

The Relationship Between Law, Government, Business and Technology

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Technology and technological changes affect the legal system. These effects are partly direct and indirect, via changes to the economy and to society. Technological changes alter the relationship between the governed and the government, and between governments. Legal systems also affect the development of technology, and changes in legal systems, whether wrought by technological changes, or otherwise, can have a significant effect upon business.

(A) THE NATURE OF LAW AND GOVERNMENT

What is the relationship between law and government? How does it evolve? What are some of the influences upon this relationship? These are questions which have taxed theoreticians from a number of disciplines for many centuries. This section will not presume to attempt to answer these questions, but rather, it will consider some aspects of the relationship, particularly as they affect business and technology.

An understanding of the regulatory role of the state must be built upon a conceptual and functional analysis of sovereignty, which is the organizing and political principle that national economic policy-making and regulation, as well as international economic co-ordination, is based.¹ Proper appreciation of the internal dimension of sovereignty requires an understanding of the relationship between the state and the society it governs.² As Lawrence Tshuma has emphasised in *Hierarchies and Government versus Networks and Governance: Competing Regulatory Paradigms in Global Economic Regulation*, the relationship between the state and civil society is historically specific and the manner in which sovereign power is exercised is shaped by the configuration

1. Lawrence Tshuma, *Hierarchies and Government versus Networks and Governance: Competing Regulatory Paradigms in Global Economic Regulation*, LAW, SOCIAL JUSTICE AND GLOBAL DEVELOPMENT (1999), http://www.warwick.ac.uk/fac/soc/law/elj/lgd/2000_1/tshuma/.

2. W.H. Reinicke, *Global Public Policy*, FOREIGN AFF. 127-138, 129 (Nov. – Dec. 1997).

of social forces.³ These forces include legal and constitutional rights and limitations. The external dimension of sovereignty is equally circumscribed by an international system where sovereign states are de jure equal.

The liberal interventionist approach to economic policy and regulation, in the context of globalization, would hold that global problems require international collective action. But, as J. Matthews has asserted, a shift in power from hierarchical state organizations to multi-layered networks of supra-states, sub-state, and non-state entities, has broken the dominance of hierarchy, and enjoined a revival of the network-based society.⁴ This argument, however, has been said to resemble technological determinism which overlooks or downplays the role of politics in the development and diffusion of technology.⁵ But that is not a charge which could be laid at Manuel Castells' door.

Manuel Castells attempted an analysis of contemporary society which extended beyond the concept of the information society.⁶ He postulates that society is not purely defined by our technology. Rather, cultural, economical, and political factors contribute to what he calls the "Network Society."⁷ Castells stresses the importance of networks, rather than hierarchically-ranked global cities. Networks are the basis of one of the most important new technologies: information technology.

Society influences law, for law is but a reflection of the society it governs. The following section considers the response of business to changes in the legal environment. Business is a broad sub-set of society. It is as sensitive to legal change – and technological change – as any part of society. An appreciation of the relation-

3. Lawrence Tshuma, *Hierarchies and Government versus Networks and Governance: Competing Regulatory Paradigms in Global Economic Regulation*, LAW, SOCIAL JUSTICE AND GLOBAL DEVELOPMENT (1999), http://www.warwick.ac.uk/fac/soc/law/elj/lgd/2000_1/tshuma/.

4. J. Matthews, *Power Shift*, 76 FOREIGN AFF. 50-71 (Jan.-Feb.1997).

5. Lawrence Tshuma, *Hierarchies and Government versus Networks and Governance: Competing Regulatory Paradigms in Global Economic Regulation*, LAW, SOCIAL JUSTICE AND GLOBAL DEVELOPMENT (1999), http://www.warwick.ac.uk/fac/soc/law/elj/lgd/2000_1/tshuma/.

6. CHALLENGE AND CHANGE IN THE INFORMATION SOCIETY (Susan Hornby et al. eds., Facet 2003).

7. MANUEL CASTELLS, *THE RISE OF THE NETWORK SOCIETY* (Blackwell Publishers, 2d ed. 2000).

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ship between business and the changes in political or technological environment is therefore instructive.

(B) THE RESPONSE OF BUSINESS TO *CHANGES* IN THE LEGAL ENVIRONMENT

(i) *Introduction*

Managers often possess an attitude that separates legal issues from the strategic and operational concerns of the business. However, in a global economy where goods, services, and investments move across political borders, subjecting businesses to the growing complexity of regulation and liability in other countries, this conventional approach to legal concerns is no longer realistic.⁸ The development of business is heavily influenced by the legal environment, including the global legal environment, and by technology.

This section considers how business responds to changes in legal systems, whether wrought by technological changes, or otherwise. Significant changes are being wrought by technology, so the focus is upon the relevance of past and current example of change to the current technological environment. It is not concerned with the social or economic implications of these technological revolutions – profound as they may be.⁹ Nor is it concerned with the effect of technological change upon the structure of government – upon the legal system – nor on how the structure of governments may have, in turn, effected technological changes.¹⁰ Rather it is concerned

8. See GEORGE J. SIEDEL, *USING THE LAW TO GAIN COMPETITIVE ADVANTAGE* (Wiley 2002).

9. For a discussion of the nexus between social change and the law, see ALAN WATSON, *SOCIETY AND LEGAL CHANGE* (Temple University Press, 2d ed. 2001). “It has also been observed that recent finance scholarship finds that countries with legal systems based on the common law have more developed financial markets than civil-law countries.” Paul G. Mahoney, *The Common Law and Economic Growth: Hayek Might Be Right*, 30 J. LEGAL STUD. 503 (2001); see Robert G. King et al., *Finance and Growth: Schumpeter Might Be Right*, 108 Q. J. ECON. 717 (1993). This may be due to the common law’s association with limited government; Paul G. Mahoney, *The Common Law and Economic Growth: Hayek Might Be Right*, 30 J. LEGAL STUD. 503 (2001).

10. There is a considerable body of work on the nexus between constitutions and social and economic change. From the United States’ perspective, for example, see JOHN R. VILE, *THE CONSTITUTIONAL AMENDING PROCESS IN AMERICAN POLITICAL THOUGHT* 137 (Praeger 1992); DANIEL LAZARE, *THE FROZEN REPUBLIC: HOW THE CONSTITUTION IS PARALYSING DEMOCRACY* (Harcourt Brace 1996); DAVID E. KYVIG, *EXPLICIT AND AUTHENTIC ACTS: AMENDING THE U.S. CONSTITUTION* 216 (University of Kansas Press 1996); Richard Kay, *Constitutional Chrononomy*, 13 RATIO JURIS 31, 33 (2000).

with the possible responses of business to paradigmatic¹¹ changes to a legal system caused by technological or other changes.

This section begins with a brief look at some of the ways in which technology affects legal systems, whether at the constitutional level, or less fundamentally, at the legislative, regulatory or administrative level. It also looks at ways in which technology is altering the relationship between the governed and the government, and between governments. After a brief discussion of what is meant by business, and what its role is, the article then considers how legal systems affect technology. It then proceeds to consider how business responds to changes in the legal systems, whether wrought by technological changes, or otherwise. This involves a consideration of two case studies where business has responded to major changes in the legal system – one caused by technology, the other not. The two case studies are analyzed in order to attempt to identify some common elements which may explain a little about the relationship between fundamental changes in the legal system, and the response of business.

For the purposes of this section, business is to be seen as having a broad rather than a narrow definition. It is a commercial activity engaged in as a means of livelihood or profit, or an entity which engages in such activities,¹² as well as a commercial activity engaged in otherwise than for profit.¹³

11. A paradigmatic is a technical concept derived from linguistics and semiotics, used in anthropological theories of meaning, to denote the stable, rule-governed aspect of communication (opposite of syntagmatic, that which flows and moves in time). The concept is often used more loosely about basic premises underlying communication (as grammar underlies language). “Paradigmatic shifts” should thus be understood as fundamental changes in the premises of communication.

Anthrobase Dictionary of Anthropology, *available at* <http://anthrobase.com/dic/eng/def/paradigmatic.htm>; *see* THOMAS KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS (University of Chicago Press 1962) (discussing revolutionary change in the system of scientific knowledge production).

12. *See, e.g.*, the definition at Investorwords.com, *available at* <http://www.investorwords.com/623/businesses.html> (last visited December 19, 2003).

13. *See, e.g.*, the definition of business in the Fair Trading Act 1986 (NZ):
“Business” means any undertaking—
(a) That is carried on whether for gain or reward or not; or
(b) In the course of which—
(i) Goods or services are acquired or supplied; or
(ii) Any interest in land is acquired or disposed of—
whether free of charge or not.

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The role of business in society depends upon the degree of economic development in society.¹⁴ However, whether the economy may be characterized as industrial, post-industrial, or partially industrialized, individuals and groups will see commercial opportunities.¹⁵ These opportunities may arise as a result of changing technology, or changing laws.

Business takes advantage of opportunities afforded by the economic, political, social, and technological environment. Business practices must change to meet the changing environment – including the legal environment. If the legal system is too rigid the economy is restricted.¹⁶ It may also be that certain fields of technological endeavour are more restricted by laws than others. For example, genetic research generally relies upon close government regulation.¹⁷ Certain business undertakings – for example, the cultivation of genetically modified crops¹⁸ – are illegal in some countries and not in others.¹⁹ Sometimes the state follows the lead

14. And upon which economic model is preferred; *see, e.g.*, R.J. HOLTON, CITIES, CAPITALISM, AND CIVILIZATION (Allen & Unwin 1986); *cf.* MICHAEL PERELMAN, CLASSICAL POLITICAL ECONOMY: PRIMITIVE ACCUMULATION AND THE SOCIAL DIVISION OF LABOUR (Rowman & Allanheld 1984).

15. ROBERT R. LOCKE, THE END OF THE PRACTICAL MAN: ENTREPRENEURSHIP AND HIGHER EDUCATION IN GERMANY, FRANCE, AND GREAT BRITAIN, 1880-1940 (Jai Press 1984); ENTREPRENEURSHIP AND THE TRANSFORMATION OF THE ECONOMY (10TH-20TH CENTURIES): ESSAYS IN HONOUR OF HERMAN VAN DER WEE (Paul Klep et al. eds., Leuven University Press 1994).

16. During the second millennium, the Middle East's commerce with Western Europe fell increasingly under European domination. Two factors played critical roles. First, the Islamic inheritance system, by raising the costs of dissolving a partnership following a partner's death, kept Middle Eastern commercial enterprises small and ephemeral. Second, certain European inheritance systems facilitated large and durable partnerships by reducing the likelihood of premature dissolution. The upshot is that European enterprises grew larger than those of the Islamic world. Moreover, while ever larger enterprises propelled further organisational transformations in Europe, persistently small enterprises inhibited economic modernisation in the Middle East; *see* Timur Kuran, *The Islamic Commercial Crisis: Institutional Roots of Economic Underdevelopment in the Middle East*, 63 J. OF ECON. HIST. 414 (2003).

17. *See* Charles F. De Jager, *The Development of Regulatory Standards for Gene Therapy in the European Union*, 18 FORDHAM INTL. L. J. 1303, 1304, 1305 (1995).

18. Emily Marden, *Risk and regulation: U.S. regulatory policy on genetically modified food and agriculture*, 44 B. C. L. REV. 733-87 (2003) and Michael R. Taylor et al., *An Incomplete Picture: Consideration of Environmental Laws to Address Problems that may Arise from Genetically Engineered Crops and Food*, 20 ENVTL. F. 19 (2003).

19. NEW ZEALAND LAW COMMISSION, LIABILITY FOR LOSS RESULTING FROM THE DEVELOPMENT, SUPPLY OR USE OF GENETICALLY MODIFIED ORGANISMS (New Zealand Law Commission 2002).

of the scientists, developers and businessmen, and sometimes the state alone determines the pace and direction of development.²⁰

When there is a profound change in the legal system, whether by political, economic, or social upheaval, or through a seminal technological breakthrough which has the potential to affect the whole of society, then business is directly affected. In the following case studies we will briefly examine a situation where there were profound changes in the legal systems. The purpose of this study is to establish how, if at all, business took advantage of these changes, to its own long-term benefit.

(ii) *Political collapse and laissez faire economies*

The principal case study which illustrates the response of business to major changes in the legal system, is the collapse of communism in Eastern Europe. The collapse was primarily a politically-driven change to legal systems, rather than a technology-driven change.²¹ However, it was a paradigm shift for the legal systems concerned.

The Communist era was marked by a history of inefficient industrialisation in Eastern Europe,²² guided by the region's centralized political leadership. It was chiefly responsible for a long inventory of environmental disasters, and has left a legacy of pernicious, long-term ecological contamination.²³ Economies, however, can evolve more quickly, providing opportunities for business entrepreneurs, such as privatization.²⁴

The fall of communism and the rise of nationalism in Central and Eastern Europe created a large number of new states that qualify as developing countries economically while they undergo

20. See Helen Szoke, *The Nanny State or Responsible Government?*, 227 J. LAW MED. (2002).

21. Cynthia B. Schultz et al., *Economic Development, Democratization, and Environmental Protection in Eastern Europe*, 18 B. C. ENVTL. AFF. L. REV. 53 (1990).

22. See Vlad Sobell, *The CMEA's Future: The Demise of the Soviet-Centered Model*, RAD Background Report/17, Radio Fred Europe Research Reports, January 17, 1989, at 2.

23. See Cornelius van der Veen, *Facts and Figures on Rhine Pollution*, 9 INTL. BUS. LAW. 41 (1981); D.J. PETERSON, *TROUBLED LANDS: THE LEGACY OF SOVIET ENVIRONMENTAL DESTRUCTION* (Westview Press 1993).

24. PRIVATISATION AND ENTREPRENEURSHIP IN POST-SOCIALIST COUNTRIES: ECONOMY, LAW, AND SOCIETY (Bruno Dallago et al. eds., St. Martin's 1992). Privatisation is a set of policies designed to curtail the size and influence of the public sector through the sale of public assets. MARIUSZ MARK DOBEK, *THE POLITICAL LOGIC OF PRIVATISATION 1* (Praeger 1993).

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this political transition. They have begun interacting with the industrialized countries accordingly.²⁵ “For many observers, the recent transition phenomenon represents one of the two most important economic developments of the twentieth century, the other being the Great Depression of the 1930s.”²⁶ “According to Stern, transition involves ‘the establishment of a competitive market economy where central planning once prevailed, including the full range of institutions that are required to support a decentralised economy.’”²⁷ But it has not been wholly successful.²⁸

Business takes advantage of privatization, but most all opportunities to embark on new ventures are prohibited. However, privatization rarely yields a productive investment. The encouragement of long-term investments may require deregulation. Nonetheless, this has rarely been the case in Eastern Europe since the late 1980s.

One example of an Eastern European country undergoing the process of marketization is Bulgaria. Since the fall of Communism in 1989, Bulgaria has embraced economic reform and is gradually becoming a viable investment market. The goal was to achieve “complete intellectual and moral reconstruction” for total economic restructuring to occur and for the establishment of a new institutional system.²⁹ Bulgaria’s strategic geographic location provides easy access to the European, Asian and North African markets. Further, the lack of ethnical tension makes the country a center of economic and political stability on the Balkans. “The costs of Bulgarian labor are significantly lower than the European average, and various trade agreements with neighbouring countries ensure

25. Vinod Rege, *Economies in transition and developing countries: prospects for greater co-operation in trade and economic fields*, 27 J. WORLD TRADE 83 (Feb. 1993).

26. Peter Koveos, *Economics in transition: recent performance*, 30 SYRACUSE J. INT’L L. & COM. 287 (2003) and Nauro Campos et al., *Growth in Transition: What We Know, What We Don’t, and What We Should*, 40 J. ECON. LITERATURE 793 (2002).

27. Peter Koveos, *Economics in transition: recent performance*, 30 SYRACUSE J. INT’L L. & COM. 287 (2003) and NICHOLAS STERN, *TRANSITION: PRIVATE SECTOR DEVELOPMENT AND THE ROLE OF FINANCIAL INSTITUTIONS* (European Bank for Reconstruction and Development 1994).

28. *THE RULE OF LAW AFTER COMMUNISM: PROBLEMS AND PROSPECTS IN EAST-CENTRAL EUROPE* (Martin Krygier et al. eds., Ashgate 1998); P. SARCEVIĆ, *PRIVATISATION IN CENTRAL AND EASTERN EUROPE* (Graham & Trotman 1992).

29. Csaba Varga, *Transformation to Rule of Law from No-Law: Societal Contexture of the Democratic Transition in Central and Eastern Europe*, 8 CONN. J. INTL L. 487, 488 (1993).

a duty-free movement of goods and services within a market of 550 million consumers.”³⁰

Yet, Bulgaria’s favourable geographic location and low labour costs have failed to attract foreign investors.³¹ Despite the advantages Bulgaria offers, there were concerns based on recent political and economic history.³² Internally, fears of inflation, an inefficient judiciary, an uncertain legislative framework, inefficient government bureaucracy, a protracted privatization process, and corruption continued to deter foreign investment.³³ Internally, the picture was slightly different. As in most of post-Communist Eastern Europe, domestic businesses flourished, often sporadically,³⁴ but in a relatively unregulated manner similar to the growth of the US economy during the nineteenth century.

Even in areas not normally thought of as ‘commercial’ there were opportunities for business models and for business in post-Communist Eastern Europe. With the old hierarchical structures disintegrating and cultural policy largely dismantled throughout Central and Eastern Europe, the issue of privatization and the concomitant threat of a commercialization or “marketization”³⁵ of the arts and culture began to dominate the policy debates.³⁶ As Schuster has argued, privatization became a “buzzword” indiscriminately used for a whole range of processes and rationales for policy action.³⁷

30. Dora Djilianova, *To be or not to be: What went right in the Bulgarian foreign investment climate after 1997*, 25 T. JEFFERSON L. REV. 223 (2002) and Bulgarian Foreign Investment Agency, *Bulgarian Business Guide: Legal, Tax, and Accounting Aspects*, at 6 (2002), available at <http://www.bfia.org> (last visited December 9, 2003).

31. Dora Djilianova, *To be or not to be: What went right in the Bulgarian foreign investment climate after 1997*, 25 T. JEFFERSON L. REV. 223 (2002).

32. *Id.*

33. *Id.*

34. As in the growth of the opportunist “black market”.

35. That is, a movement away from a centrally planned economy and toward a market system integrated with the world economy. Emily Stoper et al., *Democratisation and Women’s Employment Policy in Post-Communist Bulgaria*, 12 CONN. J. INTL L. 9 (1996).

36. PRIVATISATION/DESETATISATION AND CULTURE. CONFERENCE READER FOR THE CIRCLE ROUND TABLE 1997 (A. van Hemel et al. eds., Boekman Foundation/Twente University 1997).

37. J. M. Schuster, *Deconstructing a Tower of Babel: Privatisation, Decentralisation and Devolution and Other Ideas in Good Currency in Cultural Policy*, 8 VOLUNTAS: INTL J. VOLUNTARY NON-PROFIT ORGANIZATIONS 261 (1997).

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Although the arts and culture were subject to governmental control and censorship in the party-states of the Warsaw Pact, the supply of artistic and cultural goods and services was plentiful, heavily subsidized, and widely accessible. With the demise of socialism and the fall of the Berlin Wall, perceived as the victory of the capitalist West, concerns arose as to what the change of systems might mean for the future of the arts in Central and Eastern Europe and in the Newly Independent States (NIS) of the former Soviet Union.³⁸

Because of the tremendous political, economic, and social challenges of the transition, a widespread privatization of cultural assets, if not a complete abandonment of culture by the state, was the logical, if undesired, outcome of the revolution after the immediate post-1989 euphoria had subsided. Many countries in the region saw “the march through the ‘valley of death’ [take] its toll”³⁹ with the initial dismantling of certain cultural institutions such as cultural centers, movie houses, theaters, and youth and music clubs.⁴⁰

Although the cultural industries⁴¹ have mostly been transferred to the private or market sector, the state has not relinquished its primary responsibility for the institutions of high culture in the region. Moreover, a third non-profit sector has also developed between the state and the market as a result of the loss of certain forms of state patronage and of pre-existing, less institutionalised venues of cultural activity and production in the socialist era.⁴² These cultural industries have been relatively successful for such enterprises. Generally speaking, the degree of economic success seems to depend upon the infrastructure – political, social, economic, and legal.

A decade of experience with the transition from centrally planned to market economies has shown that the strength of a country’s market-supporting “institutions” powerfully affects the

38. Stefan Toepler, *From Communism to Civil Society? The Arts and the Nonprofit Sector in Central and Eastern Europe*, 30 J. ARTS MGMT. L. & SOC’Y 7 (2000).

39. O. Novotny, *Key Issues in the Transformation of Culture in the Post-Socialist Countries: With Particular Reference to the Slovak Republic*, 1 EUROPEAN J. CULTURAL POL’Y 217, 218 (1995).

40. G. Muschter, *Kunstlerforderung in der Bundesrepublik Deutschland; in KULTURFORDERUNG: MEHR ALS SPONSORING* 35-40 (R. Strachwitz & S. Toepler eds., Gabler 1993).

41. Including publishing, cinema, recording, and the media.

42. Stefan Toepler, *From Communism to Civil Society? The Arts and the Nonprofit Sector in Central and Eastern Europe*, 30 J. ARTS MGMT. L. & SOC’Y 7 (2000).

transition success.⁴³ The decisions made by former countries of the Soviet Union – newly independent states (“NIS”) – to build free market economies require appropriate legal structures. New civil codes have been successfully adopted in many of the NIS. Work on the new Civil Code in Ukraine based on free-market principles is still in progress.⁴⁴ The form of the legal system may not be influenced by the business community, but business is still able to take advantage of the reforms which have occurred, particularly with regard to privatization.

The legal codes entrench ‘western’-style free market models, including private ownership of business enterprises. Over the past decade, privatization has been advanced, as these countries have moved to dismantle their previous, dominantly state-owned economies.⁴⁵

Massive redistribution of property occurred that reshaped not only their economic systems but their political and social systems as well.⁴⁶ However, in the absence of significant restructuring, privatization alone could not solve the underlying problems facing the previously state-owned enterprises.⁴⁷ One hurdle to overcome in privatization was the fact that Communist rule was long intertwined within the countries of Eastern Europe, and that the judicial system was directly affected by it. Consequently, it has become very hard to find judges who are qualified to rule on the actions and policies of their former Communist rulers.⁴⁸ Nor was the rule of law necessarily fully embedded.⁴⁹

43. Bernard S. Black et al., *Institutional Reform in Transition: A Case Study of Russia*, 10 SUP. CT. ECON. REV. 211 (1993).

44. Alexander Biryukov, *The Doctrine of Dualism of Private Law in the Context of Recent Codifications of Civil Law: Ukrainian Perspectives*, 8 ANN. SURV. INTL & COMP. L. 53-54 (2002).

45. See Csaba Varga, *Transformation to Rule of Law from No-Law: Societal Contexture of the Democratic Transition in Central and Eastern Europe*, 8 CONN. J. INTL L. 487 (1993).

46. *Id.*

47. See INTERNATIONAL LABOUR ORGANISATION, *WORLD LABOUR REPORT 64* (International Labour Organisation 1995). See also MARIUSZ MARK DOBEK, *THE POLITICAL LOGIC OF PRIVATISATION 68* (Praeger 1993) (discussing the steps that Poland took in privatizing its economy).

48. See Mark Gibney, *Decommunization: Human Rights Lessons from the Past and Present, and Prospects for the Future*, 23 DENV. J. INTL. L. & POL'Y 7, 88 (1994).

49. See Csaba Varga, *Transformation to Rule of Law from No-Law: Societal Contexture of the Democratic Transition in Central and Eastern Europe*, 8 CONN. J. INTL L. 487 (1993).

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More significantly, mass privatization left new owners and managers with the responsibility of implementing the investments and reforms necessary to make their enterprises viable.⁵⁰ These investments and reforms were created through free trade in the newly capitalized markets.⁵¹ Some of the new enterprises were run by the 'old guard' – bureaucrats from the Communist era -- most passed, however, to the new business elite.

Post-Communist Eastern Europe saw business reacting feverishly to the relaxation of previously strict and prohibitive legal regulation. The immediate consequence, especially where political uncertainty remained, was unregulated growth. But it was often not in productive sectors – such as industry and agriculture – but rather where large short-term profits could be most readily made.⁵²

The potential for profit was greatest when one embarked on a new enterprise, rather than reviving inefficient Communist-era enterprises. Unfortunately, this meant decay in what were often the more productive sectors of the economy (such as heavy industry), while the ephemeral grew. But business reacted to deregulation by seizing any opportunity now allowed to make money,⁵³ in preference to maintaining the old economies. This encouraged an opportunistic spirit of *laissez faire*, the almost inevitable result of the end of centralized planning.

(iii) Conclusion

We will now see how business responded to these profound legal changes. In the case of the collapse of Communism in Eastern Europe, we may see that business will seek the short-term profit in preference to the longer-term profit. The sudden freedom to engage in private enterprise, coupled with the relatively inefficient and ill-developed public sector, meant that much of the business activity in the newly deregulated Eastern Europe was not based

50. See INTERNATIONAL LABOUR ORGANISATION, WORLD LABOUR REPORT 64 (International Labour Organisation 1995).

51. See Csaba Varga, *Transformation to Rule of Law from No-Law: Societal Contexture of the Democratic Transition in Central and Eastern Europe*, 8 CONN. J. INTL L. 487 (1993) (discussing how the transition period enabled former Communist countries to set historic new directions for their future).

52. This was often in marginally legal or illegal activities, such as gambling, drugs, and prostitution.

53. And some not allowed.

on strong foundations. There will always be victims of legal change,⁵⁴ just as there will always be winners. The long-term success of the newly developing market economies requires the nurturing of businesses committed to the long-term, rather than short-term gains. The only way to achieve this appears to be to ensure that deregulation is not too swift.

This section asked how business responds to changes in legal systems, whether wrought by technological changes, or otherwise. It will be illustrated that this response varies depending on the state of the pre-existing economy and of the legal system. Where there is already a thriving private sector, the advent of new technologies will be seen as an opportunity for long-term investment – even though they may be tightly regulated. Further, investment requires sufficient legal protection for intellectual property.

Where there is a less well developed private sector, and where the economy is tightly controlled, the ending of control also offers opportunities. Here, the outcome will be influenced by the weakness of the private sector. Short-term gains will be preferred to long-term gains.

Business will take advantage of any new opportunity for profit, whether offered by new technology or comprehensive deregulation. But the nature of the investment, long-term or short-term, productive or parasitic, will depend upon the maturity and strength of the pre-existing business community. Where it is strong, there will be long-term investment, but if it is weak and ill-developed, the opposite is true.

(C) TECHNOLOGY'S EFFECT ON LEGAL SYSTEMS

What is technology? Common dictionary definitions include “the practical application of knowledge especially in a particular area”, or “a manner of accomplishing a task especially using technical processes, methods, or knowledge.”⁵⁵ There are both wide and narrow definitions, from technology as objects (tools, machines, instruments, weapons, appliances – the physical devices of technical performance), to technology as a socio-technical system (the manufacture and use of objects involving people and objects).

54. Christopher T. Wonnell, *The Noncompensation Thesis and its Critics: A Review of This Symposium's Challenges to the Argument for Not Compensating Victims of Legal Transitions*, 13 J. CONTEMP. LEGAL ISSUES 293 (2003).

55. Merriam-Webster Online Dictionary, available at <http://www.m-w.com/dictionary/technology>.

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Technology is marked by different purposes. Change in the material environment is the explicit purpose of technology, and not, as is the case with science, the understanding of nature. At the center of technology lies design. The motivating factor behind all technological activity is the desire to fulfill a need. Not only may design and production involve co-operation between different specialities, but may involve “technologists” in performing a multitude of functions, such as working with others.

Technology is infused by values at every point. Value decisions may be called for not only in relation to the specific design criteria (such as aesthetic, ergonomic and economic judgements, suitability for purpose and ease of manufacture) but also in relation to the rightness or wrongness of a particular solution in ethical terms. Technological enterprises are determined not by advances in knowledge or simply by the identification of needs, but by social interests. Of the potential new technologies available at any one time only a few are developed and become widely implemented. Technology is shaped by society and by consumer choice. Yet it can also be argued that technology shapes society.

The definition of technology used in this paper is “human innovation in action that involves the generation of knowledge and processes to develop systems that solve problems and extend human capabilities.”⁵⁶

Technology affects the legal system, in that the generation of knowledge and processes to develop systems that solve problems and extend human capabilities results, almost inevitably, in changes to the society which conceives and implements the processes and systems. Changes to society change law and the legal system.

The effect of different forms of technology will, however, be different. Technology as objects and as a socio-technical system will differ in their effects. This presents some difficulties in identifying and understanding the nature of the relationship between law and technology, and technology and society. No single definition of technology would suffice to produce a coherent understanding, nor would it adequately reflect the changing nature of the relationship, temporally and spatially. Biotechnology, which raises profound ethical and religious questions, may be a greater influence on ethics and social policy than other technologies, such as telecommunications. Yet the latter may have equally great socio-

56. INTERNATIONAL TECHNOLOGY EDUCATION ASSOCIATION, STANDARDS FOR TECHNOLOGICAL LITERACY (International Technology Education Association 2000).

political effects, and certainly threatens specific fields of law, such as intellectual property law and privacy law.

The current technological revolution⁵⁷ brings with it seminal advances across a multitude of disciplines, and linked – if linked at all – by the distinction of belonging to what has been called the “knowledge revolution.”⁵⁸ This new revolution brings with it challenges to legal systems, and to constitutions, which cannot be underestimated.⁵⁹ At this time, however, we are unsure of the economic, social, and legal effects of this technological revolution.⁶⁰

Some facets of the revolution⁶¹ offer opportunities for internationalization or globalization⁶² on a scale previously unimaginable.⁶³ This poses challenges to states, and at the same time offers almost unprecedented opportunities for business

57. Here, “technology” is defined as processes and things people create for the purpose of using them to alter their lifestyle or their surroundings.

58. See Graciela Chichilnisky, *The Knowledge Revolution*, 7 J. INTL TRADE & ECON. DEV. 39 (1998) (A new pattern of economic growth – knowledge intensive growth – replaces the resource intensive patterns that prevailed hitherto).

59. For an ecological perspective, see L. ALI KHAN, *THE EXTINCTION OF NATION-STATES: A WORLD WITHOUT BORDERS* (Kluwer Law International 1996).

60. For instance, see Michael H. Shapiro, *Thinking about biomedical advances: The role of ethics and law: On the possibility of ‘progress’ in managing biomedical technologies: Markets, lotteries, and rational standards in organ transplantation*, 31 CAP. U. L. REV. 13 (2003).

61. Particularly the Internet and the telecommunications revolution in general. See Michael Leventhal, *The Golden Age of Wireless*, 14 INTELL. PROP. & TECH. L.J. 1 (2002).

62. For a discussion of some effects of this, see MASATSUGU TSUJI, *TRANSFORMATION OF THE JAPANESE SYSTEM TOWARDS A NETWORK ECONOMY, THE INTERNET REVOLUTION: A GLOBAL PERSPECTIVE* (Emanuele Giovannetti & Charles Nesson eds., Cambridge University Press 2003); IAN TUNSTALL, *TAXATION AND THE INTERNET* (Lawbook Co., Pyrmont 2003); *BORDERS IN CYBERSPACE: INFORMATION POLICY AND THE GLOBAL INFORMATION INFRASTRUCTURE* (Brian Kahin et al. eds., MIT Press 1997); Adam Czarnota, *A few reflections on globalisation and the constitution of society*, 24 U.N.S.W. L.J. 809-16 (2001).

63. Location remains important, but it is virtual location, rather than physical location that is determinative. There is no necessary connection between an Internet address and a physical location.

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expansion.⁶⁴ Globalization⁶⁵ is now an economic fact,⁶⁶ if still far from uniform.⁶⁷ It is not yet a political reality – indeed it may never be so – and all law is *prima facie* territorial.⁶⁸ Individuals nevertheless have unparalleled access to information and commerce across the globe,⁶⁹ allowing them to both buy and to sell products and services globally,⁷⁰ and to take part in a global commons.⁷¹ This further affects their relationship with their national governments.

It is relatively clear that technology affects legal systems.⁷² It is direct, for example, in the advent of telecommunications which

64. PIPPA NORRIS, *DIGITAL DIVIDE: CIVIC ENGAGEMENT, INFORMATION POVERTY, AND THE INTERNET WORLDWIDE* 40 (Cambridge University Press 2001).

65. This might be defined as those processes which tend to create and consolidate a unified world economy, a single ecological system, and a complex network of communications that covers the whole globe, even if it does not penetrate every part of it. WILLIAM TWINING, *GLOBALISATION AND LEGAL THEORY* 4-10 (Butterworths 1998).

66. And it is also an extremely broad subject of study. Doron M. Kalir, *Taking Globalisation Seriously: Towards General Jurisprudence*, 39 *COLUM. J. TRANSNAT'L L.* 785, 821 (2001).

67. Though it might be noted that even Bhutan, one of the poorer and more remote countries, established a mobile telephone network in late 2003. Richard Taylor, *Himalayan kingdom goes mobile*, BBC News, at <http://news.bbc.co.uk/2/hi/technology/3335417.stm> (22 December 2003).

68. *American Banana Co. v. United Fruit Co.*, 213 U.S. 347, 357 (1909) (and international law has a limited – though growing – role in business activities). See also GUY ARNOLD, *WORLD GOVERNMENT BY STEALTH: THE FUTURE OF THE UNITED NATIONS* (St. Martin's Press 1997); BERTRAND EARL RUSSELL, *TOWARDS WORLD GOVERNMENT* (New Commonwealth 1947); CLARENCE BRINTON, *FROM MANY ONE: THE PROCESS OF POLITICAL INTEGRATION, THE PROBLEM OF WORLD GOVERNMENT* (Harvard University Press 1948); HOWARD O. EATON, *FEDERATION: THE COMING STRUCTURE OF WORLD GOVERNMENT* (University of Oklahoma Press 1944).

69. See also WALTER B. WRISTON, *THE TWILIGHT OF SOVEREIGNTY: HOW THE INFORMATION REVOLUTION IS TRANSFORMING OUR WORLD* (Scribner 1992) (examining the challenges to sovereignty posed by the information revolution).

70. The “knowledge revolution” is based on the acquiring, processing, and dissemination of knowledge, just as the last great technological revolution, the Industrial Revolution, concerned the mass production, and distribution of commodities. CHARLES MORE, *UNDERSTANDING THE INDUSTRIAL REVOLUTION* (Routledge 2000).

71. The global commons is the common heritage of all humanity – though commonly limited to the comprises those features of the geo-biosphere – such as forests, bio-diversity, oceans and global atmosphere – that in combination form the global climate system. Global Commons Institute, at <http://www.gci.org.uk/> (last visited December 21, 2003).

72. See, e.g., WALTER B. WRISTON, *THE TWILIGHT OF SOVEREIGNTY: HOW THE INFORMATION REVOLUTION IS TRANSFORMING OUR WORLD* (Scribner 1992).

allowed state-to-state diplomatic negotiations to be conducted at a governmental level, thereby reducing the role of diplomatic representatives.⁷³ The affects are primarily indirect, however, via changes to the economy and to society.⁷⁴ Technology is also altering the relationship between the governed and the government, and between governments themselves.⁷⁵ It is changing specific technical rules, such as the alteration of copyright laws which occurred as a result of the advent of electronic technologies.⁷⁶ It is also having a wider effect. The globalization effect of the Internet,⁷⁷ in particular, is affecting legal systems.

Legal systems themselves also affect technology because the development and utilization of technology may be controlled to a greater or lesser extent by laws and by the legal system.⁷⁸ Thus businesses, and those involved in the development of technology, must be aware of the effect changes to the legal system may

73. GEOFFREY MOORHOUSE, *THE DIPLOMATS: THE FOREIGN OFFICE TODAY* (Jonathan Cape 1977).

74. Such as the Internet. Sunstein has argued that, by increasing the possibility of community, the Internet has undermined the American republic. In his view, the printing press helped create modern nationalism, as books and newspapers came to be written in the vernacular, encouraging a conception of a shared community among groups of people who would never actually meet. His concern is that through the Internet we may choose to find only "echo chambers" of our own opinions, magnifying and confirming our inclinations and resulting in a deeply polarised society. CASS R. SUNSTEIN, *REPUBLIC.COM* (Princeton University Press 2001).

75. For instance, it has been said that the Internet poses a threat to state sovereignty. Georgios Zekos, *Internet or Electronic Technology: A Threat to State Sovereignty*, 3 *JOURNAL OF INFORMATION, LAW AND TECHNOLOGY* (1999), at <http://elj.warwick.ac.uk/jilt/99-3/zekos.html> (last visited November 28, 2003); David G. Post and David R. Johnson, '*Chaos Prevailing on Every Continent: Towards a New Theory of Decentralised Decision-Making in Complex Systems*' (June 14, 1999) Social Science Research Network Electronic Library, at <http://papers.ssrn.com/sol3/delivery.cfm/99032613.pdf?abstractid=157692> (last visited December 1, 2003). See also Dan L. Burk, *Federalism in Cyberspace*, 28 *CONN. L. REV.* 1095 (1996); Joel R. Reidenberg, *Governing Networks and Rule-Making in Cyberspace*, in *BORDERS IN CYBERSPACE* 84, 85-87 (Brian Kahin and Charles Nesson eds., MIT Press 1997).

76. See, e.g., in the United States, the Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860, 2905 (1998), and in New Zealand, the Electronic Transactions Act of 2000 (NZ).

77. Though it has other causes, partly economic, partly social, and partly political.

78. See Remigius N. Nwabueze, *Ethnopharmacology, patents and the politics of plants' genetic resources*, 11 *CARDOZO J. INT'L & COMP. L.* 585 (2003); Henrique Freire de Oliveira Souza, *Genetically Modified Plants: A Need for International Regulation*, 6 *ANN. SURV. INT'L & COMP. L.* 129 (2000).

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have,⁷⁹ for it may affect their activities. They must be conscious of all aspects of the legal environment in which they operate.⁸⁰

All new technologies, whether mechanical, biotechnology,⁸¹ production, communications, or any other form, challenge existing legal concepts.⁸² This is true both with respect to specific laws, as well as the structure of the state legal system, and of the constitution.⁸³ For instance, copyright law has been seriously affected globally by the advent of the Internet,⁸⁴ and is in the process of adjusting to this new medium.⁸⁵ Technological changes can produce, or assist, relatively dramatic changes in economic and social organization in a short span of time.⁸⁶

79. Janet L. Dolgin, *Embryonic discourse: Abortion, stem cells, and cloning*, 31 FLA. ST. U. L. REV. 101 (2003).

80. Including private, domestic, national, transnational, supranational, and international.

81. This may be defined as "any technique that uses living organisms or substances from those organisms to make or modify a product, to improve plants or animals, or to develop microorganisms for specific uses;" Office of Technology Assessment, U.S. Congress, *Biotechnology in a Global Economy*, app. f, at 268 (1991).

82. See Nasheri Hedieh, *The Intersection of technology crimes and cyberspace in Europe: The Case of Hungary*, 12 INFORMATION AND COMMUNICATIONS TECHNOLOGY LAW 25 (2003).

83. See Tom W. Bell, *Free speech, strict scrutiny, and self-help: how technology upgrades constitutional jurisprudence*, 87 MINN. L. REV. 743-778 (2003); Mark S. Kende, *Technology's future impact upon state constitutional law: the Montana example*, 64 MONT. L. REV. 273-94 (2003); Deborah Jones Merritt, *The Constitution in a brave new world: a century of technological change and constitutional law*, 69 OR. L. REV. 1-45 (1990).

84. See Neil Weinstock Netanel, *Copyright and a democratic civil society*, 106 YALE L. J. 283-387 (1996); David Friedman, *Does technology require new law?*, 25 HARV. J.L. & PUB. POL'Y 71-85 (2001) (Friedman discusses past technological changes relevant to copyright law and the law's response. He describes the technological changes that are now occurring or can be expected to occur over the next few decades, the issues they raise for the legal system and some possible responses).

85. See MIHÁLY FICSOR, *THE LAW OF COPYRIGHT AND THE INTERNET: THE 1996 WIPO TREATIES, THEIR INTERPRETATION AND IMPLEMENTATION* (Oxford University Press 2002).

86. See MANUEL CASTELLS, *THE RISE OF NETWORK SOCIETY* (Blackwell 1996); William E. Scheuerman, *Constitutionalism in an age of speed*, 19 CONST. COMMENT. 353, 359-60 (2002).

Technological changes may also affect constitutions, particularly where the technological changes are profound.⁸⁷ Social and economic acceleration affects constitutions because they are expected to provide stable rules suited to long-term use.⁸⁸ The Lockean constitution was perceived as one which would be unalterable, because it encompassed all that was needed for a sound constitution,⁸⁹ though this conception of a constitution has been challenged.⁹⁰ More importantly, social and economic acceleration conflicts with the traditional expectation that constitutional lawmakers can be expected to predict future trends with some measure of competence.⁹¹ For moral as well as economic reasons, sound constitutions aim at promoting exchange and constraining hierarchy.⁹² This is difficult if there is disparity between less sophisticated constitutions and more sophisticated society, economy, or technology.

Technological advances in fields other than the Internet challenge the boundaries of law, science, public policy, and ethics.⁹³

87. They may indeed have revolutionary consequences. *See, e.g.*, the Industrial Revolution's contribution to the 1848 political revolutions in Europe – RUDOLF STADELMANN, SOCIAL AND POLITICAL HISTORY OF THE GERMAN 1848 REVOLUTION (J.G. Chastain trans., Ohio University Press 1975).

88. William E. Scheuerman, *Constitutionalism in an age of speed*, 19 CONST. COMMENT. 353, 360 (2002).

89. John Locke, *The Fundamental Constitutions of Carolina*, in POLITICAL WRITINGS OF JOHN LOCKE 210 (David Wootton ed., Penguin 1993).

90. William E. Scheuerman, *Constitutionalism in an age of speed*, 19 CONST. COMMENT. 353, 361 (2002).

91. *Id.* at 362.

92. John O. McGinnis, *The Symbiosis of Constitutionalism and Technology*, 25 HARV. J.L. & PUB. POL'Y 3, 4 (2001).

93. See Christine C. Vito, State biotechnology oversight: the juncture of technology, law, and public policy, 45 ME. L. REV. 329-83 (1993); Organisation for Economic Co-operation and Development, Bio technology and the changing role of government (Organisation for Economic Co-operation and Development, Paris, 1988); ROBERT H. BLANK, THE POLITICAL IMPLICATIONS OF HUMAN GENETIC TECHNOLOGY (Westview Press 1981); E. Donald Elliott, *The Genome and the law: Should increased genetic knowledge change the law?*, 25 HARV. J.L. & PUB. POL'Y 61 (2001).

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Biotechnology in general is highly controversial,⁹⁴ and particularly so is embryonic stem cell research,⁹⁵ and all work on human genetics.⁹⁶ Important developments are also occurring in artificial intelligence,⁹⁷ nano-technology,⁹⁸ and cryonics.⁹⁹ All of these raise legal and moral, if not constitutional, questions. In an age where technological and medical advances are developing at what sometimes appears to be an exponential rate, the law may shape or follow advances.¹⁰⁰ In large part this is because although we speak of a revolution, in reality there are a number of interrelated changes, each of which must be considered – to some degree at least – as separate. There have been warnings that decisions with respect to government involvement in high technology industries should be

94. The mapping of the human genome allows doctors to screen out embryos with a genetic predilection for Alzheimer's disease. Genetic engineering may permit scientists to alter the genes of embryos and negate predilections for certain illnesses. See Kathy Hudson, *The Human Genome Project, DNA Science and the Law: the American Legal System's Response to Breakthroughs in Genetic Science*, 51 AM. U. L. REV. 431 (2002); Cass R. Sunstein, *Keeping Up with the Clones* (2002), The New Republic Online at <http://www.tnr.com/doc.mhtml?i=20020506&s=sunstein050602&c=1> (last visited December 9, 2003); GREGORY STOCK, *REDESIGNING HUMANS, OUR INEVITABLE GENETIC FUTURE* (Houghton Mifflin 2002); LEE M. SILVER, *REMAKING EDEN: HOW GENETIC ENGINEERING AND CLONING WILL TRANSFORM THE AMERICAN FAMILY* 266 (Avon Books 1998).

95. See Denise Stevens, *Embryonic Stem Cell Research: Will President Bush's Limitation on Federal Funding put the US at a Disadvantage? A Comparison between US and International Law*, 25 HOUS. J. INT'L L. 623 (2003).

96. See, e.g., ROBERT H. BLANK, *THE POLITICAL IMPLICATIONS OF HUMAN GENETIC TECHNOLOGY* (Westview Press 1981); E. Donald Elliott, *The Genome and the law: Should increased genetic knowledge change the law?*, 25 HARV. J.L. & PUB. POL'Y 61 (2001).

97. See John McCarthy, *What is Artificial Intelligence?*, at <http://www-formal.stanford.edu/jmc/whatisai/whatisai.html> (last visited December 9, 2003).

98. See Glenn Harlan Reynolds, *Environmental Regulation of Nanotechnology: Some Preliminary Observations*, 31 ENV. L.R. 10681 (2001); Joel Rothstein Wolfson, *Social and Ethical Issues in Nanotechnology: Lessons from Biotechnology and other High Technologies*, 22 BIOTECHNOLOGY L. REP. 376 (2003).

99. See Michael Janofsky, *Even for the Last .400 Hitter, Cryonics is the Longest Shot* (2002), available at <http://www.nytimes.com/2002/07/10/science/10WILL.html?> (as of 9 December 2003).

100. See James E. Bowman, *Symposium Genetics and the Law: the Ethical, Legal and Social Implications of Genetic Technology and Biomedical Ethics: The Road to Eugenics*, 3 U. CHI. L. SCH. ROUNDTABLE 491, 495-96, 501 (1996); Herbert Hovenkamp, *Technology, politics, and regulated monopoly: an American historical perspective*, 62 TEX. L. REV. 1263-1312 (1984).

on a case-by-case basis and not of a general nature.¹⁰¹ It has not been possible to avoid this. For law, this means a piecemeal approach to reform, and for the constitution¹⁰² – where this is effected – potentially a lack of the coherency and consistency which should be the hallmark of a good constitution.¹⁰³

Fundamentally, this technological revolution raises questions about the role of state and society,¹⁰⁴ and the place of the individual, and the state, within this structure,¹⁰⁵ as well as the relationship between state and state.¹⁰⁶ Modern state institutions, and the principal western models of state structures themselves,¹⁰⁷ were established or consolidated during the fifteenth to early twentieth

101. See Genevieve Kirkwood and Michael Purdue, *High technology; role and status of central government policy*, J. OF PLAN. & ENVTL. L. 111-18 (1988).

102. The point must here be made that the term “constitutions” is not to be taken to refer to the formal written constitutional documents of a country, but rather to include all aspects of its governance, including the states underlying relationship with its people. It is not confined to the narrower modern definition of a constitution, such as exemplified by Lassalle (the written constitution of the modern state collects together and determines “in one instrument, on one piece of paper, all the country’s institutions and principles of government” (Ferdinand Lassalle, *Über Verfassungswesen*, in GESAMMELTE REDEN UND SCHRIFTEN vol. 2, 38, 46 (E. Bernstein ed., P. Cassirer, Berlin, 1919)), but rather than more ancient and open definition, namely of a characteristic power structure and a minimal amount of legal norms about the structure of power; Hermann Heller, *The Decline of the Nation State and its Effect on Constitutional and International Economic Law*, 18 CARDOZO L. REV. 1139, 1206 (1996).

103. It has been suggested by Scheuerman that we should see constitutions as expressive of a broadly-defined set of abstract moral principles; William E. Scheuerman, *Constitutionalism in an age of speed*, 19 CONST. COMMENT. 353, 366 (2002).

104. See Judith D. Ahrens and Gerardo A. Esquer, *Internet’s Potential as a Global Information Infrastructure: A Case Study and Assessment*, 1(4) J. GLOBAL INFO. MGMT. 18 (1993).

105. See Kevin G. DeNoce, *Internet Privacy Jurisdiction Begins to Develop; Courts and Legislators Address e-mail Confidentiality and other New Age Constitutional Issues*, 19 NAT’L. L. J. B11 (1997).

106. It should come as no surprise then that an emerging international law dimension of the Internet has been identified; Franz C. Mayer, *The Internet and Public International Law – Worlds Apart?*, 12 EUR. J. INT’L L. 617-22 (2001); Ruth Wedgwood, *The Internet and Public International Law: Cyber-Nations*, 88 KY. L.J. 957 (2000); KLAUS W. GREWLICH, *GOVERNANCE IN ‘CYBERSPACE’ – ACCESS AND PUBLIC INTEREST IN GLOBAL TELECOMMUNICATIONS* (Kluwer Law International 1999); *TRANSNATIONAL CYBERSPACE LAW* (Makoto Ibusuki ed., Hart 2000) (Grewlich and Ibusuki focus on economic transnational aspects); SYLVIA OSTRY AND RICHARD R. NELSON, *TECHNO-NATIONALISM AND TECHNO-GLOBALISM: CONFLICT AND COOPERATION* (Brookings Institution, c.1995).

107. At least those of the European model.

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century era of nation-state building.¹⁰⁸ That time also was a revolutionary one in its own way, which saw the decline of the Middle Ages and the growth of the modern era – and much of that political and legal change can be seen as grounded on technological change.¹⁰⁹ But the economic development of capitalism did not greatly change the relationship.¹¹⁰ It remains to be seen whether a post-industrial, globalized world will do so.

Technology is altering the relationship between the governed and the government, and between governments. Technology does not change the essential problems that legal systems seek to address, because these problems have deeper roots, being rooted in the enduring nature of humanity.¹¹¹ Technology can transform the human environment.¹¹² But, as Burke recognized, the key to sound structures of governance in every age and place is to understand the intersection of humanity's enduring nature with its particular circumstance.¹¹³

Economic and technological changes eventually alter legal systems, because they change society, which legal systems reflect to a greater or lesser degree.¹¹⁴ Economic growth affects labor patterns, disposable incomes, population distribution, even population – all of which affects social behaviour. Technological changes

108. Philip Cooke, *Globalisation of Economic Organisation and the Emergence of Regional Interstate Partnerships*, in *THE POLITICAL GEOGRAPHY OF THE NEW WORLD ORDER* 46-58, 47 (Colin H. Williams ed., Belhaven Press 1993).

109. See Steven McGready, *The Digital Reformation: Total Freedom, Risk, and Responsibility*, 10 *HARV. J.L. & TECH.* 137 (1996).

110. See MAX WEBER, *THE PROTESTANT ETHIC AND THE SPIRIT OF CAPITALISM* (Talcott Parsons trans., Routledge 1992).

111. See John O. McGinnis, *The Symbiosis of Constitutionalism and Technology*, 25 *HARV. J.L. & PUB POL'Y* 3 (2001).

112. Including the economic and social environment.

113. EDMUND BURKE, *SELECTED WRITINGS AND SPEECHES* (Peter J. Stanlis ed., Regnery Publications 1997) (cited by John O. McGinnis, *The Symbiosis of Constitutionalism and Technology*, 25 *HARV. J.L. & PUB. POL'Y* 3 (2001)).

114. See generally J. Woodford Howard Jr, *Constitution and society in comparative perspective*, 71 *JUDICATURE* 211-15 (1987).

may have equally significant effects, and indeed this has been predicted as a consequence of Internet development.¹¹⁵

One reason for this profound change, according to McGready, is that the new rights which aim to respond to opportunities and risks arising from new information and communication technologies, biotechnological or other technology-based industrial development, are not grounded in the nation-state.¹¹⁶ Generally, established civil, economic, social and political rights,¹¹⁷ were predicated upon the existence of the nation-state, and indeed were constructed within the framework of the nation-state.¹¹⁸ Globalization, and a concurrent individualization (or the enfranchisement of the individual) has led to additional rights, desires and pressures.¹¹⁹ It has also lead to international business facing an environment of greater complexity than was previously the case. One example will suffice. A business operates from country X, selling to customers via a website hosted in that country. They may be subject to the laws of country Y, in which the website may be accessed, even though country Y was not the target market.¹²⁰

Cortada examines the historical, cultural, and legal aspects of interaction between society and information.¹²¹ He maintains that the information age is not really a new phenomenon, but rather is the most recent manifestation of a long-standing process of his-

115. See CASS R. SUNSTEIN, *REPUBLIC.COM* (Princeton University Press 2001) (Sunstein has argued that, by increasing the possibility of community, the Internet has undermined the American republic. In his view, the printing press helped create modern nationalism, as books and newspapers came to be written in the vernacular, encouraging a conception of a shared community among groups of people who would never actually meet. His concern is that through the Internet we may choose to find only "echo chambers" of our own opinions, magnifying and confirming our inclinations and resulting in a deeply polarised society).

116. See Steven McGready, *The Digital Reformation: Total Freedom, Risk, and Responsibility*, 10 *HARV. J.L. & TECH.* 137 (1996).

117. See, e.g., the Universal Declaration of Human Rights, as passed and proclaimed by the General Assembly of the United Nations on the tenth day of December 1948 (Department of External Affairs, Wellington 1951).

118. See Maria Eduarda Goncalves, *Technological change, globalisation and the Europeanisation of rights*, 16 *INT'L REV. OF L., COMPUTERS AND TECH.* 301-16 (2002).

119. Such as raised economic and political expectations in poorer and less democratic countries.

120. See, e.g., *Yahoo! Inc. v. La Ligue contre Le Racisme et L'Antisemitisme*, 145 F. Supp. 2d 1168; Andreas Manolopoulos, *Raising 'Cyber-Borders': The Interaction Between Law and Technology*, 11 *INT'L. J.L. & INFO. TECH.* 40-58 (2003).

121. See JAMES W. CORTADA, *MAKING THE INFORMATION SOCIETY: EXPERIENCE, CONSEQUENCES AND POSSIBILITIES* (Prentice Hall, Paramus, 2001).

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torical evolution.¹²² Yet, Lessig suggests that the historical evolution of the information society is a foundational preamble for what he characterizes as one of the most critical battles of our time – the battle for the future of the Internet.¹²³ Both views may be correct, for while knowledge technology may be grounded in an earlier Industrial Revolution, evolution also has its periods of stagnation and periods of fundamental change. We may be entering a phase of stagnation and change now. This is critical for business, as well as for government.

Technological changes also offer significant challenges internationally. Abbott has argued international society of the twenty-first century will be highly integrated. He argues that the World Trade Organisation (WTO) governance structure should be adapted to account for more diverse interests, including those of marginalised developing countries, non-governmental organisations (NGOs) and individuals.¹²⁴ This view has also been advanced by McGinnis,¹²⁵ who envisages the prospect of international federalism through the WTO and other global economic organization.¹²⁶ Legislation is no longer overwhelmingly domestic in origin, even though it may still be enacted by domestic legislative bodies,¹²⁷ due to an increasing number of treaties and conventions. Fundamentally, the challenge – or threat – of techno-globalism to sover-

122. Id.

123. See LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* (Random House 2001).

124. Frederick M. Abbott, *Distributed governance at the WTO-WIPO: An evolving model for open-architecture integrated governance*, 3 J. INT'L ECON. L. 63 (2000).

125. John O. McGinnis, *The Symbiosis of Constitutionalism and Technology*, 25 HARV. J.L. & PUB. POL'Y 3, 9 (2001) and John O. McGinnis and Mark L. Movsesian, *The World Trade Constitution*, 114 HARV. L. REV. 511, 514-15 (2000).

126. McGinnis, 25 HARV. J.L. & PUB. POL'Y at 9-10.

127. Unless, of course, they have relinquished legislative authority, in part or whole, as have members of the European Union. See TREVOR C. HARTLEY, *CONSTITUTIONAL PROBLEMS OF THE EUROPEAN UNION* (Hart Publishing 1999).

eign states¹²⁸ has profound implications for jurisprudence,¹²⁹ and for business.

The development of information technology-driven e-government, through a relatively simple provision of information on the Internet, through the conducting of simple transactions such as paying taxes online, to more interactive and comprehensive relationships may ultimately affect the structure of government. This may increase governmental centralization, in that citizens might make contract with governmental agencies through a single portal.

The challenge for governments is to respond to the ongoing, and possibly long-term,¹³⁰ technological revolution¹³¹ and not become victims of it.¹³² The more inflexible the state, or the more economically or politically dogmatic, the greater the risk of failure.¹³³ Failure by governments to respond fully and effectively to changing paradigms can result in loss of competitive advantage¹³⁴ – or

128. See SYLVIA OSTRY AND RICHARD R. NELSON, *TECHNO-NATIONALISM AND TECHNO-GLOBALISM: CONFLICT AND COOPERATION* (Brookings Institution c.1995).

129. See JURISPRUDENCE FOR AN INTERCONNECTED GLOBE (Catherine Dauvergne ed., Ashgate c.2003); GLOBALISATION UNDER CONSTRUCTION: GOVERNMENTALITY, LAW, AND IDENTITY (Richard Warren Perry and Bill Maurer eds., University of Minnesota Press, c.2003); Jean Stefancic and Richard Delgado, *Outsider Jurisprudence and the Electronic Revolution: Will technology Help or Hinder the Cause of Law Reform?*, 52 OHIO ST. L.J. 847-58 (1991).

130. It is, of course, impossible to predict what further developments are likely to occur, which makes it necessary that the legal system – and the constitution – is sufficiently flexible so as to allow this development, and yet restrict or prohibit developments which are deemed unsuitable.

131. See Ilene K. Grossman, *The new Industrial Revolution: meeting the challenge*, 4 PUBLIC LAW FORUM 419-26 (1985); Thomas W. Rudin, *State involvement in the 'new Industrial Revolution,'* 4 PUBLIC LAW FORUM 411-17 (1985).

132. See MAURICE PEARTON, *THE KNOWLEDGE STATE: DIPLOMACY, WAR, AND TECHNOLOGY SINCE 1830* (Burnett Books 1982).

133. See Bruce Parrott, *Technology and the Soviet Polity: The Problem of Industrial Innovation, 1928 to 1973* (1976) (Ph.D. dissertation, Columbia University); Rensselaer W. Lee, *The politics of technology in Communist China* (1973) (Ph.D. dissertation, Stanford University).

134. See, e.g., GOVERNMENT RESPONSE: AUSTRALIA AS AN INFORMATION SOCIETY: GRASPING NEW PARADIGMS (House of Representatives Standing Committee for Long Term Strategies 1992); NICK MOORE ET AL., *INFORMATION-INTENSIVE BRITAIN: AN ANALYSIS OF THE POLICY ISSUES* (Policy Studies Institute 1991), where the emphasis of both is upon information technology. See also JAMES BOTKIN ET AL., *GLOBAL STAKES: THE FUTURE OF HIGH TECHNOLOGY IN AMERICA* (Ballinger Publishing Co. 1982); THOMAS L. FRIEDMAN, *THE LEXUS AND THE OLIVE TREE* 9 (HarperCollins 2000).

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even the existence of that state (through loss of economic viability). This ability to respond is not merely political, social or economic. It is also constitutional.

Not only does technology change (and sometimes even threaten¹³⁵) the legal system, the legal system itself also affects the development of technology. Some legal systems have traditionally been laissez-faire, inclined to leave technology and business alone, at least so long as they did not cause undue harm.¹³⁶ They also sought to protect the intellectual property of authors, inventors and originators of novel ideas.¹³⁷ McGinnis argues that the United States Constitution was at the heart of the steady growth in the U.S., helping it to become an economic superpower by the beginning of the twentieth century.¹³⁸ His explanation for this was that the balance between federal and state powers prevented excessive government intervention in business, while also providing a strong central government where this was essential – in foreign policy and defense.¹³⁹ In such an environment there is no disincentive to develop and market technological innovations. Yet, even here, public health concerns have a role to play – the pharmaceutical and nuclear power industries, for instance, are usually heavily regulated.¹⁴⁰

135. For example, the Internet potentially threatens the monopoly of the Communist regime in mainland China, which partly explains their efforts to regulate access to and use of the Internet. Jack Linchuan Qiu, *Virtual Censorship in China: Keeping the Gate between the Cyberspaces*, 4 INT'L J. COMM. L. & POL'Y 1 (1999-2000); Renee M. Fishman et al., *China issues rules on content enforcement*, 14 INTELL. PROP. & TECH. L.J. 24 (2002). China has regulated access to the Internet through centralised filtered servers, and by requiring filters for in-state Internet service providers and end-users; Timothy Wu, *Cyberspace Sovereignty? – The Internet and the International System*, 10 HARV. J.L. & TECH. 647, 652-54 (1997).

136. See, e.g., ARTHUR J. TAYLOR, *Laissez-Faire and State Intervention in Nineteenth-Century Britain* (Economic History Society/Macmillan 1972); SIR NORMAN CHESTER, *The English Administrative System, 1780-1870* (Clarendon Press 1981).

137. *THE PREHISTORY AND DEVELOPMENT OF INTELLECTUAL PROPERTY SYSTEMS* (Alison Firth ed., Sweet & Maxwell 1997).

138. See John O. McGinnis, *The Symbiosis of Constitutionalism and Technology*, 25 HARV. J.L. & PUB. POL'Y 3 (2001).

139. *Id.*

140. For instance, the pharmaceutical and nuclear power industry. See Ivette P. Gomez, *Beyond the Neighbourhood Drugstore: U.S. Regulation of Online Prescription Drug Sales by Foreign Businesses*, 28 RUTGERS COMPUTER & TECH. L.J. 431 (2002); Michael R. Fox, *Nuclear Regulation: The Untold Story; Poor Management? Yes, but Lay the Blame on too much Regulation*, 133 PUB. UTIL. FORT. 37 (1994).

The legal system affects technology because technology involves the creation, utilization and protection of intellectual property,¹⁴¹ the exploitation of capital,¹⁴² and the protection of consumers¹⁴³ and the environment¹⁴⁴ – all of which are generally controlled by laws. Where certain areas of law are weaker or ill-developed, there will be technological consequences.¹⁴⁵ More rigid legal systems, and industries which inherently involve higher risk, or potentially higher liability, are more strictly controlled.¹⁴⁶

141. ANDREW BROWN ET AL., *THE LAW OF INTELLECTUAL PROPERTY IN NEW ZEALAND: AN EXPOSITION OF THE NEW ZEALAND LAW RELATING TO TRADEMARKS, PASSING OFF, COPYRIGHT, REGISTERED DESIGNS, PATENTS, TRADE SECRETS AND THE FAIR TRADING ACT 1986* (Butterworths 1989); HILARY PEARSON ET AL., *COMMERCIAL EXPLOITATION OF INTELLECTUAL PROPERTY* (Blackstone 1990); ALLEN CONSULTING GROUP, *ECONOMIC PERSPECTIVES ON COPYRIGHT LAW: RESEARCH PAPER* (Centre for Copyright Studies 2003).

142. JOSEPH W. BARTLETT, *VENTURE CAPITAL: LAW, BUSINESS STRATEGIES, AND INVESTMENT PLANNING* (J. Wiley 1988).

143. *CONSUMER LAW IN THE INFORMATION SOCIETY* (Thomas Wilhelmsson et al. eds., Kluwer Law International 2001).

144. DAVID M. DRIESEN, *THE ECONOMIC DYNAMICS OF ENVIRONMENTAL LAW* (MIT Press 2003); *PLANNING AND ENVIRONMENTAL PROTECTION: A REVIEW OF LAW AND POLICY* (Chris Miller ed., Hart 2001).

145. For example, in the rampant industrialisation in Eastern Europe under Communism, and the resulting environmental catastrophe. *ENVIRONMENTAL PROBLEMS IN EASTERN EUROPE* (F.W. Carter et al. eds., Routledge 1993); *ENVIRONMENTAL LIABILITY AND PRIVATISATION IN CENTRAL AND EASTERN EUROPE* (Gretta Goldenman et al. eds., Graham & Trotman 1994).

146. Law, economics, and risk are the subject of an ongoing debate. *See, e.g.*, Christopher K. Braun, *Alternative Rhythms in Law and Economics: The Posner-Malloy Dialectic*, 15 *LEGAL STUD. F.* 153 (1991).