based economy.

About 25 years ago, the 'EU' (equivalent to the present Member States) employment rate was slightly above and its unemployment rate substantially below the corresponding rates for the US. Since then the EU employment rate has fallen from 64 to 61 per cent while the US rate has risen from about 62 to 74 per cent. This, difference, in itself, need not be a problem since one of the best ways of benefiting from economic growth may be to enjoy more leisure and spend time on other non-market activities. A small fall in the employment rate could be quite compatible with growing well-being. However, among those who are recorded as members of the EU labour force, the unemployment rate has risen from 4 to about 10 per cent and, on the face of it, that *would* seem to be a problem. In contrast, whereas the US unemployment rate was double that of the EU 25 years ago, it is now half the EU rate.

Nonetheless, there are other features of performance that need to be taken into account before we conclude that the overall employment situation in the US is one which Europe would really do well to aim for.

(a) The quantity of employment in terms of total hours worked per year, rather than simply people employed. Allowing for differences in working hours would actually increase the employment creation record of the US relative to that of the EU by about 4 per cent.

(b) The quality of jobs in terms of:

- the pay and other conditions of employment
- the skills deployed
- the opportunities for advancement through experience and continuing development.

(c) The duration of stay in poor quality jobs, allowing for recurrent spells in such jobs.

(d) The duration of stay in unemployment, allowing for recurrent spells of unemployment.

(e) Participation in measures to enhance short-term and long-term employability (assistance with job search, work experience, training, post-compulsory education).

(f) Wider socio-economic conditions which may be linked, at least partly with the labour market strategy of the US relative to that of the EU:
- those which seem to be fairly direct consequences of the strategy and are likely to carry over to the EU, even allowing for differences in underlying conditions and the specifics of implementation;
- those which are associated with the US employment situation but are more likely to stem from other features of its economy and society and would probably not carry over to the EU.

Essentially, the main conclusions from recent studies of the US experience which try to explore the above aspects is that there is a substantial problem with job quality, inequity *and* social exclusion. In other words the vision of dynamic job creation in which there are many poor jobs but these serve as the initial rungs on the ladder of upward occupational mobility does not quite ring true: higher inequality within the population or among households at a *point in time* does, after all, mean higher inequality as measured over *lifecycles*.

There are many comparisons of economic performance among the industrialised economies. The OECD's (1994) *Job Study* is especially important because of the extent of its analysis, the fact that it concluded by placing great emphasis on differences in labour market regulation as an explanation for the relatively poor performance of Europe, and the OECD's subsequent follow-up of progress in adopting its recommendations. This is not to say that there has been exactly complete agreement that the OECD has assessed appropriately the evidence or that its preoccupation with promoting 'labour market flexibility' has been well-judged. The evidence which is accumulating would now seem to suggest that the importance of de-regulation has been overstated (Grubb and Wells, 1993; Lindley, 1997b; OECD, 1994 and 1999; Nickell and Layard, 1998).

A broad conclusion would be that the main reason why unemployment is now lower in the US relative to Europe is because compensation for lack of work via unemployment insurance ceases much earlier in the US. This represents a social policy choice and has less to do with the relative degrees of labour market regulation.

A further conclusion is that what is substantially affected by regulation is not the *level* of employment in relation to the population of working age but the *pattern* of its

distribution among different forms of work (degrees of security - 'permanent', open-ended, fixed term, temporary, casual; employee and self-employed; full time, part time, over-time, shift work, Sunday work and other working hours arrangements) and among different socio-demographic groups. So labour market regulation and the terms governing social security benefits both primarily affect equity not efficiency.

3.2 Occupational Employment Trends

Differences in the performance of European and US innovation systems, the growth of ICT-based industries and ICT-related services such as e-commerce are dealt with in the background paper by Soete (1999). The aims of the present paper are to examine the overall patterns of employment in quantitative and qualitative terms from the perspective of ideas about the knowledge-based economy. Since the US government provides much more extensive information and analyses of potential changes in employment and the US is well ahead in the kinds of innovation that are leading to the knowledge-based economy, it should be especially useful to examine the main features of the latest projections released in 1997 (Table 1).

In broad terms the fastest growth is expected to arise in managerial, professional and technical occupations, all of which are associated with high levels of education and training, and among so-called 'service workers', a rather hybrid category comprising medium-to-low levels of skill, depending on the service activity in which they are engaged. More detailed projections show that there is great diversity among the fastest growing occupations as regards their industrial context and education and training requirements. Certainly IT-related occupations are in the top three positions: 'database administrators, computer support specialists and other computer scientists', 'computer engineers' and 'systems analysts', all of which categories are projected to double their employment in the decade to 2006. But the picture is not simply one of burgeoning growth in occupations directly related to the IT sector or to specialist IT occupations elsewhere in the economy. Indeed, perhaps the most striking findings are that over half of the top 20 growing occupations are associated with the health sector and over half require education and training which is significantly *below* that of a bachelor's degree. This is further reinforced by examining the occupations which account for the largest absolute increases in employment. The diversity is then even greater and more than two thirds require less than a bachelor's degree; over half actually only require short-term on-the-job training.

In fact, looking at the overall assessment, we find that a third of employment growth is in occupations that require a bachelor's degree or higher and a third require only short-term on-the-job training. Of course, great care is needed in the interpretation of projections of the growth of different occupations. Aside from the uncertainties attached to such exercises, the projections do not indicate the job openings that are likely to arise since they do not allow for mobility between occupations and retirements. When these are taken into account, the job openings for those with bachelor or higher degrees account for almost a quarter of the total and those needing only short-term on-the-job training account for over 40 per cent.

Concern over skill shortages has inevitably arisen as the US has experienced roughly eight years of expansion. Most prominent in the media have been claims of shortages in the IT area but these have also been accompanied by reports of shortages of construction labourers and craftsmen, registered nurses, and teachers. Veneri (1999), however, concludes that dramatic stories of shortages, high earnings potential and an over-heated hiring climate for information technology workers do not really square with the facts. The evidence is more in keeping with a conclusion that stresses *the similarities of their situation with that of professional specialists in general.*

Of course, this does not mean that significant shortages may not arise in the future, whether in the US or the EU (though the supply-side behaviour of these countries differs greatly). What is worth noting, however, is the similarity of the diversity of occupations involved when identifying the sources of employment growth in the US and those identified in a wide range of more *ad hoc* studies for the EU. The need for much more systematic European assessments of future scenarios will be discussed in section 5. However, selections of findings for Sweden taken direct from the official web site and for certain other Member States taken from a recent *ad hoc* projection exercise are presented in Tables 2 and 3. They show the importance of the growth of management, professional and intermediate occupations, but also the hybrid 'services' mentioned above in connection with the US. They also display considerable variation in the absolute and relative growths of occupations across countries.

Taking the evidence reviewed so far, one particular sectoral perspective consistently emerges. Strategies which increase the knowledge-intensity of services and not just the skills of those supplying services in their *existing* forms will be especially important. The potential demand for more education, training and continuing professional development may neither materialise in the first place nor be satisfied adequately without major reform. What should the balance between state and private funding be? What options are most promising for the role of government in modernising and regulating markets for such services so as to increase demand, quality of service and the quality of jobs? Health and personal care are also key areas where rising demand through population ageing sets the scene for opportunities to implement more knowledge-intensive, job-creating, yet inclusive approaches to personal services.

3.3 Qualitative Dimensions and the Concept of Practice

The examination of likely employment trends in the previous sub-section needs to be given a more qualitative perspective. Reviewing occupational change in industrialised countries over the last two decades or so, several features stand out in virtually all such economies. These are summarised in Table 4. They may also be taken together with another set of quite common features of the skills debate in different countries that relate to the emergence of concern about so-called *generic* skills; these have also been termed 'basic', 'core', 'key', or 'transferable' skills but are now usually seen to relate to:

- communication – literacy

- application of number – numeracy
- problem solving
- working with others
- improving own learning and performance
- knowledge of information technology – computer literacy.

There is some controversy over defining these, over how best they might be acquired, and over what value the labour market actually places upon them in practice (as opposed to the significance attached to them by employers when responding to surveys and in case study interviews) (Green, 1999). The evidence is rather weak on the extent of the growth in importance of generic skills relative to job specific and occupation specific skills (those linked, respectively, to the particular situation of an employer or to a particular occupation carried out in ways which are more or less common to many employment situations). On the other hand reliable methods of monitoring their significance have yet to be devised and incorporated into suitable survey instruments.

For those jobs that do survive change and those that emerge from it in quite new forms, there is a broadening of the context in which people work, an increasing range of options as to how to do the job as it is, frequent re-assessment (though often implicit rather than formal and explicit) of its relationship with other jobs in the organisation as new tasks appear on the boundaries between them, and periodic reviews of the activities undertaken by the organisation as opposed to those that are or could be undertaken by suppliers and customers.

The implication of the above is that workers increasingly do have a notion of their 'practice' derived from reflecting on what they do and why they do it that way rather than another way. Reflection may, moreover, bring out the *tacit* knowledge that the individual employs in acting in a particular situation but which is inherently more difficult to communicate than the explicit knowledge or skills that form the focus of education or training. For that reason it may be the factor that differentiates the performance of one individual from another when access to other forms of learning is otherwise the same. And at the organisational level, if employees can actually *share* tacit knowledge, it may be a key factor in determining overall performance and success vis-à-vis competitors.

If the individual is to reflect on her or his practice and share those reflections with other workers, it is a relatively short step to reflection on the practices of those around them. Not all tacit knowledge may be seen to have equal value just because it is tacit. The opportunity to learn from others is tempered by the threat of discovering that one's own practice is rather inferior. Thus the kind of co-operation and trust required to identify and share what would otherwise remain tacit knowledge cannot be assumed to be present automatically. Nor can it be assumed that workers who may be willing to share with each other in very informal ways would wish to share with the organisation. It is here where the attention paid to the nature of knowledge and skills in relation to occupations comes together with that paid to the idea of the high performance organisation and to the conditions likely to give rise to their creation and flourishing in the modern economy.

3.4 Organisational Styles, Social Partnership and the High Performance Organisation

At the heart of the issue is the tension between encouraging individuals and work groups to reflect on *their* practice and refine the knowledge they have, communicating it to others in the interests of the organisation as a whole and *a reluctance of the organisation itself to reciprocate*. The deal needs to be different in order for the organisation to adapt to changing external conditions and to initiate from within change which will require other organisations to respond.

A *learning organisation* is one in which people are able not only to update continually their knowledge and skills but also to learn from the mistakes they will nonetheless make individually and collectively, however competent they are. The *knowledge-based organisation* is located in or across sectors of the economy that trade intensively in the creation and exploitation of knowledge. A crucial competitive advantage will be how it handles its own knowledge of what it is doing and the intangible assets intimately associated with its main activities, especially its intellectual capital (Stewart, 1997). Its other assets, such as possession of highly valued physical assets, access to cheap energy sources, favourable spatial location with respect to suppliers and customers, and even current market position will be of much less importance. In these circumstances the knowledge-based organisation must be a particularly effective learning organisation but the central human resource management task is to *manage knowledge*. Indeed, the research focus on the learning organisation has been gradually replaced from the mid-1990s by that on knowledge management (Scarborough *et al.,* 1999).

The importance of generic skills seems to lie in the capacity to cope with and contribute to the change process. Job-specific and occupation-specific skills do not adapt easily without broader knowledge, skills and attitudes to change. At this point, the consideration of occupational change and the widespread importance attached to generic skills meets the discussion of organisational styles that will promote a knowledge-based economy. The scenario is one in which, over increasing areas of the occupational map, people are being asked to take more responsibility for their work situations: for getting the knowledge and skills to do the job in the first place and updating them appropriately, ensuring they have the information they need to carry out their jobs, responding creatively to changing requirements, and taking the initiative when they see potential for developments which will benefit the organisation. The organisation must, for its part, facilitate this process, i.e. 'empower' the individual and work group to play this role.

Notions of the high performance organisation began to emerge in the employment policy debate partly as an antidote to simplistic ideas of what to expect from labour market de-regulation and the preoccupation with 'unburdening management' by removing constraints on their prerogative to manage. Much less attention was given to the idea that there were shortages of good managers and good organisational designs and that this might have equal or greater significance for the performance of the labour market and the economy at large. The contribution of the European Commission and some Member States in trying to enrich the social dialogue process by seeking shared understanding of what forms of organisation seem to work has its

counterparts in the US, although under very different institutional conditions. The Commission on the Future of Worker-Management Relations, established by the Clinton Administration in 1993 particularly sought to identify the characteristics that mark out the high performers. One of the Commission's members, (Marshall, 1994, 1998) has summarised these and they are reproduced in Table 5. More recently, Gray *et al.* (1999, p.29) report the results of a survey which point to a 'clear trend ... in which firms are progressing towards a new collective bargaining paradigm' involving some sort of 'partnering agreement'. The 'Compact for Change' issued by the labour-management Collective Bargaining Forum in 1991 provides the structure for the survey analysis and is shown in Table 6. Such ideas would not be out of keeping with European social dialogue themes promoted during the 1990s and are clearly in tune with the organisational characteristics sought in the knowledge-based economy scenario.

3.5 The Knowledge-based Economy: The Roles of Professionals and Universities

Harnessing the expertise of the highly qualified – A new professional ethic?

There are a number of cross-cutting themes which emerge from discussions focusing narrowly on the knowledge-based economy and those which look at its implications for society. The importance of the so-called 'professional project' has clearly increased and will do so further but the principles determining how it should be handled are still very much un-debated. The work of Schön (1983) and collaborators, for example, focused on the nature of professional learning ('knowing in practice' and 'reflection in action') and the institutional and market contexts in which it takes place but has not considered how different interpretations of the role of, in Reich's (1991) terms, 'symbolic analysts' would have quite different consequences for the relationship between economy and society.

In particular, the potential enrichment of occupational roles of those supporting the work of professional occupations comes up against the potential 'hoarding' behaviour of professionals when facing risks attaching to their own positions and the facility offered by ICT to substitute their own work for that of others, even if this represents a denial of the basic principle of comparative advantage.

In addition, to the possibility of professional hoarding at the individual level, there is the powerful instinct in a number of occupational areas in favour of professional 'solidarity'. This consists of a *reluctance to differentiate fundamental roles and levels of competence within the profession*, as well as defending the profession's position from competition from the intermediate or para-professional level. This, inevitably, delays or blocks the development of modular structures of education and training, as well as rigidifying the occupational structures to which they relate. Overlapping career paths which would facilitate upward mobility are thus poorly developed in a regime characterised by professional hoarding and solidarity.

In terms of the economy, the consequences of the market power already held by certain groups can be a miss-allocation of the highly qualified leading to bottlenecks at higher and lower levels of professional work which limits the scope of job

generation further down the occupational hierarchy. This leads to having the worst of both worlds.

In the dynamic context of the knowledge-base economy it seems that a new professional ethic may be required to match that of 'work sharing' hitherto, often in the context of agreements between the social partners. This ethic is that of 'knowledge sharing' in which an obligation is placed upon professional groups to seek out ways of structuring work so as to generate occupational profiles that reach across the gap between professional employment and skilled industrial or office-based work. At the same time, in constructing these occupations, it is essential to avoid creating new types of barrier to entry which undermine the scope for achieving equal opportunities as the same time as benefits to business. It is not too far-fetched to think in terms of 'fair employment structures' and a forum or agency responsible for identifying problems of access to and limited development of different parts of the occupational structure.

Thus many of the possible paths on the new and evolving landscape cut across the vested interests of the growing numbers of highly qualified professionals. Yet governments will need to harness much greater commitment from professional groups to think creatively and in socially responsive ways about how to reap the benefits of the knowledge-based society. How we promote occupational enrichment and open employment structures rather than produce polarisation within closed structures will be an especially important issue.

At the same time, the relationship between employment in an occupation and the focus of 'formation' differs greatly between areas such as the law, medicine, education, management, engineering and science. In periods of growth, the work of science postgraduates can in effect remove the need for a substantial part of what would otherwise be more conventional intermediate-level employment but there then arises a problem in situations where the knowledge production system, having relied upon students, loses its attractive power and has rather poor arrangements in place to replace them with more fully thought-out occupational roles.

The relevance of this to the knowledge-based economy is that an increasing number of activities will begin to look like one or more of the knowledge production contexts found in universities and *vice versa*. Indeed, at a more general level this has been one factor behind the creation of 'corporate' universities by certain companies. It is also relevant because of the increasing importance that is likely to be place upon the role of the universities in knowledge-based economies.

Learning, labour and innovation

In the knowledge-based economy, the learning, labour and innovation systems will be linked much more intimately. The first of these will not simply provide highly skilled labour, basic research and strategic research for the innovation system to incorporate into products and processes. This linear model has long been out-dated and many of the leading European universities have been involved with industry for many years (Gibbon *et al.*, 1994).. The key characteristics of this relationship at its best has been *interaction*. Moreover, this needs to be the norm for the future rather

than a characteristic displayed by particularly innovative universities. Universities or their equivalent, will be transformed by far more 'engagement' with

- other major producers and users of knowledge outside the university and other parts of the publicly funded research system;
- a variety of intermediaries concerned with more intensive knowledge transfer activities for and with small and medium-sized enterprises (SMEs);
- continuing professional development building on (inter)national reputation, regional and local association as well as alumni relationships in which 'graduation' is merely the start of a process of deepening and broadening the knowledge base and higher-level generic and occupationally specific competencies sought by the individual, with varying degrees of involvement of employers;
- regional economic development strategies in which they will play an active part not merely in helping to implement but in helping to construct;
- and local communities.

The importance of the transformation of universities from exclusive producers of knowledge and educators of the highly qualified to partners in complex networks which go far beyond the pedagogical and scientific boundaries of their traditional roles should not be under-estimated as a major force in the development of the knowledge-based economy and society. Great changes in culture, management and structure of these institutions will be needed if the societies within which they are embedded are to benefit fully from their potential. Moreover, the contrast between the allegedly aloof world class universities and their lower class cousins who participate regionally and locally to make up for lack of academic excellence will be seen for the myth it really is. The best universities already make enormous direct as well as indirect contributions to their regions. Those institutions which wish to emulate them will need to take this role on board as much as the conventional academic profile they naturally aim to pursue.

Essentially, universities have an opportunity to become major animators and participants in networks of *practice* as well as networks of knowledge production and dissemination. Engagement with the world of practice is also partly because the professional development role will only be sustainable if there is within the body of university staff a strong contingent of those who are experienced *in professional practice* as well as having the necessary academic track record. The meaning of this will differ from discipline to discipline and will, inevitably have implications for the balance of power between disciplines and, indeed, between them and multi- or inter-disciplinary endeavours.

An important issue for universities and other educational and training institutions will be the extent of their involvement in and the division of labour between them in the initial training and continuing development of *para-professional or intermediate occupational groups*. This is partly related to the fact that, as higher education expands, increasing proportions of graduates are finding not just jobs but careers in these areas of the occupational spectrum. This generates a supply-side impetus for changing the profiles of the existing occupations somewhat. In some areas this is reinforced from the demand side as both the knowledge-base for their work and the

range of functional roles they play are extended. There is then a potential overlap between the routes to the 'formation' of these new cadres and those of the professional groups with whom they interact. This raises questions about the appropriate institutional location of different parts of their education and training and the incorporation of work experience. It all places the structuring of the profession concerned on the agenda.

This also draws higher and further (non-higher, post-secondary) educational institutions deeper in to the process of *professionalisation* of certain groups. There is great potential for collaboration between the two sets of institutions in delivering an increasingly diverse range of vocational higher education as new professions and para-professions form out of the evolving job structure. This would reinforce the kinds of collaboration which have developed between institutions of further and higher education in order to facilitate the greater access of those social groups who are still poorly represented in higher education.

4. SOCIAL EXCLUSION AND THE KNOWLEDGE ECONOMY

This section deals with social exclusion only in relation to the labour market, skill acquisition, and economic development. The background paper by Esping-Anderson (1999) covers the sustainability of European welfare states overall, including a discussion of population ageing.

4.1 Skills and Qualifications: Relationships between Objectives

Previous research and policy statements at national and EU level have stressed the scope for achieving greater competitiveness through increasing skill and the overall enhancement of the qualifications and competencies embodied in the population. They have also identified the particularly important mechanisms by which industrial re-structuring can be hastened by paying more attention to the human capital needs of those sectors which are seeking product market positions in higher value added segments.

Equally, where it is necessary to redeploy the labour force from industries with rather poor prospects of movement up the value-added hierarchy to those with better prospects, there is a potentially key role for vocational education and training in helping new industries to grow more rapidly than would otherwise be the case and in assisting members of the labour force to switch into the jobs being created.

However, the pursuit of faster growth through investing in the skills needed by developing industries and through minimising the drag on the economy from too slow a withdrawal from less promising sectors will not necessarily have much effect on social exclusion. Unemployment in Europe is too high to assume that the natural process of recovery and expansion in traded goods and services will draw back into productive employment those who are most marginalised. The queue is too long to rely upon this mechanism. Nor can it be assumed that much more competitive manufacturing and traded services allow the more labour intensive activities,

producing mainly non-traded goods and services, to expand through fiscal stimuli in the form of higher public spending and lower taxes.

4.2 What is Social Exclusion?

Furthermore, the relationship between unemployment and social exclusion is a complicated one. Not all the unemployed are socially excluded, some are just unemployed. Some of the excluded are employed and whilst their jobs are not confined to the informal sector their work is characterised by a degree of uncertainty about continuity and the pay and conditions received which is reflected in the precariousness of their economic lives.

On the other hand, the socially excluded are not just the 'working poor', the long-term unemployed and their dependants. There are several ingredients to their situation. They lack citizenship in the political sense as well as in social and economic terms. They lack access to power through those able to represent their interest and improve their status. They lack access to resources in general because the public institutions are not at their disposal but are rather more concerned to contain or control the problems which the socially-excluded 'create'. They have limited access to education and training beyond the stage of compulsory schooling. They lack access to networks which help to mobilise mutual support and share information and advice. They lack access to an effective financial and social 'safety net'. Overall, the socially excluded suffer from cumulative disadvantages that frustrate their attempts to escape and gradually reduce their motivation to try out new strategies.

If we consider the contours of socio-economic exclusion, there are familiar associations between certain characteristics of individuals and groups and the extent to which they live at the margin of society. Certain combinations of such personal characteristics as gender, age, disability, ethnicity, nationality or citizenship status tend to be associated with forms of social exclusion. The same is true of family or household characteristics relating to family composition, personal attributes of other family members, position regarding income and wealth, and spatial location. So, for example, those living in single parent families, households with other members who are unemployed, less developed rural areas, disadvantaged inner city areas, and poor climactic environments are likely to be at risk of persistent marginalisation.

Whilst personal and family characteristics may be strong determinants of the probability of social exclusion especially among young people, individual experience is also relevant. The extent of effective socialisation, education and training is of special importance: those provided with basic literacy, numeracy, social skills and the cognitive and manipulative skills required in reasonably promising occupational areas are less likely to experience a succession of precarious jobs. But, regardless of such preparation for working life, the effect on both the individual and prospective employers of a recurrence of spells of unemployment may be such as to discourage the former from trying to find work and predispose the latter against offering it. Finally, the extent to which a person has engaged in non-market activity will affect their labour market potential. In particular, the valuation of competence displayed outside the market place is typically lower than is justified, especially in the case of women seeking to re-enter the labour market after a period involving the care of children or an infirm relative.

4.3 How Does Social Exclusion Arise? - How is it Fostered?

From the above, we might conclude that there are several ways of becoming socially excluded. It is possible to be born excluded, to slide into exclusion through the declining fortunes of one's family or one's own working life, or to be overtaken by exclusion triggered by political or economic change. In the last of these, political or legislative change may alter the status of particular groups (such as migrants or certain classes of nationals) or major reversals in the conditions governing a sector may dramatically affect the prospects for some of its workers, plunging the youngest and oldest into prolonged unemployment. Of course, cohesion of the local community may be sufficient to prevent the latter leading to exclusion; as noted earlier, unemployment is neither a necessary nor sufficient condition for exclusion.

Whilst social exclusion may arise out of an unfortunate combination of circumstances that propel certain people or groups to the margins of a society, there are structures that foster exclusion. Mention has already been made of social and political factors but there are policy stances which tend to create or fail to remove conditions that militate against the fortunes of the most vulnerable social groups. First, even with extensive public education, the tendency for the system to stratify itself has led to very poor preparation for working life for the least able in many countries. Moreover, there is a tendency for access to initial and continuing vocational training to be determined mainly by the possession of an employment contract. This means that in a period of high unemployment some members of the labour force will experience great difficulty in obtaining adequate training to enable them to get secure employment.

Second, segmentation and discrimination in the labour market serve to reduce the opportunities for some groups almost regardless of how capable they are of doing the jobs available. Third, the way in which pay and other conditions of employment are structured tends to generate marginal job categories even in sectors offering high quality jobs. Limited job security, low pay and exclusion from the company pension scheme lead to poor pensions and the risk of impoverishment during retirement, when the opportunities for supplementing income through taking paid work decline markedly.

Finally, the experience of prolonged recessions and the persistence of high unemployment in Europe means that the labour market structures that foster social exclusion have had even more marked effects, particularly the growth of long-term unemployment and the creation of high levels of youth unemployment. These conditions are unfortunately highly conducive to reinforcing tendencies towards exclusion.

4.4 Social Exclusion and Skill

This brings us to the relationship between social exclusion and skill. The current situation in the EU presents a number of problems of diagnosis. The presence of a disproportionate number of unskilled and unqualified people among the unemployed has led some policy advisers to conclude that the remedy is to provide more educational and training opportunities for the unemployed. Data are frequently presented to show the much higher rates of unemployment and long-term

unemployment among the least educated and trained (Figure 1), the longer cumulative life-time spells of unemployment which they experience (see the estimates for men in Table 7), and their very low relative income (Figure 2).

However, this does not take sufficient account of high levels of unemployment and the extent of 'educational crowding out'. If the untrained are unemployed because more qualified people are moving down the job hierarchy in search of work, displacing the less qualified, this does not mean that training the most disadvantaged unemployed will substantially improve their employment prospects or their productivity in those jobs they are able to obtain. Their competence to do the jobs is not necessarily in question, it is their position in the queue which is enhanced at the expense of someone who is even less well-qualified. In these circumstances, training the unemployed may simply concentrate further the incidence of unemployment upon those who do not receive training.

Evidence on 'over-education' or 'under-utilisation' of skills is difficult to collect in an internationally comparative context and over time but organisations across Europe as well as in the US would seem to have considerable margin for enhancing the contributions their staff could make (Tables 8 and 9). The picture is related to under-utilisation of the skills of older workers and of women seeking to return to the labour market. This is apparent, in the case of the former, from the tendency to externalise the employment adjustment required in the face of changing trading conditions through resorting to redundancy and early retirement rather than redeployment. In the case of women, it is apparent from the difficulties they often face in returning to the labour market without passing through a stage of downward mobility in which they are obliged to work at a level significantly below their competence or in another type of occupation not requiring their training.

4.5 'Human Resource Regimes' to Reduce Social Exclusion

The above considerations point to an alternative strategy that might benefit the least advantaged more than would targeting resources upon their own training. This is to concentrate on training at the intermediate occupational level in order to remove skill bottle-necks (Lindley, 1991). This would reduce the extent of educational crowding out because those with the ability to do so would train or re-train at the intermediate level rather than filter down, displacing people below them. It would also help to generate more jobs elsewhere in the occupational structure by rendering possible more growth than would have been possible under a skill shortage regime.

At the same time, however, there are labour market and training measures which would help to combat social exclusion through more direct assistance to vulnerable groups. This is not to say that such measures are the most significant ways by which to reduce social exclusion; other broader political and social initiatives are also needed if the conditions of those most affected are to be ameliorated. But several positive steps could, nonetheless, be taken to combat social exclusion via the labour market.

The first is to seek to increase opportunities for higher quality output and jobs in sectors hitherto associated with rather poor conditions of employment: textiles,

tourism, and hotels and catering would be examples of this. Support would be necessary through developing training to sustain the emerging occupational structures required to facilitate this strategy.

The second measure is to seek to reduce the risks faced by those who must operate within very tight family budgets with no room to cope with uncertainty, for example, concerning eligibility for social benefit payments or training grants if they were to become involved in training or work experience schemes.

Third, there is a need to provide sustained support through the employment services helping individuals to develop back-to-work strategies and providing the resources needed for effective job search.

Fourth, there is a need to get the policy balance right in a number of related areas, bearing in mind the particular perspective of the most vulnerable groups. These include the balance between:

- providing education as opposed to training;
- initial as opposed to continuing training;
- off-the-job as opposed to on-the-job training;
- training via the internal labour markets of companies rather than the external training market with courses being more accessible to those without jobs;
- and training for the employed as much as for the unemployed (see the example of intermediate skills discussed above).

However, the above strategy which is basically now being pursued by many Member States can often distract our attention from the key factor of *cumulative* disadvantage in fostering social exclusion and the fact that this is usually expressed in a *local and collective* terms not in *global and individualistic* terms. Moreover, the chronic and persistent nature of social exclusion when it does occur raises questions of balance between the use of *regulatory as opposed to fiscal measures* in different market and non-market contexts in order to achieve significant improvements.

Thus, regulating for rights and responsibilities in the labour market (Lindley, 1993) may serve the interests of both efficiency and equity but there is a potentially more effective way of delivering key social policy objectives for the socially excluded. This is, first, to step partly outside the market and switch from regulatory to fiscal policy instruments concerned with such matters as basic incomes and the quality of general educational opportunities for families and individuals. The second is to work on the boundaries between market and non-market, and to seek to meet both unmet social need as well assisting the transition of people back into mainstream employment. This is a matter for local socio-economic development and the use of forms of social enterprise and local partnerships. In the knowledge-society context, moreover, attempts to ensure that the socially excluded do 'get connected' need to be seen not, initially, in terms of ensuring that such households have PCs and internet access but in much less atomistic terms. 'Social connection' will be needed to provide the resources needed to sustain an effective internet connection, not the other way round.

In essence, the relationship between skills and social exclusion is much less direct than we would like to be the case. The prospect of tackling exclusion through investing in human capital within the framework of existing labour market and training market structures might appear at first sight to be the most straightforward approach. It is tempting to update this by simply adding another investment component dealing with communications and the internet. However, a significant part of the problem derives from the structures themselves. Reform must, therefore, proceed on a broader front if social exclusion is to be tackled seriously in a period of still high unemployment against the background of the emerging knowledge economy and the unfolding of more ambitious designs for a deeper and wider EU.

5. POLICY DEVELOPMENT AND THE KNOWLEDGE BASE

The implications of the knowledge-based economy are that it will have pervasive effects not only on those sectors that have already been identified as being in the forefront of the development of the information society. It will also affect most if not all other sectors and will have a profound impact upon society at large. Indeed, whether threats are turned into opportunities and whether opportunities are then grasped will depend enormously on achieving a *widespread* appreciation of what is going on. There is a need for a mutually reinforcing relationship between pressures from the demand side as well as supply side in the markets for knowledge, learning and work.

Perhaps, most fundamentally of all, producing the more positive outcomes will depend on how far people first *look to their own practice* rather than advocate changes to that of others. This applies to the policy development system as much as to the parts of the economy and society it seeks to influence. This section deals with the implications of the knowledge-based society for the policy community and for the framework within which policy and practice might evolve together in the education, training and employment policy fields.

Here we are concerned, first, with how the policy community organises itself so as to understand the ways in which the environment for work and learning is changing and what range of future scenarios needs to be explored; and, second, with the sharing and scrutiny of performance in relation to policy experience and the development of progressively more rigorous methods of evaluation.

In the light of the subject matter of the previous sections, three issues are particularly important. The first is the need to pay special attention to the activity of the services sector where the potential for employment growth is concentrated; the second is the need to adjust our thinking so as to decide upon the relative importance of different perspectives on the knowledge-based economy and how this should affect the policy process; and the third is to focus much more on the situations of the socially excluded and the wider group of less well-placed people in society when assessing performance.

The main points made below are necessarily expressed without much discussion or qualification in a paper of this kind but it is worth stressing at the outset that the neglect of some of these apparently technocratic matters does represent a problem generally for the EU if it is to put a knowledge-based policy development system into effect.

5.1 Monitoring and Assessment of Where the Economy and Labour Market are Going

The economic information system is under major strain

- The central information system is ageing as well as the population. Its degeneration has been greatest in the areas where there is most uncertainty

about the nature of the socio-economic change taking place and about its implications for work, learning and social exclusion.

- It is ironic that, at the very time when more accountability auditing is being introduced by governments to monitor the performance of public services, regulated industries, and competition policy at the micro levels of the economy, that their ability to measure the volume and quality of output and labour input (and hence productivity) at the macro and meta levels is proving to be so inadequate.

- New approaches to measuring economic activity in services and to the definition of the 'production boundary' which determines what is officially counted as 'economic activity' must be explored in order to retain an adequate picture of what is happening to the economy and society. The debate has barely begun as to how this should be done and how we should use the resulting knowledge base more effectively to develop policy suited to the new socio-economic environment. Surveys of time use will need to be carried out more intensively and, along with surveys of opinions of services used and their quality, their results will need to be incorporated into the basic data collection system underpinning the national accounts statistics.

The need for more sophisticated monitoring instruments concerning knowledge, skills and social exclusion

- Although there are periodic research projects that study skill acquisition in relation to competitiveness and poverty, the indicators used in performance assessment are much too aggregate and not well-designed to pick up crucial features of either investment in human capital or social exclusion. (Contrast this with the enormous amount of effort devoted to monitoring every facet of the assets and activity of the agricultural sector.)

- At the same time, the introduction of performance indicators in the public sector has embodied a very narrow view of the role of information in society, the responsibility for providing it, and the underlying economics governing its provision. The basic reason for the state introducing such indicators is not because these services are *paid for by the public* but because *they are important to the well-being of the individual, family and community and present major problems for the individual client in assessing the quality of the service.*

- In this context, there is a regrettably supine treatment of the business sector in the employment and training fields. If performance indicators are here to stay, they should be applied to the private as well as public sectors in the employment and training arenas. In particular, job seekers lack information on the quality of jobs and training opportunities, including the records that different employers and educational and training organisations have in the various areas of human resource development and their different philosophies of 'people management'. The aims of achieving efficient markets for labour and learning cannot be realised without balancing more effectively the information that the organisation expects to have on the individual with the information that the individual can acquire about the employing or educating/training organisation.

- The need for such information on the part of current and potential employees is compatible, moreover, with the needs of shareholders and other investors in seeking to value businesses that are highly knowledge-based and hence heavily dependent on the quality of organisational design and implementation.
- Thus it is time for monitoring to take over from *ad hoc* research in a relatively new area. This concerns the progress in creating high performance organisations and displacing poorly performing organisations. This is a potentially controversial area but knowledge of how well countries are *deploying* the labour force is just as important as that of how well they are *educating and training* it.

Regular assessments of the markets for work and learning should be part of the routine monitoring system

- An elementary application of the economics of information points to the need for Europe to adopt the practice of the United States in committing itself to the public provision of routine industrial-occupational projections of one kind or another. But they need to be embedded within broader labour market assessments and complemented by similar efforts to represent the ways in which the education, training and professional development systems are behaving. This is one state aid to industry which would clearly supply a public good that will not be provided by the market at a level of quality that suffices.

- There is too much of a tendency for a*d hoc* working parties, committees of enquiry and opinion polls of the policy and practitioner communities to replace what should be the organised provision of well-digested, routinely produced assessments of the markets for labour and learning.

- The uncoordinated efforts of the various parts of the European Commission have not yet been able to generate best practice in this area. But this is partly because most Member States have, themselves, failed to implement at national level the necessary monitoring instruments and the analytical capacity required to use them. The proliferation of *ad hoc* studies produced by teams of research institutes that form and re-form in order to bid for one competitive tender after another is no way to exploit effectively the capacity of the European research system and will not yield an adequate substitute for producing well-designed instruments and the organisational structures capable of deploying them. A visit to the US Bureau of Labour Statistics web site will show just how far Europe is behind the US in the provision of information for participants in the various markets for work and learning (see also Goldstein, 1999).

- However, more generally, the European market for information and research about work and learning is deeply distorted by the different conventions which arise in the higher education and research systems in the Member States. The frameworks for both EU contract funding and science funding have so far failed to encourage the right balance of co-operation and competition among researchers and consultants and to meet the need for continuity of effort in areas where the creation and dissemination of knowledge requires special attention. This raises issues of both the integrity of the Single Market in information, consultancy and

research services and the role of EU science policy in the social science and management research fields. These issues need to be addressed.

- The balance of effort devoted to the various European 'observatories' and related information processing activities is, from the above point of view, too much concerned with monitoring detailed policy reforms than the labour and learning systems they are supposed to affect. The disparity between the level of routine comparative policy documentation, codified in very precise terms and the crudity of the indicators used in the EU processes is especially striking.

5.2 Sharing and Understanding Policy Experiences

There are different levels at which the experience of Member States can be shared and understood: the overall choice of policy strategy, the designs of measures under specific policy areas, the delivery methods used to implement the measures, the systems for monitoring, evaluation, etc. Here, mention will be made of just two aspects: benchmarking and evaluation.

Benchmarking is best used to denote the analysis of performance in relation to practice, followed by reflection, leading to the modification of practice to enhance performance, and so on. It is, essentially, a learning process and is meaningful especially in the context of work groups or organisations which seek to identify what might be considered 'best practice(s)', to explore its nature and then pursue better performance. Useful applications of the technique can be found in various parts of the labour market policy system, notably in the sharing of experience and performance between employment placement offices in the same country (Sjostrand, 1998) and between employment service of different countries (Arnkil, 1998).

However, the term is so much in vogue that it is also being used for comparisons of policies and monitoring of progress in the absence of clear notions of *practice*. The OECD 'benchmarking policy progress' activity (Elmeskov, 1998) monitors progress towards meeting a set of OECD recommendations given for each country on the basis of a particular view of its structural needs. This cuts across the notion of learning about and evolving best practice. It seems to encompass too much to encourage learning at the micro level because transmission mechanisms for policy implementation are not reviewed, i.e. the policy measure and delivery system are not distinguished. At the same time it encompasses too little to encourage learning at the macro level. This is because there is no conception that, for example, different employment systems might be equally compatible with high performance and that these should be articulated. The process seems to be too wrapped up with the vindification of the Jobs Strategy to generate 'best practice' insights attached to the different approaches. 'Best practice' is The Strategy and is subsumed within the country-specific recommendations based upon it.

As regards *evaluation,* the quality of this varies greatly across policy measures and countries. The need for generic evaluation in which findings are suitably codified so that their insights have an application beyond the immediate context of the evaluation has been proposed by Lindley (1996) in the case of the European Social Fund. The principles of this are, however, relevant to several areas of policy: a rigorous codification of *ex post* evaluation findings, which can then be used in *ex ante* evaluation of new proposals, combined with the requirement for progressive improvements in the national/local systems for ex post evaluation, while concentrating the EU-funded evaluation effort so as to fill major gaps in the evaluation research base so that collective learning can proceed most efficiently.

Member States are still some way from participating in this kind of process and there has been a loss of opportunity to cut down on unnecessary experimentation, especially with policy measures that have clearly not worked in most environments. This raises fundamental issues which concern the governance of the economy and

society and whether or not the citizen has the right to assume that policy will be based on evidence not just on democratic principles. Certainly, there are commitments to share experience and seek out knowledge of which policies succeed in which contexts. But they need to lead to sharper evaluation frameworks and less tolerance within the policy community of poorly designed schemes which essentially use public money to experiment with peoples' experience of work and learning.

6. CONCLUSIONS

So, after all, what is the knowledge-based economy, how does its development alter the European employment debate, and are there modifications that should be made to the EU 'processes' that would help to monitor performance in the light of it? These questions are addressed in this concluding section.

The meaning of the 'knowledge-based economy'

The use of the term 'knowledge-based economy' or one of the other variations on that theme is bound to invite criticism because knowledge is involved in virtually all activities and the privileging of a group of sectors or a new phase of economic development by referring to them as being 'knowledge-based' seems presumptuous, if not actually ignorant of history. Perhaps, however, use of the term can be clarified, if not entirely legitimised, by allowing it to cover four complementary and in part overlapping phenomena which are growing substantially or should do so:

- the conscious recognition of the notion of 'practice' across a much wider range of occupational contexts than hitherto both at the professional level where it has been less developed (e.g. scientist, computer programmer as opposed to doctor, teacher and engineer) and at other levels (e.g. secretaries, care assistants, nurse auxiliaries, security guards, plumbers, sales assistants);
- the much greater codification of knowledge so that it is accessible and can be better used to bring 'what is practised' into closer association with 'what is known';
- the increasingly diverse production and exploitation of knowledge in more intensive and pervasive ways in many parts of the economy and society *and* the application of knowledge and advanced information processing to the knowledge production and dissemination processes themselves;
- the evolution of a knowledge-based policy development system with very high standards in the collection and use of evidence in the policy process.

This is not to say that a majority of economic life will be dominated by 'reflective practitioners' generating waves of knowledge-based services in a continual state of flux and feedback. But the creation of a knowledge-based economy will be the key innovation facing economic and social life at least in the industrialised nations. Whether this definition is likely to irritate the critics of the metaphor more or less than a vaguer interpretation is a moot point.

Knowledge-based economies and the European employment debate

The potential impact of the knowledge-based society will be pervasive. Rights and responsibilities will need to be re-drawn. New understandings will be required, including those forged between social partners in industry, between local partners, and among communities in areas of acute social and economic disadvantage. Partial visions of the knowledge society, focussing only on competitiveness, will be inadequate. They risk losing major opportunities, where virtuous circles of rising productivity, profitability, employment and job quality could be entered and where the pursuit of equity and efficiency could actually reinforce each other. An holistic approach to policy is required.

Consideration of the potential impact of the knowledge-based economy should give more prominence in the employment debate to the quality of organisational design and implementation. These need to be addressed much more explicitly in national and European-level debates which still tend to be more concerned with education, training and skill shortages. However, this does not mean an exclusive concern for the performance of internal labour markets and the support of corporate human resource policies. The knowledge-based society will increase the complexity of interaction between education, training, and mobility within organisations, networked employment structures and the external labour market.

The level of investment in education and skills will grow as life-long learning becomes more extensive, especially given the importance of raising the participation of older workers in the labour force (see Esping-Andersen's background paper) and strategies for realising the potential of older workers (Lindley, 1999). One of the main elements of the latter is to retain such workers within the organisation rather than face re-integration problems after redundancy or early retirement. Much of the education and training made available to these workers will thus be in the context of an employment relationship.

In these circumstances, of rising human capital investment both in absolute terms and in relation to other investments, the allowable 'subsidy regime' will need to be carefully worked out; what are, in effect, state aids in the form of direct provision and/or financing to individuals and organisations for education, training and career development will have to come more fully within the scrutiny of the European Commission.

This focus should now take over from the substantial initiatives concerned with European-level regulation of the labour market during the last decade or so. The regulatory 'floor' has been established and, whilst enforcement and compliance require attention, the EU seems to have reached the reasonable limit of its scope for general regulation of the labour market. The evidence does not suggest that *de-*regulation relative to the standards set at the EU level would offer any great pay-off (indeed, it would probably have destructive effects on the attempts to create many more high performance organisations); this is the case even if some individual countries do have reason to re-consider existing measures that go well beyond the provisions implemented at European level.

Proposed modifications to the EU 'processes'

The EU has already taken major steps towards creating a framework for assessing the progress of Member States towards the adoption of appropriate macro-economic, structural and labour market policies. This consists of the initial establishment of the Broad Economic Guidelines and their review at the Cologne Council meeting, together with the introduction of the Cardiff and Luxembourg processes, respectively.

The development of the knowledge-based society does not provide grounds for creating new processes but does suggest modifications to the *content* and methods of scrutiny adopted. There has already been considerable discussion amongst the Member States and the Commission about the relationships between the processes and their potential future roles; this will not be pursued here. However, whatever happens to the division of responsibilities arising in the future, the analysis of this paper suggests that some modifications to the content of the processes taken collectively would be desirable. These would include the following five innovations:

- Taking a Rawlesian view of acceptable inequality which deems inequality appropriate only if disadvantaged people benefit from its existence, a key aggregate indicator should be the income accruing to, say, the poorest one third of individuals or households. In terms of overall performance this would represent the outcome of the various attempts to pursue efficiency and equity. The use of aggregate GDP statistics does not offer any insight into this crucial aspect of performance.

- However, *social exclusion* results from being *trapped* in a state of cumulative disadvantage. In order to identify how much this is the case, the above indicator needs to be supplemented by one which measures the extent to which the people identified in a given year as being among the poorest are regularly found in that situation or to a large degree move on to better circumstances. It is quite practicable for such indicators to be produced now, even though there will be a need to treat them with care and subject them to refinement.

- The guidelines should be extended to deal with the interfaces between education, training and the labour market. Indicators of changes in the volume of participation in and value of investment in education and training need to be incorporated into the routine monitoring and review processes.

- In dealing with the work and learning aspects of the performance appraisal, there should be a conscious attempt to look at the coherence of the 'model' being pursued explicitly or implicitly by the Member State concerned, i.e. the relationship between overall labour market regulation, co-ordination, and social benefits; between market and non-market strategies for investing in education and training; and between the innovation system, the extent of social partnership, and policy vis-à-vis the encouragement to develop high performance organisations.

- Additional guidelines should be introduced so that the Commission includes, within its scrutiny of the progress on policy, an assessment of the current

quality of the audit, monitoring, evaluation and policy research systems of Member States and their plans for improving them. There should also be a report from the Commission or an independent body on the quality of its own systems in this respect.

REFERENCES*

Arnkil, R. (1998). 'Benchmarking Employment Services: International Comparisons'. In European Employment Observatory (1998), 112-120.

Barnow, B.S. (1999). 'Occupations and Skills in the United States: Projection Methods and Results through 2006'. WZB Conference on Qualification Requirements in OECD Member States, June, Berlin.

Boisot, M.H. (1999). *Knowledge Assets: Securing Competitive Advantage in the Information Economy*. Oxford: Oxford University Press.

Boyer R. (1999). 'Institutional Reforms for Growth, Employment and Social Cohesion: Elements of a European and National Agenda'. Background Paper prepared for the Portuguese Presidency of the European Union under the theme: 'For a Europe of Innovation and Knowledge with More Employment and Social Cohesion'.

Castells, M. (1996). *The Rise of the Network Society*. Oxford: Blackwells.

Commission of the European Communities (1998). *Employment in Europe*. Luxembourg: Office for Official Publications of the European Communities.

Commission of the European Communities (1999). 'Strategies for Jobs in the Information Society.' Report to the European Council. Information Society/99/22. Brussels: CEC.

Commission on the Future of Worker-Management Relations (1994). *Fact Finding Report*. U.S. Department of Labour / Department of Commerce. Washington: U.S. Government Printing Office.

Coyle, D. (1997). *The Weightless World*. Oxford: Capstone.

de Grip, A and H. Heijke (1998). 'Beyond Manpower Planning: ROA's Labour Market Model and Its Forecasts to 2002'. Maastricht: Research Centre for Education and the Labour Market, Maastricht University.

Elmeskov, J. (1998). 'The OECD Jobs Strategy: Benchmarking Policy Progress.' In European Employment Observatory (1998), 81-90.

Esping-Andersen, G. (1999). 'Ageing Societies, Knowledge Based Economies, and the Sustainability of the European Welfare States'. Background Paper prepared for the Portuguese Presidency of the European Union under the theme: 'For a Europe of Innovation and Knowledge with More Employment and Social Cohesion'.

European Employment Observatory (1998). 'Benchmarking Labour Market Performances and Policies'. Joint Employment Observatory Conference Proceedings. Rotterdam 2-3 July. Berlin: I.A.S.

Gibbon, M., *et al.* (1994). *The New Production of Knowledge*. London :Sage.

Goldstein, H. (1999). 'The early history of the *Occupational Outlook Handbook*'. *Monthly Labor Review*, May, 3-26.

Gray, G.R., D.W. Myers and P.S. Myers (1999). 'Cooperative provisions in labor agreements: a new paradigm?'. *Monthly Labor Review*, January, 29-45.

Green, F. (1999). *The Market Value of Generic Skills.* Skills Task Force Research Paper 8. Sheffield: DfEE.

Grubb, D. and W. Wells (1993). 'Employment Regulation and Patterns of Work in EC Countries'. *OECD Economic Studies*, no. 21, winter, 7-58.

Kelly, K. (1998). *New Rules for the New Economy.* London: Fourth Estate.

Lindley, R.M. (1991). 'Interactions in the markets for education, training and labour: a European perspective on intermediate skills'. *International Comparisons of Vocational Education and Training for Intermediate Skills.* Ed. Paul Ryan. Basingstoke: Falmer, 185-205.

Lindley, R.M. (1993). 'Rights and Responsibilities: Contrasting Expectations of European Employment Policies'. *Convergence des Modèles Sociaux Européens.* Ed. J. Freysinnet. Paris: Ministère du Travail, de l'Emploi et de la Formation Professionnelle, 248-59.

Lindley, R.M. (1996). 'The European Social Fund: A Strategy for Generic Evaluation'. *International Handbook of Labour Market Policy and Evaluation.* Eds. G. Schmid, J. O'Reilly, K. Schömann. Cheltenham: Edward Elgar, 843-867.

Lindley, R.M. (1997a). 'Socio-Economic Environments and Rule-Making in the EU'. *The Evolution of the Single European Market.* Ed. D. Mayes. Cheltenham: Edward Elgar, 114-66.

Lindley, R.M. (1997b). 'Labour Market Flexibility and the European Union'. *Labour Productivity and Flexibility.* Eds. A. Amadeo and S. Horton. London: Macmillan, 150-71.

Lindley, R.M. (1999). 'Population Ageing and the Labour Market in Europe.' *Rivista Italiana di Economia, Demografia e Statistica*, LIII, no.1, 167-92.

Marshall, R. (1998). 'États Unis: crise et avenir incertain des relations industrielles: autour des traveaux de la commission Dunlop'. *Les Relations Sociales en Europe.* Eds. H. Nadel and R.M. Lindley. Paris: L'Harmattan, 47-71.

Nadel,H. and R.M. Lindley (1998). (eds.). *Les Relations Sociales en Europe.* Paris: L'Harmattan.

Nickell, S and and R. Layard (1998). 'Labour Market Institutions and Economic Performance'. Discussion Paper no. 407. London: Centre for Economic Performance, London School of Economics.

OECD (1994). *The OECD Jobs Study.* Paris: OECD.

OECD (1999). 'Labour market performance and the OECD jobs strategy'. *OECD Economic Outlook.* Paris: OECD, 47-132

Reich, R.B. (1991). *The Work of Nations.* New York: Vintage Books.

Scarborough, H., J. Swan and J. Preston (1999). *Knowledge Management: A Literature Review.* Issues in People Management. London: Institute of Personnel and Development.

Schmid, G., H. Schütz and S. Speckesser (1998). 'Broadening the Scope of Benchmarking: Radar Charts and Employment.' In European Employment Observatory (1998), 54-70.

Schön, D.A., (1983). *The Reflective Practitioner.* London: Maurice Temple Smith Ltd.

Sexton, J.J., D. Frost and G. Hughes (1998). *Aspects of Occupational Change in the Irish Economy – Recent Trends and Future Prospects.* FÁS/ESRI Manpower Forecasting Studies Series, Report No.7. Dublin: FÁS/ESRI.

Shapiro C. and H.R. Varian (1999). *Information Rules: A Strategic Guide to the Network Economy.* Boston, Mass.: Harvard Business School Press.

Sjöstrand, K-M. (1998) 'Benchmarking Labour Market Performances and Policies: Sweden.' In European Employment Observatory (1998), 121-31

Silvestri, G.T. (1997). 'Occupational employment projections to 2006'. *Monthly Labor Review,* November, 58-83.

Soete, L. (1999). 'The Challenges and the Potential of the Knowledge-Based Economy in a Globalised World'. Background Paper prepared for the Portuguese Presidency of the European Union under the theme: 'For a Europe of Innovation and Knowledge with More Employment and Social Cohesion'.

Stewart, T.A., (1997). *Intellectual Capital.* London: Nicholas Brealey.

Tessaring, M. (1999). Human Resource Potential and the Role of Education and Training'. CEDEFOP (Internal Paper). Thessaloniki.

Swedish National Labour Market Board (1999). 'Jobs for the future – Choosing an occupation into the 21st century'. *ISEKen,*13/98.

van Ark, B. And R.H. McGuckin (1999). 'International comparisons of labor productivity and per capita income'. *Monthly Labor Review,* July, 33-41.

Veneri, C.M. (1999). 'Can occupational labor shortages be identified using available data?' *Monthly Labor Review,* March, 15-21.

Walsh (1998). *Monthly Labor Review*

Wilson, R. (1998, ed.). *Review of the Economy and Employment 1998/99.* Coventry: Institute for Employment Research, University if Warwick.

N.B. Basic documents relating to the EU processes and their development are not included above and are not cited formally in the text. The results of labour market studies which are drawn upon in summarising key features of occupational change in section 3 are too numerous to include full citations here.

Table 1 Employment and Total Job Openings 1996-2006 by Education and Training Category, United States

Education and training category	Employment						Total job openings due to growth and net job openings	
	Thousands		Per cent distribution		Change		Thousands	Per cent distribution
	1996	2006	1996	2006	Thousands	Per cent		
Total, all occupations	132,353	150,927	100.0	100.0	18,574	14.0	50,563	100.0
Bachelor's degree or higher	28,885	35,207	21.8	23.3	6,321	21.9	12,296	24.3
First professional degree	1,707	2,015	1.3	1.3	308	18.0	582	1.2
Doctoral degree	1,016	1,209	0.8	0.8	193	19.0	460	0.9
Master's degree	1,371	1,577	1.0	1.0	206	15.0	430	0.9
Work experience plus bachelor's or higher degree	8,971	10,568	6.8	7.0	1,597	17.8	3,481	6.9
Bachelor's degree	15,821	19,838	12.0	13.1	4,017	25.4	7,343	14.5
Post-secondary education or training below the bachelor's	12,213	13,725	9.2	9.1	1,513	12.4	3,943	7.8
Associate's degree	4,122	5,036	3.1	3.3	915	22.2	1,614	3.2
Post-secondary vocational raining	8,091	8,689	6.1	5.8	598	7.4	2,329	4.6
On-the-job training or experience	91,256	101,966	68.9	67.6	10,740	13.1	34,323	67.9
Work experience in a related occupation	9,966	11,177	7.5	7.4	1,211	12.2	3,285	6.5
Long-term on-the-job training	12,373	13,497	9.3	8.9	1,125	9.1	3,466	6.9
Moderate-term on-the-job training	16,792	18,260	12.7	12.1	1,468	8.7	5,628	11.1
Short-term on-the-job training	52,125	59,062	39.4	39.1	6,937	13.3	21,944	43.4

Source: Silvestri (1997)

Table 2 Potential Bottleneck Occupations in Sweden up to 2010

Industry

- Graduate engineer (most specialities)
- Graduate technician (most specialities)
- Chemist
- Physicist
- Mathematician
- Welder (trained specialist)
- Toolmaker
- Engineering worker (all-round)
- NC/CNC operator
- Printing worker (new technology)
- Electrical fitter
- Plater

Construction

- Architect
- Structural technician/engineer
- Bricklayer
- Concrete worker
- Joiner
- Construction worker
- Roof fitter
- Floor-layer
- Plumbing and heating installation worker
- Craftsman electrician
- Painter

Private services

- Tele-salesperson
- Advertising salesperson
- Electronics salesperson
- Corporate salesperson
- Logistician
- Logistics engineer
- Aerospace technician
- Ship's officer
- Machine officer
- Bus driver
- Economist (4-year post-secondary programme)
- Cook
- Construction plant operator
- IT specialist (all specialities)
- IT engineer
- Web designer
- Public relations officer
- Advertising/multimedia
- Auditor
- Lawyer
- Interviewer
- Organisational consultant

Public services

- Upper secondary school teacher (general subjects)
- Vocational teacher (IT)
- Vocational teacher
- Special teacher
- University/college teacher
- Doctor
- Nurse (with further training, various specialities)
- Nurse
- Assistant nurse
- Psychologist
- Dentist
- Dental hygienist
- Pharmacist
- Dispensing chemist
- Police officer
- Fire safety engineer
- Vocational counsellor

Source: Swedish National Labour Market Board (1999). 'Jobs for the future – Choosing an occupation into the 21st century'. *ISEKen*,13/98

Table 3 Selected Occupational Projections for the EU 1996-2005 (% change)

Occupation	Germany	Ireland[b]	Netherlands[b]	Spain	United Kingdom[b]	EU9[a]
Managers	-	23	14	20	12	14
Professionals	23	28	9	11	7	5
Technicians	20	41	10	95	7	20
Clerks	-5	6	-12	-31	1	-5
Service workers	5	13	6	17	18	13
Agricultural workers	-7	-23	-47	-36	-11	-15
Craft workers	-10	10	4	11	-21	-1
Plant workers	3	10	9	28	3	4
Elementary	-15	12	22	-19	-7	-4
Total	4	13	6	12	4	5

Source: Projections conducted by the Institute for Employment Research, University of Warwick, and Cambridge Econometrics in consultation with several other organisations. See Lindley (1999) for a description of the overall study. Note that such projections are highly sensitive to a large range of assumptions about both the world economic environment and behavioural responses in the individual economies. They are also especially sensitive to the classification of occupations used for the European Labour Force Survey, which changed in 1992. Some of the large relative differences in national trends for the same occupational category will be due to the inevitable presence of definitional disparities and transitional effects due to the change of classification. See also CEC (1998). The projections should thus be regarded as being only very broadly indicative of possible future changes. Further details will be accessible direct from the IER web site in due course (http://www.warwick.ac.uk/ier).

Notes: (a) Excludes Austria, Finland, Greece, Luxembourg, Portugal and Sweden, mainly for reasons of the availability of suitable occupational data or the country coverage of the underlying multi-country, multi-sectoral model, E3ME, (developed by Cambridge Econometrics) at the time of making the initial sectoral projections.

(b) Regular projections for 5-10 years ahead are made annually for these three countries by the ESRI, ROA and IER, respectively. They give more detail at the occupational level but their conclusions broadly reflect those given in the text and in the summary of a wide range of studies given in

Table 4. See Sexton, *et al.* (1998), de Grip and Heijke (1998), and Wilson (1998, ed.) for presentations of the results and methodologies used for the three countries.

Table 4 Qualitative Aspects of Occupational Change

Occupations concerned with planning, monitoring and control -notably, managers and supervisors

Changes in job content which will accompany the further expansion of management jobs will reflect the wider range of competence expected of managers and the need to take responsibility for a more complex process. The latter will use more capital and fewer people but with personnel engaged on more demanding tasks and involving greater autonomy. The requirement for broader expertise will affect general managers and specialists alike with the former acquiring greater technical knowledge and the latter, more business skills. Responsibility for a greater mix of capital equipment and skilled employees will also characterise the supervisory occupations where more emphasis will be laid upon communication with and the motivation of employees.

The relationship between higher and intermediate professions

This issue concerns the relationships both between long-established occupations (doctor/nurse, scientist/laboratory technician, etc.) and between relatively new occupations (software engineer/programmer, design engineer/technician/draughtsperson, manager/data processing specialist). In many of these linked occupations, changes in product demand, labour market conditions, and vocational education are creating situations in which significant adjustments hare taken place in some countries. Relative salary costs and shortages of certain higher-level skills combined with the development of technological aids to decision-making indicate the potential for further changes (e.g. in health care) subject to institutional restraints.

In addition, in certain areas of the economy there seems to be scope for the emergence of new higher and intermediate professional groups. For example, the development of tourism and leisure activities need not be associated with a continuation of temporary, sometimes seasonal, low skilled and low paid employment. Aiming at higher quality and a wider range of service generates a demand for more professionally qualified entrepreneurs, managers and local administrators, supported by a cadre of skilled personnel. The latter may work behind the scenes or be in direct contact with the customer (e.g. in providing tourist/travel information, instruction in recreational pursuits, supervision of customer relations in hotel, catering and recreational establishments). The speed with which such service industries move towards the 'high value added' end of their product market clearly determines the rate of growth of these more skilled occupations. It is also, however, determined by the rate at which appropriate new professional roles are identified and the relevant training is provided.

Other non-manual occupations

This group is dominated by clerical, secretarial and sales occupations. Some of these personnel are directly involved with customers in areas where attempts are being made to improve the quality of customer service. There the job content is placing greater stress on the combination of a higher level of product knowledge, inter-personal communication skills, keyboard skills and software knowledge needed to use the financial/sales information system, and wider commercial awareness.

In other respects, though, there seems to be some uncertainty about the net impact of organisational and technological change upon these occupations. Many routine clerical tasks and the supervisory roles attached to them have been abolished with the widespread establishment and use of machine-readable data bases. The scope for more complex analysis and presentation of data and the ability to create higher quality documentation is likely to increase the demand for certain clerical/secretarial staff. These will have higher levels of literacy and numeracy, greater knowledge of the business and its information system, and skills in the use of software for word-processing, statistical analysis and graphics.

Quality considerations mentioned above in relation to customer service combine with efficiency arguments to create a demand for more flexible personnel. These should be able to switch from counter service to liaising with suppliers to carrying out supporting clerical and secretarial tasks. This is an emerging form of multi-skilled and multi-functional office-based occupation which has received

less attention than does its manual craft counterpart (see below).

Source: Author's assessment of a wide range of *ad hoc* qualitative as well as quantitative studies.

Table 4 Qualitative Aspects of Occupational Change (continued)

Skilled production occupations

The fate of skilled craftsmen has been crucial in the implementation of new technology. The possible consequences are (a) abolition of the job; (b) de-skilling to a large degree (e.g. to a machine-minding or materials handling function); (c) re-skilling where previous knowledge is transferred to a new context requiring some re-training (e.g. transfer to maintenance from production); (d) multi-skilling where, typically, the need for a wider craft-based competence involves the acquisition of complementary skills in electronics; and (e) up-grading to the status of technician/programmer/complex keyboard operator which exploits previous knowledge but involves substantial re-training or recruitment of new qualified staff.

The development of the multi-skilled, multi-functional, worker has been highlighted in much case-study evidence. A worker who deploys, for example, mechanical and electronics skills and deals with production, regulation of equipment and minor repairs would fall into this category. Similar attention is paid to the specialised maintenance and repair functions employing highly skilled craftsmen. However, the introduction of new technology generally creates far fewer such jobs than it destroys or de-skills traditional craft jobs engaged in production. The extent of up-grading has evidently become the litmus test of enlightened management. But the evidence on the relative costs of alternative strategies as opposed to their feasibility in terms of the technical and training requirements is extremely limited. The emerging division of labour between skilled manual workers and more highly qualified technical personnel at the point of technological transition is insufficiently monitored and understood at national level to allow for a satisfactory explanation of international differences.

Management control versus technological necessity as determinants of job content and occupational structure

The above point implies that it would also be premature to generalise on the much debated issue of how far employers seek out technologies and choose modes of implementation which increase their control over labour as the principal aim. Nonetheless, the introduction of information technology (in its widest sense) does present a particularly important opportunity for examining this issue. Its flexibility would seem to offer the potential for a much greater variation of economically acceptable management choices than with other major technologies.

Source: Author's assessment of a wide range of *ad hoc* qualitative as well as quantitative studies.

Table 5 Characteristics of High Performance Organisations

	High Performance Organisation	Mass Production System
1.	Quality driven and therefore establish closer and more co-operative relations with customers and suppliers	Producer driven and play suppliers off against each other through price competition
2.	Lean management structures that promote horizontal co-operation and participative management styles: establishes mutual trust and respect between managers and workers, and decentralises decisions to the workplace.	Hierarchical, segmented 'Tayloristic' approach to management.
3.	Stress internal flexibility to adjust quickly to changing technology and markets. Stability sought through quality, productivity and flexibility.	Stability sought through rules, regulations and contractual relationships.
4.	High priority given to positive incentive systems, relating rewards to desired outcomes. Important because the efficient use of leading edge technology gives workers considerable discretion.	Stress negative incentives (punishment and layoffs) or even perverse incentives which make it more difficult to achieve desired outcomes. e.g. when workers believe improving productivity incentives will cost them their jobs.
	Positive incentives include: bonus schemes, internal cohesion, fairness and equity; job security; and participation in decision–making.	Hierarchical arrangements, fragmented work, and adversarial relations discourage the co-operation required for high levels of quality and productivity.
5.	Develop and use leading edge technology through constant improvement on the job and by adapting advanced technologies produced elsewhere. Realise that standardised technologies mean competing mainly on wages.	
6.	Pay heavy attention to education and training for all workers. Higher order thinking skills are required for high performance	Stress education and training for management and technical elites.

	and the development and use of leading edge technologies.

Source: Derived from Marshall (1994, 1999).

Table 6 A Compact for Change

1. The parties should jointly work to increase productivity and enhance the quality of products in order to ensure employees of long-term security and a rising standard of living.

2. Management should reflect the continuing improvements in productivity and the quality of products in its decisions regarding worker compensation, the organisational structure, pricing, and investment.

3. Unions and employers should jointly develop the leadership and technical skills of their workers.

4. Unions and employers should jointly develop ways to promote teamwork and employee involvement in developing and administering personnel policies and in strategy decision-making to achieve organisational goals.

5. The employer and union must commit to open and early sharing of information relevant to corporate strategies and the relationship between the parties.

6. The employer and union should share their views and agree on how employee representation will be determined at new facilities.

7. Permanent separation of workers will be an action of last resort.

8. Both unions and the employer should be jointly committed to a work environment in which disputes are resolved in an amicable manner, without resort to strikes, lockouts, or hiring replacements.

9. Both parties should be committed to worker participation at all levels of decision-making in order to provide continuous improvements in products, services, safety, employment security, and productivity.

10. It is essential that employees have input in the design and application of new technology and in the planning and development of any new system for the allocation of tasks.

Source: Gray *et al.* (1999), taken direct from *Labor-Management Commitments: Compact for Change* (US Department of Labor, 1991).

able 7 Expected Years of Unemployment over a Working Lifetime y Level of Educational Attainment for Men aged 25-64, 1995

	Below upper secondary	Upper secondary only	Tertiary	Difference in years between tertiary and below upper secondary
A	1.6	0.9	0.6	1.0
B	3.0	1.4	0.9	2.1
CH	2.3	0.9	0.7	1.6
DK	4.0	2.8	2.0	2.0
D	4.5	2.3	1.6	2.9
EL	1.8	1.7	1.9	-0.1
E	5.6	3.9	2.9	2.6
FIN	6.8	5.8	3.1	3.7
F	4.4	2.5	2.1	2.3
IRL	5.0	2.3	1.4	3.6
I	2.2	1.4	1.8	0.4
L	0.7	0.6	0.1	0.6
NL	1.9	1.1	1.1	0.8
NO	2.2	1.4	0.9	1.2
P	1.9	1.6	1.4	0.5
S	4.3	3.3	2.0	2.4
UK	5.4	2.9	1.6	3.8
USA	3.0	1.7	1.1	2.0

Source: OECD 1998, p. 110

Note: The method is extremely crude, being based on age-specific unemployment-population ratios.

Table 8 National Studies on the Extent of Over-Education

	Year of observation	Study	% of respondents believing they are over-educated	Notes on methodology
D	1992	Pfeiffer/Blechinger 1995	24	self-assessment; apprenticeship trained workers
D	1993	Büchel/Weisshuhn 1996	20	self-assessment
E	1990	Beneito *et al.* 1997	28 / 15	self-assessment/objective approach
F	1995	Forgeot/Gautié 1997	21	objective approach; 18-29 vear olds
NL	1995	Borghans/Smits 1997	22	self-assessment
NL	1995	Hartog 1997	26	comparison with job titles
P	1991/92	cit. by Hartog 1997	33	based on job analyses
UK	1986	Sloane *et al.* 1997	31	self-assessment
UK	1991	Sloane *et al.* 1997	13 (m), 10 (f)	objective approach

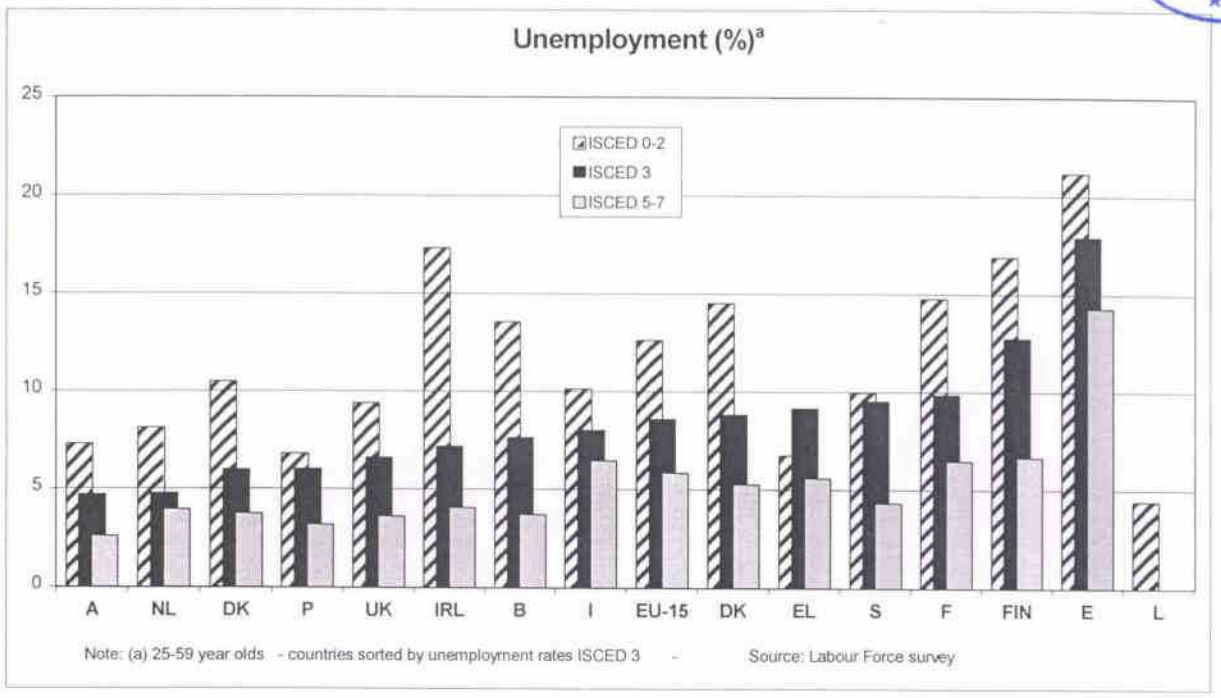
Source: Tessaring (1998). The notes on methodology are as provided by Tessaring. Such data may be interpreted in various ways but they indicate (probably except for older workers) that the over-qualification thesis needs to be taken seriously.

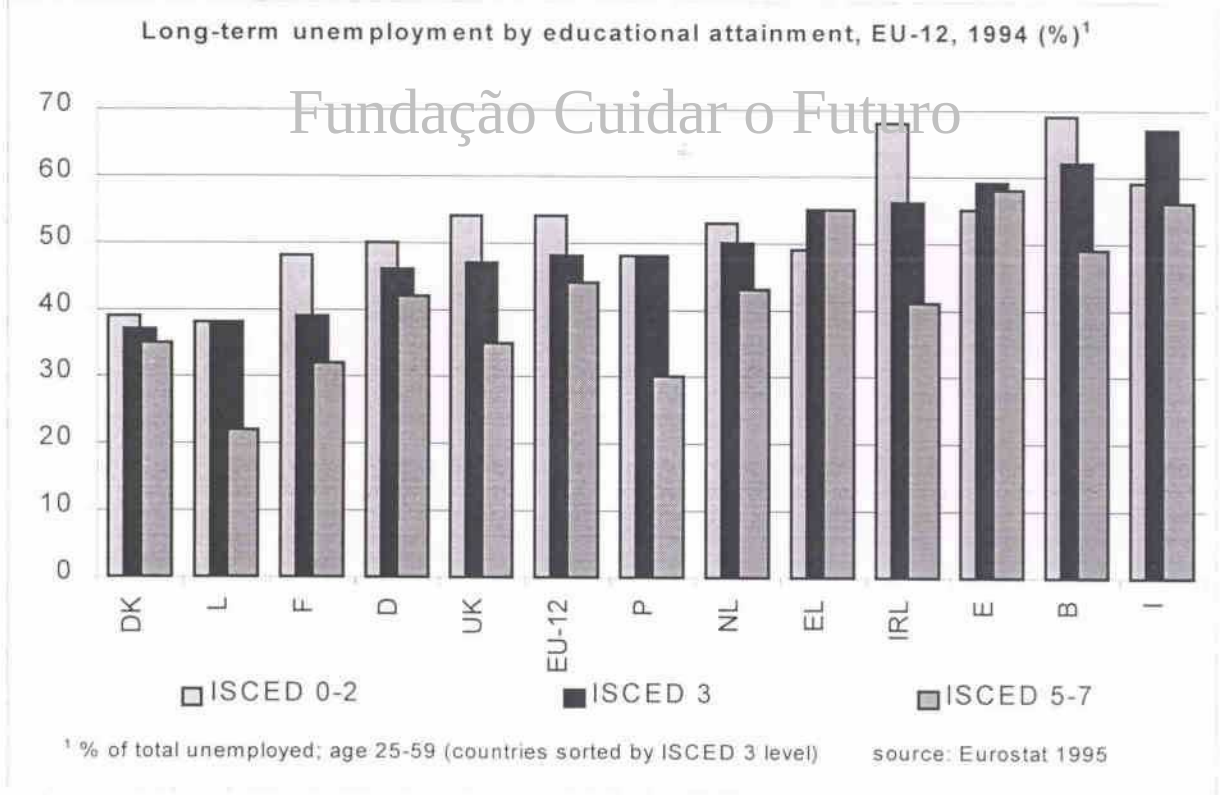
Table 9 Education and Training in Relation to Current Job: EU 1995

Member State	% of individuals reporting that formal education and training has contributed to their present work a lot or a fair amount	% of individuals reporting that they have skills for a more demanding job
D	87	65
UK	-	64
A	87	62
EL	98	60
DK	95	60
B	89	60
P	98	54
IRL	94	53
E	72	53
F	94	51
I	85	51
L	92	44
NL	79	40
Mean	89	55

Source: Tessaring (1999), citing West and Hind (1999) using the ECHP 1995, wave 2.

Figure 1 Unemployment by Highest Educational/Training Attainment: EU Member States 1996



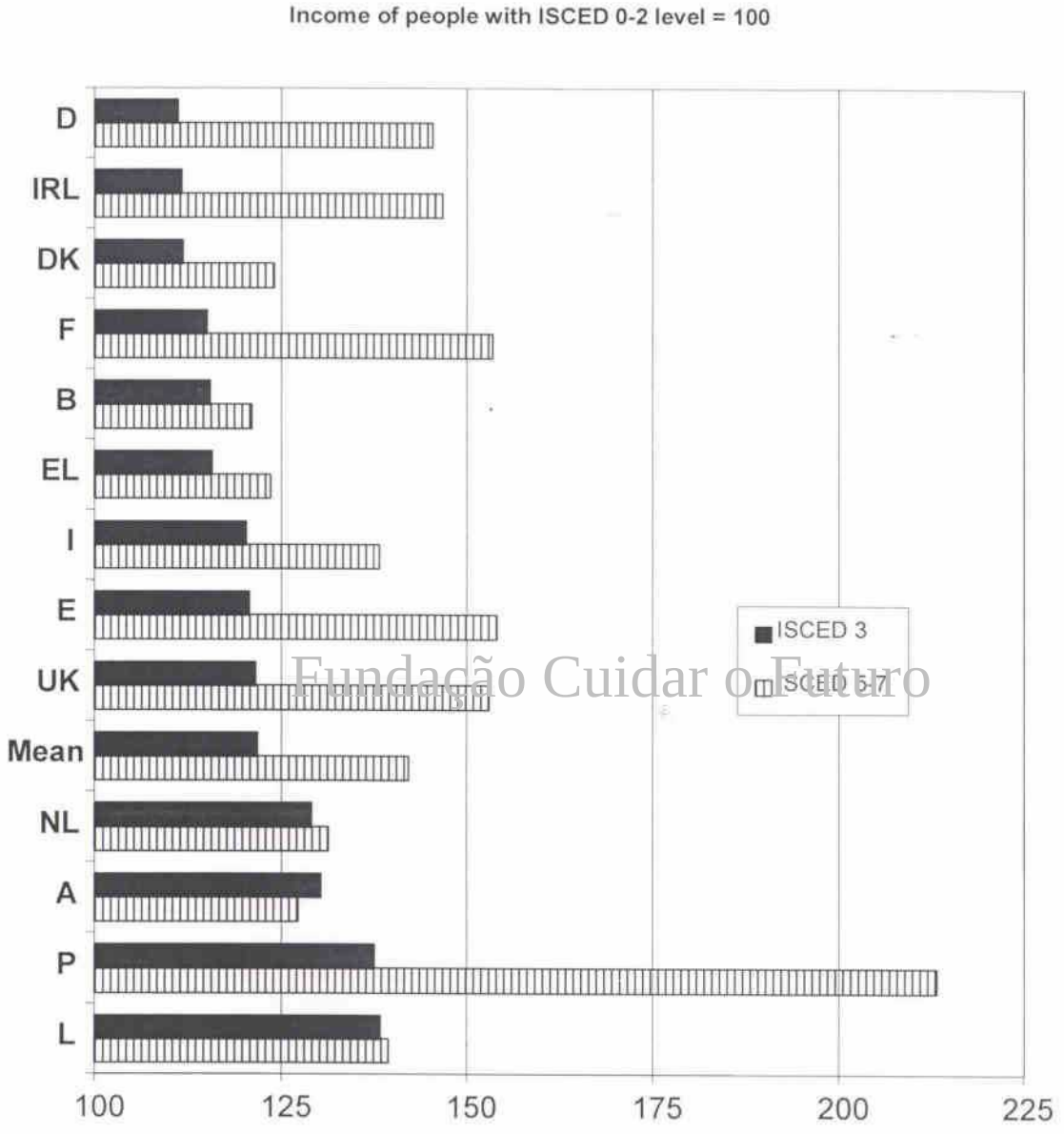


Source: Tessaring (1999).(based on Labour Force Survey 1996)

ISCED 0-2: pre-primary, primary and lower secondary education; ISCED 3: upper secondary education;

ISCED 5-7: higher education

Figure 2 Relative Income According to Educational Attainment



Source: Tessaring based on West and Hind 1999, p. 26

Note: Average net income for people aged 16 years and over in employment (over 15 hours per week).
Income was converted to a comparable basis by dividing by the purchasing power parities (Eurostat).
Amounts are annualised and relate to 1994 - data sorted by income level ISCED 3