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European Knowledge Societies (plural)

The Rise of New Knowledge Types and the Division of Labour in the EU

The pursuit of a thriving European “knowledge economy” is hampered by a one-dimensional conception of what it is. The authors of the following article conceptualise three types of knowledge society and outline the consequences of this analysis for the leaders of the EU and the Lisbon Agenda.

At a summit in Lisbon in the spring of 2000, the EU member state leaders solemnly declared that the central aim of EU socio-economic policy for the next ten years was to become “the most dynamic and competitive knowledge-based economy in the world”.¹ In the following years, this “Lisbon Agenda” stimulated politicians from both right and left in many EU member states to advocate a substantial change in their countries’ socio-economic and educational policies and an improvement in their constituencies’ knowledge and learning skills so as not to miss the boat. In the Netherlands, for example, the Prime Minister appointed himself chairman of a new and prestigious “Innovation Platform” to consist of leading figures from the worlds of politics, business and science. The main Platform aim is to implement the rather vague objectives and guidelines of the Lisbon Agenda and inspire, stimulate and initiate research on the development of a knowledge society.² But in the Netherlands, as in many member states, after years of debate and research it is still fairly vague what exactly a knowledge society is, and consequently what steps should be taken to stimulate its evolution.

So what is a “knowledge economy”? And why do we call the social system emerging around this new economic order a “knowledge society”? It is often argued in the public debate that the one thing distinguishing our current economy from the economies of the past is its “intensified use of knowledge”. As many authors however stress, the development and application of knowledge itself is not unique to the

twenty-first century.³ Indeed, all human societies and economies in history were founded at least in part on the development and application of knowledge. What then exactly makes the use of knowledge in our times exceptional?

In the academic literature, three arguments are generally put forward to substantiate the knowledge economy claim. Firstly, in our current global economy, knowledge has become the key resource of value-adding activities, whereas land was the main resource in the agricultural economy of traditional society, as were both natural resources like coal and labour in the industrial economy of modern society until the 1960s or so.⁴ Secondly, knowledge has not only become more central, the speed at which it is created and accumulated has also greatly accelerated.⁵ Thirdly, the type of knowledge dominant in Western societies has changed significantly in the course of time. Nonaka and Takeuchi, and Rooney et al., for instance, observe a shift from “tacit knowledge” to

¹ European Council: Presidency Conclusions, Lisbon 2000, European Council, p. 2, our italics.

² Cf. www.innovatieplatform.nl.

³ Cf. D. Bell: *The Coming of Post-Industrial Society*, New York 1973, Basic Books; A. Giddens: *Living in a post-traditional society*, in: U. Beck, A. Giddens, S. Lash (eds.): *Reflexive Modernization*, Cambridge 1994, Polity Press, pp. 56-109.

⁴ P. Drucker: *The Age of Social Transformation*, in: *Atlantic Monthly*, Vol. 274, No. 5, 1994, pp. 53-80; N. J. Foss: *Strategy, Economic Organization, and the Knowledge Economy*, Oxford 2005, Oxford University Press; R. Harris: *The Knowledge-Based Economy*, in: *International Journal of Management Reviews*, Vol. 3, No. 1, 2001, pp. 21-40; J. Houghton, P. Sheehan: *A Primer in the Knowledge Economy*, Melbourne 2003, Centre for Strategic Economic Studies, Victoria University of Technology; OECD: *The Knowledge-Based Economy*, Paris 1996; D. Rooney, G. Hearn, T. Mandeville, R. Joseph: *Public Policy in Knowledge Based Economies*, Cheltenham 2003, Edward Elgar.

⁵ D. Bell, op. cit.; P. David, D. Foray: *Economic Fundamentals of the Knowledge Society*, in: *Policy Futures in Education*, Vol. 1, No. 1, 2002, pp. 20-49; W. W. Powell, K. Snellman: *The Knowledge Economy*, in: *Annual Review of Sociology*, Vol. 30, 2004, pp. 199-220.

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“codified knowledge” as the basis of organisation and economic activity.⁶

In this article, we do not contest these three claims. We endorse the viewpoint that the creation and accumulation of knowledge are increasingly the pivotal activities in our globalising economy, that the pace of knowledge production has immensely accelerated, and that since knowledge is becoming pivotal and more dynamic, it is increasingly formalised, codified and managed. We nonetheless feel that in most of the literature one crucial aspect underlying the development of the knowledge economy and knowledge society is missing. In agreement with authors like Nonaka and Takeuchi, and Rooney et al., we feel the advancement of the knowledge economy has been accompanied by a shift in the dominant type or types of knowledge. However, perhaps this shift is not only characterised by a change in the *structure* but also in the *content* of knowledge. What is it that economic actors in a knowledge society actually need to know?

We argue that shifts have also taken place with respect to knowledge content. We define “knowledge” as “a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information”.⁷ Further below in this article, we argue that two types of knowledge content were dominant in industrial society: “technical knowledge” and “social knowledge”. Industrial society was based on and aimed at the “homogenisation” of subjects, workers and customers, but simultaneously produced at least two diversifying forces: reflexivisation and globalisation. The growing diversity of individual and group identities induced by these processes now increasingly calls for the development and application of another type of knowledge: “cultural knowledge”. The rise of this knowledge type is stimulating and responds to the emergence of a new global economic

order based on the creation and application of knowledge: the global knowledge society.

However, since the rise of cultural knowledge does not diminish the importance of the other and “older” types of knowledge, and because of the tendencies putting pressure on countries and regions to specialise in the creation and application of a specific type of knowledge, we conclude that *within* this global knowledge society “in a broad sense” different knowledge societies “in a narrow sense” will emerge. Having developed this typology, we then conceptualise three knowledge societies in the narrow sense: the “techno-cultural”, “the socio-cultural” and the “socio-technical” knowledge society – in terms of economic production, organisational and occupational structures, and social relations. We then analyse how these knowledge societies in a narrow sense cohere in a global knowledge society. Finally, we theorise on the consequences of the insights on the pursuit of a European knowledge society.

Industrial Society: Knowledge as a Homogenising and Diversifying Force

Max Weber, and more recently such authors as Anthony Giddens and Ulrich Beck, have claimed that the central quest of industrial society was the control of nature and social life.⁸ Control was made possible by what Weber calls the “disenchantment of the world”. Weber uses the term disenchantment to refer to human contemplation as well as social action. By analysing nature and social life in a scientific way, knowledge could be accumulated and subsequently applied in several control strategies. In the sphere of nature, the pursuit of control manifested itself in the mechanised production of goods and services, and in the social sphere in the development of the nation state and its instruments (welfare state, state bureaucracy etc.)

This pursuit of control in industrial society, we argue, was made possible by the creation and application of two types of knowledge: “technical knowledge” and “social knowledge”. *Technical knowledge* pertains to (the functioning of) non-human objects, i.e. what Beck and Giddens call “nature”.⁹ The scientific disciplines focused on these objects are the natural sciences, and the application of this type of knowledge

⁶ I. Nonaka, H. Takeuchi: *The Knowledge-Creating Company*, New York 1995, Oxford University Press; D. Rooney et al., op. cit.; also OECD op. cit. For the origins of the concept of “codified knowledge” cf. M. Polanyi: *Personal Knowledge*, London 1964, Routledge & Kegan Paul.

⁷ T. Davenport, L. Prusak: *Working Knowledge*, Boston 1998, Harvard Business School Press, p. 5; K. Smith, *What is the Knowledge Economy?*, The United Nations University 2002, INTECH, Discussion paper series, June 2002, p. 7. As Smith argues, the “weakness, or even complete absence, of definition is actually pervasive in the literature” on the “knowledge society” and “knowledge economy”. Even the OECD (op. cit.) in its influential report on the “knowledge based economy” does not explicitly define “knowledge”. This problem, of course, pertains to the fact that “knowledge” is one of the most problematic and debated concepts in the history of philosophy (cf. for instance I. Nonaka: *A Dynamic Theory of Organisational Knowledge Creation*, in: *Organisation Science*, Vol. 5, No. 1, 1994, pp. 14-37. In this article, we have chosen the widely used definition proposed by Davenport and Prusak, without any claim to being comprehensive or complete.

⁸ M. Weber: *Economy and Society*, New York 1968, Bedminster Press [first published in 1922]; A. Giddens: *The Consequences of Modernity*, Cambridge 1990, Polity Press; A. Giddens: *Living in a post-traditional society*, op. cit.; U. Beck: *Risk Society*, London 1992, Sage.

⁹ U. Beck: *World Risk Society*, Cambridge 2000, Polity Press; U. Beck: *Risk Society*, op. cit.; A. Giddens: *The consequence of Modernity*, op. cit.; A. Giddens: *Living in a post-traditional society*, op. cit.

was at the foundation of multifarious inventions that helped launch the Industrial Revolution, e.g. the steam engine, electricity, and the like. *Social knowledge* pertains to (the functioning of) social “groups”, i.e. collectives of individuals who 1) interact and communicate, and 2) share a set of values and norms, so that, to a certain extent, groups are culturally homogeneous.¹⁰ The scientific disciplines pertaining to groups are the social sciences, and in the industrial era the use of this type of knowledge was at the foundation of, for example, the nation state.

To truly understand industrial society it is, however, necessary to discern a third type of knowledge at the intersection of technical and social knowledge: “techno-social knowledge”, i.e. knowledge of the interaction between non-human objects and groups. This type of knowledge can be said to be at the core of industrial society, since its central institutions – capitalism, bureaucracy, the nation state – eventually could not function and the pursuit of control could not succeed without the integration of nature and social life.¹¹ In the economic sphere, the integration of machine and human capacities resulted in Taylorism and Fordism, which made an effort to answer the question as to how machines (nature) and workers (groups) could be efficiently aligned in the mechanical production of goods.

Though the central institutions of industrial society were confronted with populations that came from local communities with substantial cultural differences, especially at the beginning of the modernisation process, in principle the institutions focused on subjects – citizens, classes, sexes etc. – which were culturally homogeneous to a certain extent. Moreover, some authors feel the institutions exerted a strong homogenising influence on their subjects: the institutions “rationalised”, “disciplined” and “normalised” social life in industrial society in such a way that the cultural diversity in the nation state, the bureaucracy, the factory etc. disappeared, or at any rate faded into the background.¹²

The homogenising project of industrial society was never completed, however. Moreover, though the central institutions of industrial society aimed to wipe out cultural differences, they evoked a further “diversification” of their subjects in at least two ways. The *first di-*

versifying force caused by the institutions of industrial society is “globalisation”.¹³ In the past few decades, the development of capitalism has gradually evoked a further up-scaling of industrial production by the use of new “space-shrinking technologies”.¹⁴ These technologies removed the “spatial rigidities” of Fordist production that kept capital loyal to a location, and “compressed” time, making it much easier to quickly move information and capital from one place to another.

In practice, there have been two main engines behind this “time-space compression”.¹⁵ The first engine is the technological development of transportation. Due to the invention of the train, ocean steamer, airplane and automobile and the gradual expansion of the railroad and highway network in the nineteenth and twentieth centuries, more and more local economies could be absorbed into the global economic process.¹⁶ The second main engine behind the time-space compression has been the technological development of communication.¹⁷ Inventions like the telegraph, telephone, radio, television and Internet have made the further integration of the global economy possible by facilitating the competition among producers from across the globe and, more recently, by providing the information that companies need to transfer production to the countries or regions that can produce at the lowest comparative costs. So by the end of 1970s, globalisation stimulated the first wave of change towards what we now call the knowledge society. In the West, this first wave was characterised by rapid “informatisation”, a flexibilisation of work organisation and the outsourcing of several business functions to developing countries, mainly in Eastern Asia.¹⁸

Yet technological innovation has not only caused globalisation and integration on the part of producers. By absorbing local economies from across the globe into the economic process, it has also turned more

¹⁰ Cf. J. McGrath: *Groups*, New Jersey 1984, Prentice-Hall.

¹¹ M. Weber, op. cit.; A. Giddens: *The consequences of Modernity*, op. cit.

¹² M. Weber, op. cit.; M. Foucault: *Discipline and Punish*, London 1977, Penguin Books Ltd.; A. De Swaan: *The Management of Normality*, London/New York 1989, Routledge & Kegan Paul.

¹³ M. Albrow: *The Global Age*, Cambridge 1996, The Polity Press; M. Castells: *The Rise of the Network Society*, Oxford 1996, Blackwell Publishers; P. Dicken: *Global Shift*, London 1998, Paul Chapman; J. Dunning: *Multinational Enterprises and the Global Economy*, Wokingham 1993, Addison Wesley.

¹⁴ P. Dicken, op. cit.

¹⁵ D. Harvey: *The Condition of Postmodernity*, London 1989, Basil Blackwell.

¹⁶ Ibid.; F. Cairncross: *The Death of Distance*, Harvard 1997, Harvard Business School Press; I. Wallerstein: *The Modern World-System I and II*, New York 1974 and 1980, Academic Press.

¹⁷ M. Castells, op. cit.; A. Leyshon, N. Thrift: *MoneySpace*, London 1997, Routledge Press.

¹⁸ M. Castells, op. cit.; D. Harvey, op. cit.; J. Womack, D. Jones, D. Roos: *The Machine that Changed the World*, New York 1990, Rawson Associates; S. Arndt, H. Kierzkowski: *Fragmentation*, Oxford 2001, Oxford University Press.

and more cultural communities into part of the capitalist system, though without completely removing the cultural differences between them. In the initial phase of globalisation, members of these communities only served as producers for what was still a rather homogeneous Western consumer market, but in recent decades they have increasingly become customers on the global market themselves. This development has enormous effects on the producers. Though globalisation has dramatically expanded the potential market for their products, the homogeneity and transparency of the consumer demand so typical of the Fordist era is gradually disappearing, since the clientele is no longer culturally homogeneous.¹⁹

The latter development has been further intensified by the *second diversifying force* that typifies especially Europe and the “developed” West, i.e. “reflexivisation”, the increasing “reflexivity” of the modern individual. “The reflexivity of modern social life”, Giddens argues, “consists in the fact that social practices are constantly examined and reformed in the light of incoming information about those very practices, thus constantly altering their character.”²⁰ Giddens argues that reflexivisation is the outcome of large-scale processes that were also in effect in industrial society but have come to maturity in the last few decades. One of these processes is the enormous spread of knowledge. According to Giddens, in traditional local society, a society type that in the West was dominant until the end of the Middle Ages and in some other parts of the world even well into the twentieth century, the production and development of knowledge were monopolised by “guardians of truth”, usually priests. Their task and privilege was to integrate the past, present and future in a coherent system of knowledge of the natural environment, the meaning of the community and the assigned tasks of its individual members.²¹

In the modernisation process that began in Europe after the Middle Ages, the monopoly of these guardians slowly but surely declined. Nation states forced local communities to open up and as of the middle of the nineteenth century national governments introduced compulsory education to foster economic development and thus actively stimulated the spread of knowledge. Though the application of knowledge in industrial society was no longer the monopoly of privileged elites, the evaluation of knowledge as truth remained the domain of “higher” institutions such

as modern science and state bureaucracies. These institutions inherited the “aura of authority” that knowledge-producing elites once had in traditional societies.²²

However, as a result of a second large-scale process, the disintegration of social ties, the traditional forms of authority disappeared and individuals finally began to think for themselves. Our current “post-traditional” world, Giddens claims, “is a world of clever people” who actively reflect on their actions and those of others and no longer take prefabricated rational knowledge for granted.²³ The growing knowledge of nature and social life, he suggests, increases the “reflexivity” of individuals: it enables individuals to exceed social structures and culture and make their own choices. Thus, reflexivisation is also interpreted by Giddens as a process of “individualisation”.²⁴

The processes of reflexivisation and globalisation produced by the central institutions of industrial society gradually undermine the homogeneity on which these institutions were based and aimed at, and stimulate a second wave of change towards a knowledge society. Unlike the first wave of change characterised by informatisation and flexibilisation, the second wave can be typified as *cultural fragmentation*. In industrial society, the pursuit of collective objectives (welfare, security etc.) was facilitated by a set of values and norms shared by all the members of the community, but today’s values and norms are fragmented and a growing diversity of subjects is greatly complicating the pursuit of certain objectives.²⁵ Since the homogeneity of industrial society is gradually disappearing, new types of knowledge are needed to bridge various individual and group identities.

The Rise of Cultural Knowledge and the Global Division of Labour

In our society, the diversification of subject identities has made a third type of knowledge more significant: “cultural knowledge” (cf. Figure 1). Cultural knowledge pertains to the knowledge of identities that differ from one’s own identity. Though especially at the beginning of the modernisation process cultural knowledge was needed by state and business bureaucracies to bridge

¹⁹ G. Ritzer: *The Globalisation of Nothing*, Thousand Oaks, CA 2004, Pine Forge Press.

²⁰ A. Giddens: *The consequences of Modernity*, op. cit., pp. 38-39.

²¹ A. Giddens: *Living in a post-traditional society*, op. cit.

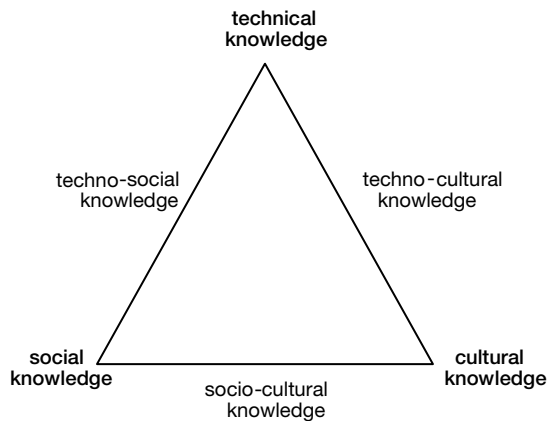
²² Ibid., pp. 56-109 and pp. 86-87.

²³ A. Giddens: *Beyond Right and Left*, Cambridge 1994, Polity Press, p. 7; A. Giddens: *The Consequences ...*, op. cit.; A. Giddens: *Living in a post-traditional society*, op. cit.

²⁴ A. Giddens: *Living in a post-traditional society*, op. cit.

²⁵ A. Amin: *Post-Fordism: Models, Fantasies and Phantoms of Transition*, in: A. Amin (ed.): *Post-Fordism*, Oxford 1994, Blackwell, pp. 1-40; D. Ashley: *History Without a Subject*, Boulder 1997, Westview Press.

Figure 1
Ideal Types of Knowledge



cultural differences between various local and regional communities, in the current world this type of knowledge has become far more relevant. It can be concluded from the fact that in the knowledge society diversity comes from two sources, reflexivisation and globalisation, that in theory there can be two forms of cultural knowledge. The first form pertains to the knowledge of individual identities in a society characterised by reflexive individuals. This form of cultural knowledge requires certain psychological capacities such as empathy.²⁶ In current society, this type of knowledge is required at all levels of economic life, especially the level where producers meet customers in person, e.g. in a department store. The second form of cultural knowledge pertains to knowledge of other group identities, i.e. the norms and values of other culturally homogeneous groups. This form of cultural knowledge requires certain anthropological capacities. In the economic process, the need for this type of knowledge can be observed, for instance, in the appointment of cultural anthropologists in multi-national corporations.

The increased significance of cultural knowledge has been accompanied by the increased significance of two additional types of knowledge: "socio-cultural knowledge" and "techno-cultural knowledge". Socio-cultural knowledge pertains to how differences between individual and group identities can be bridged. This type of knowledge somewhat resembles Castells' concept of "hypertext". In his analysis of the "network society", Castells states that as a consequence of the annihilation of time and space in our time, symbolic interaction loses its reference to experience and culture becomes individualised. "Thus, because there are few common codes", Castells argues, "there is sys-

temic misunderstanding. It is this induced cacophony that is celebrated as post modernity. However, there is one common language, the language of the hypertext. Cultural expressions left out of the hypertext are purely individual experiences. The hypertext is the vehicle of communication, thus the provider of shared cultural codes."²⁷

The question however is still whether in reality a single, non-cultural hypertext, as conceptualised by Castells, is conceivable. In fact, Castells not only presupposes a universality that is hardly feasible (except perhaps in mathematics), he also suggests that the existence of a plurality of hypertexts is impossible. In our interpretation, socio-cultural knowledge is not necessarily universal, but serves to bridge misunderstanding between *some* individual or group identities at a given moment in a given context. Socio-cultural knowledge thus requires an ability to constantly interpret and re-interpret identities and is an endless search for ways for these identities to communicate. We shall return to this below.

Lastly, techno-cultural knowledge pertains to how non-human things ("nature") can be aligned to more than one individual or group identity. The term "techno" might seem a bit misleading, since the sheer workings of technology itself usually cannot be adapted to a specific individual or group identity. Techno-cultural knowledge refers, however, to knowledge needed to apply technology in such a way that it can produce different mental or physical products for individuals or groups with divergent identities. We shall also return to this below.

In our view, the increased significance of cultural, socio-cultural and techno-cultural knowledge is at the foundation of a new economic system and a new social order: the knowledge society. We can analyse this development in the economic process by applying the Marxian distinction between the "social division of labour" and the "technical division of labour".²⁸

The technical division of labour means dividing tasks in the production process into smaller parts performed by a single individual or a single collective of individuals. In the production of a certain good or service at a single company, the technical division of labour results in the "materialisation" of business functions. As a result of the technical division of labour, separate offices or departments emerge that are responsible for one

²⁶ Cf. A. Giddens: *The Transformation of Intimacy*, Cambridge 1992, Polity Press.

²⁷ M. Castells: *Materials for an exploratory theory of the network society*, in: *The British Journal of Sociology*, Vol. 51, No. 1, 1989, pp. 5-24, quote p. 21.

²⁸ K. Marx: *Capital*, Vol. 1, London 1976, New Left Books [first published in 1867].

or more related business functions. However, if the performance of a business function becomes more complicated and costs rise, specialisation is likely to set in. Separate companies or completely new sectors come to focus on certain business functions or series of related business functions and gradually take over the functions' performance from non-specialised companies. This is the social division of labour, and via this process, new commodities and value chains emerge.²⁹

In the production of many goods and services, re-flexivisation and globalisation "create" new business functions. The production of commodities, management, marketing, sales etc. increasingly requires the creation and application of cultural, socio-cultural and techno-cultural knowledge. If the complexity of the required knowledge is limited, the application simple and the costs relatively low, companies can create their own in-house facilities in the form of specialised offices or units. This is the technical division of labour. However, if the required knowledge becomes increasingly more complex and costs rise, the business functions that require these types of knowledge are gradually outsourced to new specialised companies, as in the early phases of the modernising process. This is the social division of labour.

Thus, the increased significance of cultural, techno-cultural and socio-cultural knowledge generates changes in the economic structure at three levels. We only analyse a few of these changes briefly here.

At the level of the *business company*, the technical division of labour causes fundamental changes in work organisation and individual job descriptions. Since the creation and application of types of cultural knowledge are transferred to specialised offices or units, new jobs are created and existing jobs change as well. And since cultural, socio-cultural and techno-cultural knowledge imply a continuing re-interpretation of identities and an endless pursuit of ways these identities can communicate, all the positions responsible for the creation and application of these knowledge types require a great deal of flexibility and lifelong learning (see below).

At the level of the *national or regional economy*, outsourcing produces a social division of labour and severe changes in the economic structure.³⁰ This implies the emergence of new economic sectors specialised in business functions related to the creation and appli-

cation of types of cultural knowledge. The new social division of labour affects all the spheres of life, social, cultural and political, and generates new value chains in the economic sphere.

Lastly, at the level of the *global economy*, outsourcing induces a global division of labour and the emergence of new global value chains.³¹ In the process, the social and economic structures of the outsourcing regions are transformed, as are social and economic life in the regions that take over the outsourced business functions. The new global division of labour facilitates and perhaps even enforces the development of "mono-knowledge economies" specialised in the creation and/or application of a specific type of knowledge.

Thus, the increased significance of cultural, socio-cultural and techno-cultural knowledge is now gradually turning industrial society into a knowledge society. We can however conclude from what is noted above that different types of knowledge societies will emerge, each based on specialisation in a specific type of knowledge. Firstly, we can distinguish between the "knowledge society in a broad sense" and the "knowledge society in a narrow sense" (cf. Figure 2). The knowledge society in a broad sense refers to global society as a whole. The knowledge society in a narrow sense refers to a part of global society specialised in the creation and/or application of a specific type of knowledge. Secondly, since we have discerned three main types of knowledge, we can distinguish three types of knowledge society in a narrow sense (cf. Figure 2).

In the following, we shall conceptualise the three specialised knowledge societies and knowledge society in a broad sense. Our analysis is partly based on an extrapolation of current economic and social trends and partly on an elaboration of the "logic" of each knowledge society in terms of economic production, organisational and occupational structures, and social relations. In the concluding section of this article, we apply the insights to the concrete reality of the European Union and speculate on the consequences of the insights as regards the pursuit of a European knowledge society.

The Techno-cultural Knowledge Society

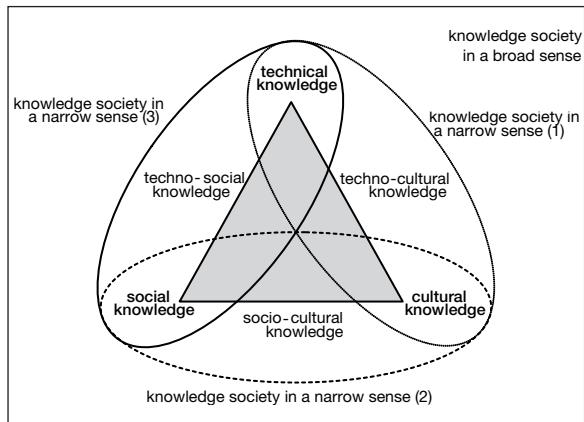
The first type of knowledge society in the narrow sense is the type specialised in the production of commodities that can be attuned to more than one individual or group identity, i.e. the techno-cultural knowledge society. To a certain extent, this society is the materialisation of Ritzer's "McDonaldisation": the

²⁹ Cf. M. Porter: *Competitive Advantage*, New York 1985, The Free Press.

³⁰ P. Dicken, op. cit.; P. A. Gourevitch: *The Macropolitics of Microinstitutional Differences in the Analysis of Comparative Capitalism*, in: S. Berger, R. Dore (eds.): *National Diversity and Global Capitalism*, Ithaca 1996, Cornell University Press, pp. 239-259.

³¹ P. Dicken, op. cit.; P. A. Gourevitch, op. cit.

Figure 2
Types of Knowledge and Knowledge Societies



ability to efficiently apply the knowledge of “nature” is combined with the capacity to gear this application to the variety of individual and group identities on the global market.³²

The main objective of commodity production in this knowledge society is to bridge individual and cultural differences. In a global and reflexive world, individuals and groups can no longer derive their values, norms, and world view from a collective source, so the active fulfilment of their own identity or the cultivation of a group identity have become a critical and inescapable task for every individual or group. As Giddens argues, this task cannot be accomplished without the aid of other identity-seeking individuals or groups.³³ They serve as “mirrors” and can help answer questions regarding the kind of actor one is to become, the kind of identity one is to develop, and how one is to express an identity. In a daily, face-to-face setting, actors organise these confrontations in friendships, romantic relations and contacts with fellow workers. At a higher level, however, identity-seeking individuals and groups need instruments to meet and mirror. The main objective of commodity production in the techno-cultural knowledge society is to create instruments that allow divergent identities to interact and coexist.

One part of commodity production in the techno-cultural knowledge society pertains to the invention of products that can easily be produced in large quantities, but nonetheless are acceptable to a wide variety of cultural groups and individuals as a means to express their uniqueness. This paradoxical task, which bears a resemblance to the production of “fashion” in

industrial society, can be fulfilled via the invention of multifarious high-tech products: standard blue jeans with unique tears and stains, electronic devices to store individual music or photograph collections, and standardised web logs to disclose one’s ever-changing identity.³⁴

Another part of commodity production in this knowledge society enables individuals and groups to communicate via the production of physical or virtual “pipelines”, like today’s cell phone and Internet connections, chat boxes and the like.³⁵ This only partially involves the actual invention of these high-tech communication instruments themselves, though for everyone involved in their production, a minimum of knowledge of the technological hypertext is essential. The main and most precarious mission of this part of commodity production in the techno-cultural knowledge society is however the channelling of communication to the newly created channels by destroying the old ones and making the new ones indispensable, or at least suggesting they are indispensable. By digitalising books, maps, photographs and other competing media, modern-day Internet providers, computer engineers and software designers thus outclass the older means of communication and channel the communication to their own pipelines.

As to the organisation of production, the techno-cultural knowledge society is Janus-faced. On the one hand, there is industrial society’s inclination to efficiency in the continuous pursuit of a further technical division of labour and the perfection of the Fordist model. On the other, the techno-cultural knowledge society is characterised by highly qualified and culture-sensitive capacities needed for the continuing adaptation to new consumers’ demands. As far as the organisation of work is concerned, this combination requires a flexibilisation of the “orthodox” Fordist corporation. The result, which might be called “neo-Fordism”, is a capital-intensive and very flexible organisation with nonetheless a highly advanced technical division of labour.³⁶

The “typical” worker in the techno-cultural knowledge society is Sennett’s “flexible man”.³⁷ His restlessness, ability to adapt to constantly changing circumstances, and lack of commitment to any com-

³² G. Ritzer: *The McDonaldization of Society*, Thousand Oaks 1993, CA, Pine Forge Press.

³³ A. Giddens: *Modernity and Self-Identity*, Cambridge 1991, Polity.

³⁴ J. Rifkin: *The Age of Access*, London 2000, Penguin.

³⁵ Cf. P. Hall: *Cities in Civilization*, New York 1998, Pantheon Books, pp. 952-956.

³⁶ H. Gottfried: *Developing Neo-Fordism*, in: *Critical Sociology*, Vol. 21, No. 3, 1995, pp. 39-70.

³⁷ R. Sennett: *The Corrosion of Character*, New York 1998, W. W. Norton.

munity makes this knowledge society the most dynamic of the three types. Under these circumstances, communities are usually temporary and unable to truly impose the necessary solidarity on their "members".³⁸ In terms of social stratification, this type of society is a true meritocracy,³⁹ giving status and wealth to people with a minimum of knowledge of the technological hypertext and an antenna for superficial cultural similarities.

The Socio-cultural Knowledge Society

The second type of knowledge society in a narrow sense might be characterised as the "service society" *par excellence*.⁴⁰ At first glance, this type of knowledge society seems to be "beyond" the production of real goods. At the core of this type of society is the production of intangibles – trust, images, emotions – making it very difficult to discern highly valuable commodities from hot air. The creation and application of knowledge in this type of society hardly requires any large capital investments. Knowledge is produced and used in small and ad hoc "organisations" and networks, and certain highly skilled business functions that were split up in the industrial era have been re-integrated. A high percentage of the workforce does not even work in organisations at all but is self-employed.

One of the main objectives of commodity production in this knowledge society is to create "common ground" and "trust".⁴¹ The production and use of these commodities become more important if cultural fragmentation and the increasing length of value chains create the danger of mistrust resulting from information asymmetries or cultural misunderstandings. The economic interaction among producers as well as consumers who are more distant in a cultural, geographical or organisational sense can be facilitated via a unifying "language", i.e. a shared set of images and words.

The professionals in a socio-cultural knowledge society create common ground from an immense amount of culturally diverse meanings by selecting or inventing sets of images and words that more or less represent the same feelings or thoughts for all the actors involved. In the process of designing products and services, professionals create metaphors that, if successful, generate comparable feelings and thoughts among culturally diverse (groups of) consumers, e.g.

a cross-cultural image of "love" and "heroism" in movies, of "quality" in advertising and of "justice" in politics. Thus, in this segment of the socio-cultural knowledge society workforce, there is a wide range of old and new occupations: graphic designers, advertisers, social scientists, web designers, political advisers and the like.

Another group of professionals in the socio-cultural knowledge society is involved in creating languages that facilitate communication, interaction and assessment among all the actors in the production of a certain good or service. Ideally, the language is negotiated in the initial phase of the collaboration by consultants and diplomats, and defines the accounting, auditing and benchmarking procedures for the remainder of the partnership period.⁴² In many cases, however, the language needs to be revised time and again, since many concepts ("efficiency", "equity" etc.) simply cannot be captured in a lasting and stable language that can bridge all the cultural differences. This maintenance is performed by a second segment of the socio-cultural knowledge workforce, i.e. consultants, counsellors and mediators. These professionals not only revise the language on a regular basis, they take part in a continuing process of negotiation, making efforts to persuade unwilling partners to accept the language or language changes other partners demand.

Thus, the social stratum of professionals in this knowledge society resembles Florida's "creative class".⁴³ Its most valuable tool is its "cultural capital", i.e. a thorough understanding of cultural meanings and differences as well as the right "habitus".⁴⁴ As Bourdieu knew, it is much more difficult and time-intensive to acquire cultural capital than economic or social capital. So in this type of knowledge society, the rat race for economic success and social recognition starts in the cradle, giving the offspring of the culturally gifted a head start. To keep up, lifelong permanent training is required via formal education and virtually all the activities performed during the waking hours of the day.

In the socio-cultural knowledge society, the boundaries between work and private life have consequently been completely blurred.⁴⁵ Maybe this is why this knowledge society is easily mistaken for a "post-ma-

³⁸ E. Durkheim: *The Division of Labor in Society*, New York 1947, The Free Press [first published in 1893].

³⁹ M. Young: *The Rise of the Meritocracy*, Baltimore 1961, Penguin Books.

⁴⁰ D. Bell, *op. cit.*

⁴¹ F. Fukuyama: *Trust*, New York 1995, Macmillan.

⁴² Cf. M. Power: *The Audit Explosion*, London 1994, Demos; M. Power: *The Audit Society*, Oxford 1997, Oxford University Press.

⁴³ R. Florida: *The Rise of the Creative Class*, New York 2002, Basic Books.

⁴⁴ P. Bourdieu: *Distinction*, London/New York 1984, Routledge & Kegan Paul.

⁴⁵ S. Lash, J. Urry: *Economies of Signs and Space*, London 1994, Sage.

terialist society".⁴⁶ Formally, the working week is relatively short, but in practice work goes on during lunch and dinner, evenings at the movies and the theatre, and even on holidays in distant places.

In terms of social stratification, the socio-cultural knowledge society is a hybrid, where status, economic and power positions tend to fuse. Since social, cultural and economic life are barely separable, cultural capital is easily converted into social and economic capital and vice versa.⁴⁷ In fact a distinction between the three capital types can be hard to draw in this knowledge society. There is consequently a sharp dichotomy in economic, political and cultural life between the "haves" and "have-nots", and hardly any jobs for those without a minimum of cultural knowledge.⁴⁸

The Techno-social Knowledge Society

The third knowledge society in a narrow sense, the techno-social knowledge society, is specialised in creating and applying the types of knowledge needed to produce mass consumer goods, which is why it can be referred to as the "new industrial society". With its focus on large-scale industrial production and its Fordist organisation of the production process, it resembles the industrial society of the nineteenth and early twentieth century in the West.

In the first wave of change (see above), this type of society was initially the result of off-shoring and outsourcing business functions that require low-level skills and had become too expensive in the other types of knowledge society.⁴⁹ In the second wave of change (see above), the phase of cultural fragmentation, however the techno-social knowledge society develops into a mature knowledge society in its own right. Since the creation and application of techno-social knowledge have become too expensive and to a certain extent unnecessary in the other knowledge societies, which have specialised in the creation and application of the other types of knowledge, this knowledge society can eventually outstrip the other two in the development of new efficient and cheap techno-social organisation forms.

The socio-technical knowledge society is fuelled by the restless pursuit by large corporations of greater efficiency, lower costs and higher profits. One could argue that one of the basic challenges of capitalist

production, the creation of efficient combinations of technology and labour, has taken on a new form in this knowledge society. Since information technologies facilitate organisational coordination over large distances, global business corporations can – and must – constantly reconsider the organisation of their value chain to see if a more efficient production regime is possible.

In this pursuit of ever greater efficiency, a variety of professionals deal with the conditions for functional, spatial and temporal integration. IT specialists create and re-create the informational infrastructure, supply chain managers see to an efficient flow of materials, and social managers make sure all the relevant production activities are coordinated. Together, they constantly re-shape the techno-social system, turning change into one of the central characteristics of the production cycle in the techno-social knowledge society.⁵⁰

Yet compared to the other knowledge societies, in a way the techno-social society can hardly be called a knowledge society, since its labour market is characterised by a low demand for skilled and a high demand for unskilled (and poorly paid) workers. The latter work in highly rationalised production processes and are subject to alienation and exploitation. The organisation of work in the techno-social knowledge society is characterised by extreme forms of a technical division of labour. The efforts of the "old" industrial society to efficiently align technology to the capacities of workers and vice versa are intensified in the new one. Innovative "neo-Taylorist" techniques are developed for faster and cheaper production in an extremely competitive environment.⁵¹

The Knowledge Society in a Broad Sense: The Global Knowledge Society

Of the four knowledge societies we have distinguished, the knowledge society in the broad sense is the most difficult to conceptualise, since it is composed of at least three types of knowledge societies in the narrow sense. The global knowledge society can however be called a knowledge society since one of its main organising principles is the division of labour on the basis of knowledge. Ideally, a business function is transferred to and performed in a country or region that can produce at the lowest comparative costs or highest quality level, and is specialised in the production and/or application of the type of knowledge required for the business function. This social division of

⁴⁶ R. Inglehart: *The Silent Revolution*, Princeton 1977, Princeton University Press.

⁴⁷ P. Bourdieu *op. cit.*

⁴⁸ Cf. D. Bell, *op. cit.*

⁴⁹ F. Froebel, J. Heinrichs, D. Kreye: *The New International Division of Labour*, Cambridge 1980, Cambridge University Press.

⁵⁰ H. Pruijt: *Teams between Neo-Taylorism and Anti-Taylorism*, in: *Economic and Industrial Democracy*, Vol. 24, No. 1, 2003, pp. 77-101.

⁵¹ *Ibid.*

Table 1
Types of Knowledge Society

	Techno-cultural	Socio-cultural	Techno-social
Dominant knowledge type	Technical Techno-cultural Cultural	Social Socio-cultural Cultural	Technical Techno-social Social
Examples of products and services	Techno-social goods: computers, software, fast food, bio-technology	Socio-cultural goods: multi-culti food, pop music, movies	Techno-social goods: cars, clothing, toys (mass goods), oil, mining products, grain (raw materials)
	Techno-social services: banking, insurance, web services	Socio-cultural services: consultancy, advertising, diplomacy, cultural tourism	Techno-social services: call centres, bookkeeping services, mass tourism
Socio-economic characteristics	Re-skilling and de-skilling Life-long learning	Re-skilling Life-long learning	De-skilling
	Re-integration of business functions that require high skills; further splitting-up of business functions that require low skills: alienation	Re-integration of certain high-skilled business functions	Further splitting-up of business functions that require low skills: alienation
	Flexibility, mobility and insecurity; exploitation, poverty and insecurity	Flexibility, mobility and insecurity	Exploitation, poverty and insecurity
	Dichotomy between high-skilled and low-skilled workers	Dichotomy between high-skilled and low-skilled workers; few jobs for low-skilled workers	Few jobs for high-skilled workers

labour is made possible by applying new communication and transport technologies.⁵²

However, the knowledge society in a broad sense is not simply the sum of the three specialised knowledge societies in a narrow sense. It is a social system in its own right, at least in economic terms. In the “old” industrial economy, the alteration of economic ties was usually the outcome of ad hoc decisions by individual businessmen or companies looking for ways to produce more cheaply and efficiently, but in the new global economy, value chain modification has become a separate business function.

Thus, in the global knowledge society value chains have become products in themselves and need to be created by a whole new class of professionals. These professionals directly or indirectly create new value chains by linking or destroying existing ones and dividing others into pieces to create new combinations. In this respect, the new professionals serve a business function that did not exist before and almost literally exceeds all the other functions: they perform a “meta business function”.

In the global knowledge society, the creation and management of efficient value chains has become a separate branch of trade, including such tasks as the pursuit and contracting of the cheapest labour possible and the integration of the dispersed activities into

profitable products or services. These tasks are performed by a staff that is composed of a large variety of old and new professionals who can be typified as “economic hit men”: lawyers, financial specialists, personnel officers, organisational advisors and the like.⁵³

Economic hit men and women serve as the shock troops of the global knowledge society, preparing the way for value chain alterations and improvements. Unlike professionals in the other knowledge societies, economic hit men are not linked in any way to a specific geographical setting or community. To paraphrase Giddens, they are the first truly “disembedded” professionals, roaming virtually (and only in some cases physically) around the globe, re-embedding themselves if necessary but always dis-embedding as soon as their job is done.⁵⁴ In this respect, the activities of the economic hit men and women differ substantially from those performed by the professionals of the socio-cultural knowledge society (see above). Whereas the economic hit men and women deconstruct existing value chains, create new ones and leave, it is up to the professionals of the socio-cultural knowledge society to make the new value chains work by creating languages and communication channels between the different actors within the new value chain. Yet, in a sense the economic hit men and women are the real

⁵² P. Dicken, op. cit.

⁵³ J. Perkins: Confessions of an Economic Hit Man, San Francisco 2004, Barrett Koehler.

⁵⁴ A. Giddens: The Consequences..., op.cit.; A. Giddens: Living in a post-traditional society, op.cit.

“linking pins” between the three types of knowledge societies in a narrow sense. By actively manipulating value chains, they annihilate the social tissue of industrial society, while forcing new networks into an overall structure of interdependency – into a global knowledge society.

Knowledge Societies (Plural) in the European Union

In this article, we conceptualise three “ideal types” of knowledge society in the narrow sense that also reflect some of the major tendencies of global economic development. It is tempting to identify these knowledge societies with specific global regions or even whole continents. The United States and Japan with their successful high-tech sectors, for instance, seem to exemplify the techno-cultural knowledge society, Western Europe with its creative industries the socio-cultural variant, and China, India and Brazil with their large-scale industries for mass production the techno-social type. Yet, identifications like this would be misleading and incorrect. On closer examination, we can see comparable divisions of labour taking shape within these clusters of states.

Among the EU member states, we can also observe a gradual division of labour on the basis of knowledge. In recent decades, Germany for example has managed to transform its automotive industry into a high-tech and culture-sensitive sector producing for the higher segments of the automobile market, while countries like Rumania and Slovakia have specialised in the middle and lower segments by putting new “post-Fordist” types of production into effect. Likewise, countries like the UK and the Netherlands have become the home base for numerous banking and consultancy firms which have, however, transferred their bookkeeping business functions to member states like Poland and Hungary, where these functions can be performed more cheaply and efficiently.

Not only has there been a division of labour among the EU member states, the gradual differentiation and specialisation of various cities and regions in the production and use of different types of knowledge is also taking place *within* the EU countries. Eastern European member states like Hungary, Poland and the Czech Republic, for example, not only accommodate highly industrialised regions where mass commodities are produced at low cost, but also culture-sensitive regions like Budapest, Krakow and Prague, that have specialised in tourism, music, movie production and the like, as well.⁵⁵ Likewise, some regions in countries

like France, Spain and Belgium produce services that require “soft” socio-cultural knowledge like design, advertising and diplomacy, and other regions in these countries focus on the production and use of ICT and biotechnology.

These regional differentiations within the member states do not necessarily respect national borders. In the north of Denmark and the south of Sweden for example, the Øresund region has emerged in recent decades, with intensive cross-border cooperation among Swedish and Danish villages and towns all specialised in tourism, the leisure industry, media and entertainment.⁵⁶ There is similar cross-border integration in other economic branches as well, and not necessarily between regions that are geographically connected.⁵⁷

All these examples challenge the notion that the EU is becoming, or indeed can become, one knowledge society, as is presupposed in the Lisbon Agenda and many of its national policy offsprings. Apparently, many European regions and cities are largely making their own way in the globalised economy, despite all the national and supra-national efforts. How can we account for this differentiation and how can the EU and its member states react?

So far we have treated “knowledge economy” and “knowledge society” as more or less interchangeable concepts, but the exact relation between the two is of critical importance in answering this question. In essence, the differentiation of regions within the EU member states is not a recent phenomenon. In the Netherlands for example, in one way or another the socio-cultural knowledge businesses in the Amsterdam region, the techno-social transport trades in the Rotterdam area, and the techno-cultural companies in the Eindhoven region are all rooted in older branches of industry that were functioning side by side in the Dutch industrial era.⁵⁸ These older branches were held together by a “regime” of labour legislation, social security arrangements, social dialogue, education, trade policy, and other national institutions.⁵⁹ As much as possible, the regime fostered the separate “economies” while nonetheless embodying a compromise between their competing interests. The various economies in the Netherlands were thus integrated into a larger Dutch industrial *society*.

⁵⁵ G. J. Hospers: Regional Economic Change in Europe, Münster/London 2004, LIT-Verlag; G. J. Hospers: Creative Cities in Europe, op. cit.

⁵⁷ D. McNeill: New Europe, London 2004, Arnold.

⁵⁸ M. Hoogenboom: Standenstrijd en zekerheid, Amsterdam 2004, Boom.

⁵⁹ Cf. G. Esping Andersen: The Three Worlds of Welfare Capitalism, Cambridge 1990, Polity Press.

⁵⁵ G. J. Hospers: Creative Cities in Europe, in: INTERECONOMICS, Vol. 38, No. 5, 2003, pp. 260-269.

In recent decades, the national institutions in the Netherlands, as in many other EU member states, have been undermined by a series of fundamental processes like globalisation, the national restructuring of welfare states and labour legislation, the liberalisation of world trade and European integration. As a result, the coherence of the economies in these countries is gradually declining and new economies are taking shape across national borders. As the national socio-economic regimes are sapped, this enables companies in various economic sectors to act more freely and adapt more easily to the globalising economic competition. But it also generates new issues as regards the regulation of competition, labour relations, education and so forth. As in the nineteenth and early twentieth centuries, when the problems of industrial development called for the intervention of the national state in most Western countries, nowadays the emergence of new knowledge economies incites the call for a higher or communal authority to solve various problems of collective action.

The Lisbon Agenda of the EU leaders can be viewed as an effort to address these problems, though it generally fails to grasp the essence of the issue. Since there is no such thing as *the* knowledge economy, a policy aimed at fostering the production and use of any specific type of knowledge will harm the production and use of other types of knowledge or at any rate fail to serve the interests of the other knowledge economies in the EU. A one-sided and generalised policy aimed at reducing wage costs and making working hours longer to compete with low-wage countries in Asia, for example, can have a negative effect on the socio-cultural industries that thrive in relaxed environments (see above). The same goes for an indiscriminate educational strategy designed to stimulate technical subjects in schools and universities at the expense of social and cultural ones and vice versa.

So an effective knowledge economy strategy should be based on the reality of more than just one knowledge economy in the EU and the fact that economies no longer necessarily respect national borders, or for that matter the borders of the EU itself. In the future, a thriving European knowledge economy can only be an open and differentiated economy supported by various sets of institutional arrangements, each aimed at the requirements of specific knowledge businesses and trades.