

Chapter 7

21st Century Transitions: Opportunities, Risks and Strategies for Governments and Schools

by

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Introduction

Major socio-economic transitions are surges of change when, from one generation to the next, the work that people do, where they live and what they expect, are no longer the same. Is the world entering such a transition period? Will daily life by the third decade of the 21st century seem radically different for large parts of the world's population when compared with the last decades of the 20th century?

On all counts, the striking answer to this question is "yes". According to the findings of the OECD International Futures Programme (IFP) conference series on 21st Century Transitions the seeds of change are in place (OECD, 1998, 1999*b*, 2000*c*, 2001). However, turning these seeds of change into the socio-economic reality of the 21st century poses a dual challenge. First, creating the conditions that nurture far reaching transformation requires a wide range of distinct yet interdependent changes. Second, as the IFP's analysis underscores, a concerted effort will be required to bring the unfolding reality of 21st century transitions into line with people's ideas of what is desirable. In both areas governments have a strategic role to play in putting the pieces of the puzzle together.

This chapter has three parts. First, it offers a succinct overview of some of the key results of the conference series by sketching the nature of the opportunities and risks that might arise should 21st century transitions prevail. Second, it indicates the kinds of policies needed in order to nurture change on this scale and to stimulate desired outcomes. Finally, as a specific example of mapping strategic directions

* The OECD International Futures Programme. This is under the direct auspices of the Secretary-General, identifies and evaluates newly emerging issues, promotes strategic thinking, tests new ideas, and stimulates dialogue between government, business and research on long-term policy-relevant topics.

for government policies, it examines the relationship between compulsory schooling, and 21st century transitions in advanced OECD countries.

The opportunities and risks of 21st century transitions

Opportunities

Technology: 21st century transitions have the potential to usher in pervasive technological advances on a par with those of previous periods like the steam engine, electricity and the automobile. Information technology could advance to the point where the result is seamless, global knowledge-sharing, be it about buyers, sellers, communities of interest, or culture. Some confidently expect computers using a range of sensory input and output devices, all-pervasive network connectivity, massive databases, and so-called “intelligent agent” software, to be deployed in ways that transform when, where and how people work, play and so forth.

Biotechnology could provide powerful new tools both for fighting diseases in all parts of the world and for reducing the ecological footprint of many industries including agriculture and food processing. Developing technologies for new materials and design for sectors like construction, manufacturing, and transportation could dramatically improve a range of efficiencies as well as the usefulness of many types of products – from buildings and vehicles to clothing and utensils.

Economy: A confluence of economic changes could spark a sustained period of above-average productivity growth to power 21st century transitions worldwide. Three broad developments open up tremendous potential for advancing overall well-being. First, the shift to a knowledge-intensive economy could boost productivity by transforming the organisation and methods of production and consumption. The particularly important dimension of this shift for advanced OECD countries is the prospect that the distinction between supply and demand sides of the economy will begin to blur. This would occur as consumers enter much more directly and actively into the initial part of the production process before the output is actually created.

Second, much deeper global integration could induce a virtuous circle of investment and growth as knowledge, capital, and trade flow freely. Here the evolution of planet-wide networks plays a crucial part in helping people co-operate and compete, experiment and learn. Third, and perhaps most challenging, a transformation in humanity’s relationship to the environment could give rise to an investment boom in more ecological products and ways of living as well as more efficient energy and transportation infrastructures. Such an environmental agenda could dovetail quite effectively with the macro- and micro-level changes involved in moving towards a globally integrated knowledge economy and society.

Society: Growing diversity in the social fabric could well be one of the hallmarks of 21st century transitions. This trend is likely to be pushed along by

changes in demographic structure, shifting income distributions, migration, and the erosion of traditional cultural reference points. Certain trends can already be identified as evidence of such social change, where heterogeneity of social structures match diversity in the economic, technological and educational spheres. A multitude of consumer, leisure and cultural choices are now available on a scale that would have been unimaginable even only fifty years ago.

The transition can be expected to induce major alterations – across the globe and starting from a wide range of departure points – in two of the key determinants of self-identity: social status (income, age, profession, etc.) and authority structures (nation, family, religion, etc.). Greater differentiation might in turn open up opportunities for diversity to fuel the creativity needed to make the most of new technologies, economic change, and social transformation.

Governance: Old forms of governance, in both the public and private sectors, are becoming increasingly ineffective. 21st century transitions are likely to involve new forms of governance that break decisively with two of the primary attributes of today's governance systems. These are the fixed, often permanent allocations of power embedded in the structures and constitutions of many organisations, and the tendency to vest initiative primarily in the hands of those in hierarchically senior positions. New departures in governance are, in turn, likely to be fundamental both for revitalising democracy and for reaping the positive potential of technological, economic and social change.

These changes will call for major advances in the practical skills and rules used in daily life by organisations and individuals, whether operating alone or in concert, locally or globally. The challenge for policy, in both the public and private sectors, is to ensure that people will have the capacity to exercise their liberty and to manage the constraints.

Risks

Technology: Leaps in the capacity and diffusion of new technologies always come with the risks of transition difficulties, misuse, and harmful unintended consequences. Some worry about the capacity, technologically and socially, to continue advancing and inventing new tools, products, and organisational forms for everyday work and home life. Others worry that the on-going transition costs may be too high, or that the risks to cherished traditions (including privacy) or the threats to environmental sustainability will – singly or together – be too great to bear.

Three specific dangers stand out. First, people worry about losing control of tomorrow's "intelligent" machines and genetically engineered life forms. Second, there are fears that radically new tools and products will exacerbate the schisms between haves and have-nots, risk-takers and risk-avoiders. Third, there is real concern that the benefits of technological advances will fail to materialise because the

economic and social changes that shape and diffuse positive technical developments will not occur.

Economy: Long booms depend on a constellation of factors coming together. If one or two of the pieces, like deeper global integration or progress in controlling ecological costs, fail to materialise, then the long-boom could turn into an extended period of stagnation or decline. Without above-average productivity gains to encourage technological, economic and social dynamism, there is a high risk that 21st century transitions will not take place. This, in turn, heightens the risk that there will not be adequate resources to address pressing socio-economic needs or to find the effective “win-win” solutions for destructive conflicts.

Constraints such as limited access to easy-to-use “appropriate technology” and out-dated methods for creating, assessing and valorising human capital threaten to slow change or render it too shallow. If advances towards the intangible economy’s radically new organisational patterns of production, consumption and human settlement remain modest, it will also be harder to find ways to provide the compensation needed to overcome people’s fear of both unfamiliar technology and the prospect of disruption to existing economic and social structures. Similarly, the rapid and much fuller integration of markets required for a long boom is unlikely to be politically feasible without mechanisms for compensating losers and guaranteeing minimum standards.

Society: A number of major risks arise in the context of increasing social diversity. There comes a point at which positive difference and diversity becomes negative inequality and segregation. There are thus risks of unacceptable inequality, especially in the distribution of income, wealth and health. Similar concerns arise about too many individuals having access to only very low absolute levels of resources, as well as issues to do with personal security and human rights.

Three specific risks can be singled out. One is that changes on the scale provoked by 21st century transitions are highly likely to exacerbate old, while provoking new, social conflicts. A second is that people and institutions will not acquire the capacities needed to turn greater diversity into a source of creative solutions to tomorrow’s challenges. Third, there is a risk that the backlashes sparked by greater diversity will triumph, imposing the uniformity espoused by, for instance, intolerant forms of nationalism or religious fundamentalism. Without diversity as a wellspring for the everyday creativity and inventiveness upon which dynamism depends, there seems little chance of reaping the benefits of 21st century transitions.

Governance: The governance risks facing 21st century transitions would arise especially as institutional inertia and resistance by entrenched interests generate considerable conflict and potentially stifle efforts to transform old methods and invent new ones. Transition periods often give rise to deep-seated differences in the perception of risk and insecurity. Typically, those who are not actively creating

the new rules and power structures tend to perceive major changes as driven by external and dangerous forces, which can in turn lead to the backlash from diversity and democracy mentioned above.

All of this would increase the risk that society-wide decision-making capacities – ranging from individuals and households to enterprises and legislatures – could end up being inadequate to the governance challenges entailed by desirable 21st century transitions.

Government policies for encouraging desirable 21st century transitions

Plausibility is not the same as inevitability nor is it desirability. Nurturing the seeds of 21st century transitions, reaping the benefits, and minimising the risks will call for strong policy leadership by governments at all levels across the world. A strategic path for facilitating transitions needs to take advantage of the interdependence and potential for synergy across technological, economic, social, and governance changes. The specific policies can be grouped into one of three categories: first, those policies that represent a continuation of existing approaches, second, policies of significant reform to facilitate fundamental change, and third, initiatives that break entirely new ground.

Continuity: There are a number of key policy areas where continuity with existing approaches will be important. Macroeconomic balances will need to be maintained to guard against inflation and excessive public deficits; so will improvements in the functioning of product, labour and capital markets need to continue through policies that promote the greater transparency and competition that structural adjustment requires. The scope of government regulation, taxation and spending will continue to be a matter of continual review, with approaches and methods refined. Similarly, international guidelines and frameworks will as now be the subject of continuing scrutiny and action, dealing with such issues as corruption, corporate governance, consumer protection, financial transparency, and the monitoring of global threats to health and security. Existing agreements that foster worldwide integration will need to be implemented and extended. These include multi-lateral treaties on trade and investment as well as other cornerstones of globalisation such as the 1948 Universal Declaration of Human Rights and the more recent Kyoto Protocol on greenhouse gases.

Reform: There will be other policy areas calling for considerable re-thinking of the methods and programmes currently in place, such as in social and educational services. Established government programmes were designed for the industrial era when the majority of people experienced similar life-patterns – starting with initial schooling, then steady employment, and lastly retirement at the same fixed age. New approaches to lifelong learning will need to embrace a much wider range of sources for acquiring knowledge and incentive systems for encouraging people to

learn on a continuous basis. Social support systems will need to encourage risk-taking and experimentation without creating dependency and dead-ends. In general, there will need to be a shift away from the direct provision of mass, uniform public sector services to much more diversified, decentralised and demand-driven approaches.

Breakthroughs: Entirely new points of departure will be required in order significantly to improve the capacity of all segments of society, including enterprises and local communities, to break with the rigid, hierarchical methods of the past. There will need to be new ways of doing things that stress personal accountability, internal motivation, and uniqueness. Policy breakthroughs will also be needed in order to address adequately the tensions arising from the asymmetry between, on the one hand, the relatively rapid spread of global markets and, on the other, the slow development in essential legal, institutional and cultural infrastructure.

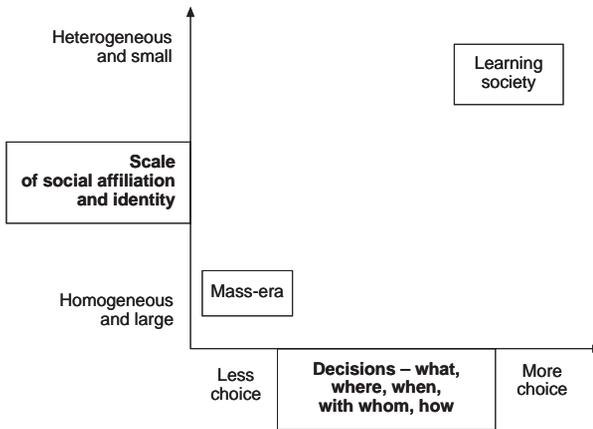
Specific areas for breakthrough include the development of appropriate rules and institutions at national and global levels for ensuring privacy, granting ownership to intangible property, open knowledge sharing, reaping network externalities, and setting a wide range of new technical, economic and social standards. Establishing legitimate and effective global approaches to decision making and implementation will have important implications for addressing planet-wide challenges such as climate change, maintaining competitive markets and finding ways for the winners from global change to compensate the losers.

The implications of 21st century transitions for schools in OECD countries

Universal compulsory schooling, the basic education system of most countries, provides a useful example of what it might mean to pursue policies aimed at encouraging 21st century transitions. Born in and bred to the requirements and practices of the industrial era, schools of the 21st century may be situated in a very different context. For instance, the full shift to a highly integrated global knowledge economy and society seems likely to entail significant revisions in the goals, role, and methods of schools, certainly for the advanced OECD countries.

Three figures illustrate how the broad socio-economic context for schools might change. Figure 7.1 depicts how the transition to a learning society, that some detect in existing trends, might mean to move away from the mass-era ways of forging identity and making decisions. For much of the 20th century, people tended to belong to large, clearly defined groupings with fairly clear moral, political and behavioural codes. National, class and religious identities were clearly articulated and widely shared, in good measure because of schools' influence.

In the 21st century, socialisation is likely to remain one of the main goals for compulsory schooling. The emergence of a learning society, however, suggests significant changes in the context, and hence the content, of socialisation. The new goal is to equip children for a world where their sense of identity is derived from a diverse set

Figure 7.1. **Changing goals – A new context for socialisation**

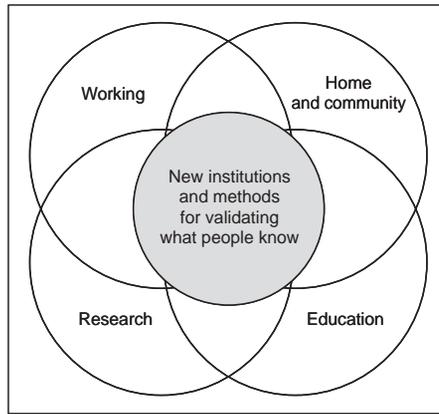
of specific rather than general communities, and facing a vast range of active, self-generated, rather than passive, choices. This is radically different from the mass era, which put a premium on norms of national allegiance, common culture and obedience to hierarchical discipline.

A learning society also implies a major break with mass-era schools as the main recognised source of what people know. In most OECD countries during the 20th century, a certificate or diploma indicating completion of compulsory schooling was a sufficiently precise way of indicating a person's basic competences, both behavioural and cognitive. A learning society demands a major change in this role (see Figure 7.2).

This is for two main reasons. First, in a context where all learning must be developed and used regardless of the nature of its acquisition, there needs to be formal recognition of all sources of "education". This applies to the lessons learned on the street and shop floor or the experiences of failure or success in a start-up enterprise, as well as what was learned in the traditional academic halls. Second, it will be essential in a learning economy to take advantage of people's precise competences in order to create a supply-side network capable of responding to active consumers. These consumers want to co-produce products that meet their personal desires instead of passively choosing from what is on offer.

In this context, the role of schools as both source and signaller of learning, the officially-sanctioned institution at the centre of Figure 7.2, is not just inadequate; indeed, such a monopoly is inimical to the recognition and use of all the learning taking place in society. The existing educational establishment is faced with substantial conflicts of interest when it comes to recognising learning that was neither

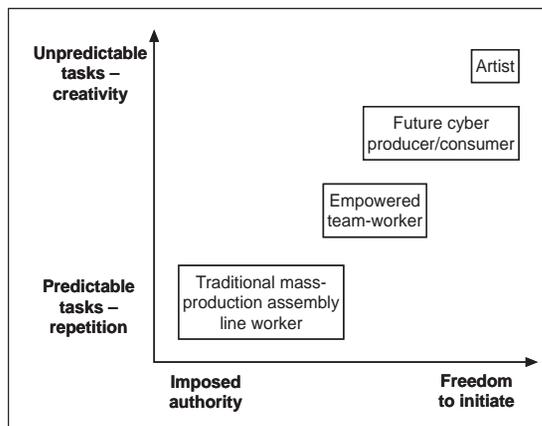
Figure 7.2. **Changing role – Where people learn and how what they know is made transparent**



acquired within its walls nor corresponds to its *a priori* method for specifying certification. New institutions and methods for validating what people know, without a vested interest in any specific form of learning or type of credential, would be more effective in creating the transparency, trust, and incentives that are needed for a learning economy and society.

Finally, Figure 7.3 suggests why traditional teaching methods may no longer be consistent with the goals and roles of schools in the 21st century learning society.

Figure 7.3. **Changing methods – Toward learning to learn and learning by doing**



Without entering in detail into how people learn – a research area that is only now beginning to attract funding commensurate with its importance – there is a clear sense that the teaching methods of the traditional classroom were not designed with tomorrow's cyber producer/consumer in mind. Book, rote, and "chalk and talk" learning certainly have a place, but much less when the key is learning to learn to enable people to thrive in a creative, diverse, and changing networked world. The even older method of "learning by doing", if theory and practice can be satisfactorily combined, may turn out to be more appropriate to the 21st century. For schools, this could mean a wrenching change away from the efficient but passive classrooms of the industrial era to new modes of engaging the minds of students of all ages.

Conclusion

Pursuing this strategic path implies an important convergence of government policy goals towards the encouragement of liberty, diversity, and responsibility – a broadly conceived agenda for 21st century transitions. Convergence of the general policy goals will also be needed if the public sphere is to attain the requisite degrees of transparency, accountability and integrity. The specific policy frameworks and particular methods of implementation, however, will certainly vary widely throughout the world. The starting points for change are highly diverse and, crucially, aspirations differ. Combining the plausible with the desirable is perhaps the biggest challenge posed by 21st century transitions.

© OECD 2001. 21st Century Transitions: Opportunities, Risks and Strategies for Governments and Schools. changes in demographic structure, shifting income distributions, migration, and the erosion of traditional cultural reference points. Certain trends can already be identified as evidence of such social change, where heterogeneity of social structures match diversity in the economic, technological and educational spheres.