

Transition Towards a Knowledge-Based Society in Post-Communist Kazakhstan: Does Good Governance Matter?

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Abstract

This article analyses and reviews the progress made by Kazakhstan, a post-communist country in Central Asia, towards its journey to become a knowledge-based society. An attempt has been made to examine how and to what extent good governance plays a critical role in building a knowledge-based society. Available evidence suggests that Kazakhstan made considerable advancement, in the midst of profound transitional challenges, to move to transform itself into a knowledge society. The article argues that, while improving governmental quality, good governance will have a solid impact on transforming Kazakhstan to a knowledge-based society in order to achieve the 'Kazakhstan 2030' policy strategy.

Keywords

Corruption, good governance, Kazakhstan, knowledge-based society

Introduction

The emergence of the knowledge society, building on the pervasive influence of modern information and communication technologies (ICTs), is bringing about a fundamental reshaping of the global economy (Information Society Commission, 2002). In a post-industrial society, knowledge is regarded as a national property or resource and its cultivation and optimization provides a paramount hope for an economically secure future at the top of the global food chain (Forstorp, 2008: 227). Likewise, the *World Development Report 1998/1999* views knowledge as light, weightless and intangible, it can easily travel the world, enlightening the lives of people everywhere (World Bank, 1999: 1). Knowledge illuminates every economic transaction, revealing preferences, giving clarity to exchanges, informing markets. And it is the lack of knowledge that causes markets to collapse, or never to come into being (World Bank, 1999). This is because in an increasingly dynamic world, concepts and policies spring to life at an unprecedented speed (Evers, 2003). The epistemology of development reflects the diversity of a world that only a few years ago was seen

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as moving towards an integrated world society, but is now understood as differentiated and complex. Many factors have contributed to this, and two key issues have profound impact: (1) globalization as an expansion of a world market; and (2) the move towards a knowledge society (Evers, 2001). The viability and success of a society is largely dependent on the interplay of how its resources such as natural, geographical location, capability of people and intellectual capital can be leveraged (Wiig, 2002). A society's success rests on its breadth of knowledge, which positions knowledge as the most important factor of production, surpassing capital and labour. Drucker (1994) rightly observes that 'the central wealth-creating activities will be neither the allocation of capital to productive uses, nor labour ... Value is now created by "productivity" and "innovation", both applications of knowledge to work'.

Political climate plays an important role in the production, dissemination and application of knowledge across the world (Makinda, 2007). In developing and transitional countries, for example, non-beneficial political regime characteristics shape the poor growth and development of knowledge bases. The situation may not be improved without ensuring good governance. The capacity of a governance system to act and the integrity of its actions are increasingly recognized as foundations to any society's advancement and development (Jreisat, 2004). Studies (for example, Bennet and Bennet, 2008) have shown that good governance facilitates the production of sustainable knowledge, which contributes positively to building a knowledge-based society.

Kazakhstan, after the dissolution of the USSR in 1991, envisioned moving towards a knowledge-based society and economy as a fundamental goal of sustainable development. Arguably, the most significant and visible expression of the breakdown in the control of the Communist Party was the strong decline in industrial production during the country's initial transition phase, roughly between 1991 to 1997 (Andvig, 2003, 2006). Andvig (2003) notes that during the Soviet command-control regime, production was organized through the all-embracing bureaucracy, where the outcome of each office's effort hinged upon the effort of the others. The sudden collapse of the Soviet control regime affected the established bureaucratic norms and pattern of behaviour, which was considered one of the key reasons for spreading corruption among public-sector employees in Kazakhstan and other Central Asian countries (Andvig, 2003). As a result, the plummeting of industrial production, in conjunction with widespread corruption, prompted the governmental move for crafting a knowledge society to check these development constraints. The Government of Kazakhstan (GoK) adopted various policies and programmes reflecting this view.

The key objective of this article is to examine how far Kazakhstan has progressed towards achieving a knowledge-based society and to assess the role of good governance in building this society. In doing so, this article: (1) illustrates the idea of the knowledge-based society from multifaceted perspectives; (2) analyses the context in which Kazakhstan's transformation to a knowledge-based society has been considered; (3) investigates the progress made in achieving a knowledge-based society; (4) examines Kazakhstan's achievement in its journey towards a knowledge-based society on the basis of knowledge indicators (this section also compares Kazakhstan with Malaysia on the basis of knowledge indicators to see whether the former can learn any policy lessons from the latter in the realm of building a knowledge society); and finally (5) it explores the impact of good governance in building a knowledge-based society, particularly its role in corruption control, in order to achieve developmental goals and objectives in Kazakhstan.

The Idea of Knowledge-Based Society

The knowledge society thesis emerged in the 1960s (Rohrbach, 2007), and was credited to the economist Machlup (Dang and Umemoto, 2009) and the noted management scholar Drucker

(Šlaus, 2007). In the almost four decades since, there has been a growing interest in this new idea, mostly focused on exploring the logic and mechanism behind a society in which knowledge has become critically important (Dang and Umemoto, 2009). A knowledge society is characterized by the recognition of knowledge as the key component of efficiency and competitiveness. Such a society relies primarily on the use of ideas and information rather than on physical or financial resources, and on technological application rather than on the physical transformation of material inputs for economic growth (Majumder, 2009). Some of its salient assumptions include (Šlaus, 2007: 989–990):

- (1) A knowledge society identifies, produces, processes, transforms, disseminates and uses information and knowledge for human development.
- (2) Knowledge provides ways to humanize globalization. The fundamental feature of the knowledge society is the knowledge–development link.
- (3) Knowledge is the main source of permeating everyday life, culture and public policy.
- (4) A knowledge-based society is constantly changing and maintaining a long-term and global perspective.
- (5) Knowledge embraces the science, humanities and technology, research and development (R&D), innovations, education, languages, literatures and art.
- (6) Knowledge differs from all other resources not only in being inexhaustible, but increased by sharing.
- (7) Knowledge is becoming the main source of political power.

A number of scholars (for example, Evers, 2003; Kakabadse et al., 2001) and institutions (for example, World Bank, 1999) have developed and disseminated an exhaustive number of knowledge society indicators. Of them, the most commonly used are (Britz et al., 2006: 27):

- (1) Qualitative measurement of the use of, and access to, modern ICTs.
- (2) The number of scientists in a country.
- (3) The amount spent on R&D as a percentage of the gross domestic product (GDP).
- (4) The number of patents filed in a country.
- (5) The number of articles published in top-rated scholarly journals.

The reflection of these indicators in the context of Kazakhstan will be presented in the latter part of this article.

Kazakhstan: Context

The Republic of Kazakhstan (see Box 1), a member of the former USSR, declared its independence in December 1991. Kazakhstan adopted its first post-Soviet constitution in 1993. A popular referendum approved the introduction of a new constitution in August 1995. After the 1997 territorial reorganization that merged some provinces (*oblasts*), the government has been structured along the lines of the national government, with 16 territorial divisions (Perlman and Gleason, 2007). This is a highly centralized unitary state where the President as head of state coordinates the functioning of all state organs and local governments (executive (*akimat*) and representative (*maslikhat*)), which are part of the local public administration (Emrich-Bakenova, 2009).

Box 1. Kazakhstan at a glance

Head of state: President Nursultan Nazarbayev, first elected in December 1991 and re-elected in 1999, 2005 and 2011
 National legislature: Bicameral, 77-seat in lower house (Majilis), 39-seat in upper house (Senate)
 National language: Kazakh, but Russian is also widely spoken
 Currency: tenge; exchange rate 2010 average US\$1 \approx 150 tenge
 Adult literacy rate: 99.5 (2007)
 GDP: US\$132 billion (2008)
 Gini index (ratio of income concentration): 0.312 (2008)
 Life expectancy at birth: 66.38 years
 Unemployment rate: 7.8% (2007)
 Internet users (per 100 people): 25 (2010)
 Corruption Perceptions Index (CPI): 2.9 (2010)
 Rank of the failed state: 103 (2010)
 Human Development Index (HDI): 85 (2009)
 Civil Society Ratings: 5.75 (2006)
 Press Freedom Score: 80 (2011)

Note: Civil society ratings are based on a score of 1 to 7, with lower scores indicating the highest levels of democratic progress. A lower score on the press freedom rankings suggests greater media freedom. The CPI is interpreted as a ranking of countries with scores ranging from 0 (highly corrupt) to 10 (very clean).

Source: Shklovski and Struthers (2010), Transparency International (2010), UN (2009) and UNDP (2009). The Failed States Rankings for 2010 are from Fund for Peace (2010); Civil Society Ratings for 2006 and Press Freedom Scores for 2011 are from Freedom House (2011).

Recently, Kazakhstan has made considerable progress in almost all spheres of life. It has already achieved three of the global Millennium Development Goals (MDGs) adopted at the United Nations Millennium Summit in 2000, including the reduction of poverty by half, universal primary education and gender equality in education (UN, 2009: 5). It has now set more ambitious development goals and targets on these MDGs, known as MDG+. These include MDG+1: halving the proportion of people in rural areas with incomes below the subsistence minimum; MDG+2: ensuring universal secondary education; and MDG+3: ensuring the adoption and implementation of measures aimed at increasing the representation of women and men in legislative and executive bodies, ensuring legislative and executive measures to prevent and eliminate violence against women, and ensuring sustainable gender mainstreaming in national planning and budgeting (UN, 2009).

Over time, Kazakhstan's economy has experienced a bumpy ride, stages of decline, stagnation and high economic growth. The period from 1990 to 1997 was one of negative economic growth, or at best stagnation (in 1995–1997, economic growth was close to zero) due to transformations in economic arrangements. It was only from 1998 that Kazakhstan entered the phase of strong and sustained growth (Agarwal, 2007). Despite the global financial crisis and a subsequent domestic liquidity problem, GDP growth in Kazakhstan exceeded 3 per cent in 2008 (UN, 2009).

At the same time, according to the World Economic Forum's Global Competitiveness Index, Kazakhstan faces enormous challenges despite its commitment to the competitiveness agenda. For the year 2010/2011, Kazakhstan was ranked 72 out of 139 countries with a score of 4.12, (out of 7), and fell five places from its 2009–2010 position, where it was placed 67 out of 133 (World Economic Forum, 2010a). In this context, the Forum's report notes that notwithstanding a number of successes, further strengthening was recommended for its institutional environment, particularly in judicial

independence and government efficiency and public trust (UN, 2009). The report also indicates that innovation, business sophistication and technological readiness were on the decline, in part because of perceived skills shortages related to science and engineering, less company spending on R&D, and less university–industry research collaboration compared to other countries (UN, 2009: 6).

Over the period 1998–2004, the population living below the poverty line in Kazakhstan declined significantly from 39 per cent in 1998, to 20 per cent in 2004 (Agarwal, 2007; CIA, 2010). Although income per person is expected to rise, high-level inequalities remain visible. In 2007 and 2008, the overall national poverty headcount ratio was estimated at over 12 per cent of the population. However, the regional differences are striking. Looking at poverty rates by region, the weak performers in 2004 were Atyrau (29.1 per cent), Kyzylorda (26.5 per cent) and South Kazakhstan (23 per cent), while the new and old capitals, Astana and Almaty, had the least poverty (1.1 per cent and 2.8 per cent, respectively) (USAID, 2006). Among the poor-performers, Atyrau and Kyzylorda, two oil-rich regions, the economic activity in them is heavily dependent on oil-extraction, a highly capital-intensive industry that offers limited employment opportunity (USAID, 2006: 13). Thus, in the absence of adequate income-generating activities, a large number of local inhabitants live in extreme poverty.

Kazakhstan, a country in potential economic transition, is gradually responding to many transitional challenges such as moving from a centrally planned economy to a democratic market-driven economy, including the end of full employment, the elimination of most price subsidies and the transformation of state-owned enterprises into profit-making entities (Irnazarov, 2009; Orenstein, 2008). The background given above paints a landscape that suggests the need for Kazakhstan to move towards a knowledge-based society in order for it to achieve its articulated developmental goals and objectives. The published scholarship on knowledge-based society and the role of good governance in building Kazakhstan is far from adequate. As a result, this article attempts to make a contribution towards achieving strategic development policy goals and objectives by addressing the link between good governance and knowledge-based society in Kazakhstan.

Kazakhstan's Transition Towards a Knowledge-Based Society

The role of knowledge in promoting development and ensuring good governance practice has been increasingly recognized by academics, practitioners and development agencies (ADB, 2005; Gerke and Evers, 2006; Ferguson et al., 2010; Hornidge, 2007). Knowledge has taken on a greater degree of relevance and a different shape with the gradual advent and deepening of the knowledge economy (KE) and society. In a sense, though, every society has always been a knowledge society in that knowledge – both formally and informally – has always underpinned economic growth and sociopolitical development (Ferguson et al., 2010; UN, 2003). The ICT revolution at the end of the twentieth century, however, bolstered the ways in which knowledge can be created, harvested, assembled, combined, manipulated, enhanced and channelled (UN, 2003). In the advent of the knowledge age, intellect and creative and innovative ideas have become a primary source of social, political and economic advantage. These factors carry a promise of advancing human development and thereby increasing the quality of life (UN, 2003).

Building knowledge-based societies is a global imperative, and some aspects of a roadmap to knowledge society are identical in all countries. In 2003, the Asian Development Bank (ADB) identified knowledge as the most important resource in maintaining the region's competitiveness, given the rapid rate of change created by globalization and technological innovation (Evers et al., 2010). However, there are substantive differences between countries, particularly those in transition

(Šlaus, 2007). Most of the post-communist republics suffered from human capital shortages and institutional incapacities.

In Kazakhstan, progressing to a knowledge-based society has begun with the long-term development strategy 'Kazakhstan 2030: Prosperity, security and improved living standards for all Kazakh' (Kazakhstan 2030), which was adopted in 1997 in order to transform the country as one of the fiftieth most developed countries in the world. It identified seven priorities for the country's development: (1) national security; (2) domestic stability and social cohesion; (3) economic growth; (4) health, education and welfare for the citizens of Kazakhstan; (5) energy resources; (6) infrastructure, transport and communications; and (7) a professional state. Since 1998, all the plans and programmes adopted in the country are being developed in accordance with the Kazakhstan 2030 strategy, which aimed at improving the quality of life for the population by reducing social exclusion and raising the quality of social services, improving the environment and involving civil society in development (UNESCO, 2008: 6). To achieve these stated goals, Kazakhstan is gradually overhauling its education system to produce quality human capital to meet the twenty-first century's challenges, using ICTs for improved service delivery, and slowly progressing towards innovation in science and technology. These developments are well reflected in the 2009 Knowledge Assessment Methodology (KAM)¹ ranking by the Knowledge for Development Programme of the World Bank, where Kazakhstan is ranked 72 among 146 countries (World Bank, 2009a), and thus emerges as the leader of Central Asia in the field of knowledge-based economy (see Table 1).

Human Capital Issues

Education is considered one of the key ingredients for the formation of human capital, which builds a solid foundation of knowledge society. During the Soviet era, educational institutions were established to promote, expand and sustain communism and communist ideology, which thus gradually 'russified' and 'sovietized' the entire education system (Mostafa, 2009; Orenstein, 2008). The system was closed and isolated from the rest of the world. Students and faculties were neither familiar with other major educational systems nor had access to literature outside the Soviet Union (Mostafa, 2009). Immediately after independence, Kazakhstan identified problems in its education sector and focused its attention and efforts to overhaul it. As a result, Kazakhstan has achieved the MDG of providing basic education by 2002 as all school-age children, boys and girls alike, were able to complete a full course of primary schooling (Islam, 2008: 189; UNDP, 2002). Despite these successes, the real challenge stems from a number of problems particularly at the pre-school, primary and basic general and secondary levels. There are poor maintenance and repair of school facilities with a resulting deterioration in the educational establishments, a lack of logistic and educational

Table 1. Knowledge Economy Index (KEI),² Knowledge Index (KI)³ and four pillars of Knowledge Economy in Central Asia, 2009.

Country	Rank	KEI	KI	Economic incentives	Innovation	Education	ICT
Kazakhstan	72	5.05	5.17	4.70	3.68	7.07	4.76
Kyrgyzstan	84	4.29	4.23	4.49	2.93	6.35	3.40
Uzbekistan	104	3.25	3.95	1.13	3.35	6.15	2.35
Tajikistan	106	3.22	3.33	2.88	2.01	5.53	2.46

Note: Turkmenistan is not included in both the KEI and KI.

Source: World Bank (2009a).

equipment and support services, non-availability of a new generation of textbooks, insufficient number of trained and specialized teachers in such fields as physics, chemistry, the Kazakh language, foreign languages, mathematics and information and computation (Islam, 2008). Several government initiatives helped to improve the situation: new or repaired school buildings and facilities, curriculum development, more trained faculty and an increase in student enrolment.

In order to develop human capital, education is one of the priorities of the Kazakhstan 2030 strategy. Consequently, the importance of higher education and its modernization has been recognized by the government, which has added it to its policy agenda for reform. As a move to internationalize the Kazakh higher education system and to integrate it into the international community, the government has restructured higher education and its delivery process. The Soviet-style five-year diploma programme has been changed to a four-year bachelor degree; a two-year Master degree programme was introduced, scrapping the Candidate of Science (*aspirantura*) degree. Moreover, an international standard doctoral programme was introduced in 2004 in place of the old Doctor of Science degree, with only 11 top regional universities being authorized to offer this degree (Mostafa, 2009).

The GoK has revitalized its commitment for the improvement of higher education by its declaration of 'bringing the system of education and in-service training in conformity with the world standards' as one of the 30 most important strategies for the country. In congruence with the policy, in recent years the education budget has been increased (see Table 2). However, the level of overall spending on education in Kazakhstan is still well below that of the countries in the Organisation for Economic Co-operation and Development (OECD), which ranges from 3.71 to 15.3 per cent of GDP (OECD, 2009: 18).

Most of the higher educational institutions in Kazakhstan are connected to the Internet, although only a few of them have access to electronic contents of global knowledge: books, journals, reports and other e-resources. It is well known that most of the higher learning institutions in developing countries cannot afford to purchase conventional printed journals, research monographs and student texts from developed countries (Arunachalam, 2003; Britz et al., 2006), nor have they adequate financial resources to subscribe to electronic instructional and research contents. The knowledge workers, for example, researchers and university faculty, also receive low emoluments. In this context, referring to Africa, Makinda (2007: 979) notes that there are no incentives for hard-working university researchers and lecturers, and no funds to hire the best researchers. Kazakhstan's situation is similar to the African experience described earlier. However, the GoK has recently

Table 2. Structure of expenses of the state budget by levels of education (million tenge), 2000–2005

Years	Total	Levels of the education system										Other expenses	
		PE & T	SGE	PVE	SVE	HVE							
2000	81,416	2975	3.65%	60,007	73.70%	2693	3.31%	2662	3.27%	8120	9.97%	4959	6.09%
2001	103,076	3322	3.22%	67,224	65.22%	3018	2.93%	2528	2.45%	9344	9.07%	17,640	17.11%
2002	118,977	3880	3.26%	81,744	68.71%	3910	3.29%	2989	2.51%	11,783	9.90%	14,671	12.33%
2003	149,549	4553	3.04%	98,906	66.14%	5299	3.54%	3502	2.34%	12,763	8.53%	24,526	16.40%
2004	195,574	6542	3.35%	127,432	65.16%	6714	3.43%	5160	2.64%	15,423	7.89%	34,303	17.54%
2005	256,935	9589	3.7%	148,802	57.9%	8790	3.4%	5704	2.2%	21,468	8.4%	62,582	24.4%

Notes: PE & T pre-school education and training; SGE secondary general education; PVE primary vocational education; SVE secondary vocational education; HVE higher vocational education

Source: OECD (2009: 51).

introduced a scheme of generous grants to universities for faculty professional and skills development. As a result, the 200 best university teachers and researchers are awarded a yearly grant in the amount of US\$18,000 to pursue scientific research and train in top-ranked international universities (Mostafa, 2009). This initiative keeps some members of the scientific community engaged in production and the use and reuse of knowledge.

In 1993, the President of Kazakhstan created the international scholarship *Bolashak* (future) to send young and talented Kazakhs mostly to Western developed countries for higher education and training. The need for such an initiative stems from the country's expressed path of development based on the competitive economic model and sustainable growth of the priority fields with ever-increasing demand for specialists in such spheres as industrial development and innovation, education and science, management, marketing, logistics and information technology. From 1994 to 2009, a total of 5,950 students were granted this government funded and administered scholarship, and the recipients went to 30 different countries for advanced study (Centre for International Programmes, 2009).

ICTs and Connectivity

Johnson et al. (2005) indicate that a knowledge society is well connected via modern ICTs to the digital economy, and has access to relevant and usable information. A well-developed physical infrastructure allows the delivery of the material objects that are accessed and manipulated in the digital world of modern ICTs. It values human capital as the prime input to production and innovation (Johnson et al., 2005). In Kazakhstan, ICT plays a critical role by readying the country to achieve Kazakhstan 2030. In this context, Kazakhstan's accomplishments in fostering e-government include (World Bank, 2006):

- (1) Recognition of e-government as a priority at the highest political level and the elaboration of an e-government strategy.
- (2) Establishment of the Agency of Informatization and Communications (AIC) (now defunct) as an independent regulatory authority empowered to implement state ICT policy.
- (3) Creation of government agency websites (32 out of 42 government agencies have their own websites).
- (4) Development of a number of corporate networks and databases (e.g. integrated taxation, customs, pension information systems) by individual government agencies.
- (5) Enacting important legislations such as laws on e-documents and e-signatures.

Kazakhstan has made significant progress in introducing ICT in the public sector. In terms of e-government development, the United Nations Report on the *E-Government Survey 2010* recognizes Kazakhstan as the leader in Central Asia, and the region has made the most significant improvement from the 2008 survey. The 2010 global survey has ranked Kazakhstan 46 among 189 countries with an index value of 0.5578 as compared with 81 among 189 in 2008 (UN, 2010: 68–69). Table 3 shows e-government development in Central Asian countries.

In terms of networked readiness, the *Global Information Technology Report 2010* published by the World Economic Forum also recognized Kazakhstan as the leader in Central Asia (see Table 4). This report ranked Kazakhstan 67 among 133 countries (World Economic Forum, 2010b). The country improved by five positions from the previous year, where it was placed 73 among 134 economies worldwide (Mia et al., 2009). The Networked Readiness framework assesses the extent to which different economies benefit from the latest ICT advances, based on the following three key principles (Mia et al., 2009: 5).

Table 3. E-government development for Central Asia

Country	Index 2010	Index 2008	Ranking 2010	Ranking 2008
Kazakhstan	0.5578	0.4743	46	81
Kyrgyzstan	0.4417	0.4057	91	102
Uzbekistan	0.4498	0.4114	87	109
Turkmenistan	0.3226	0.3262	130	128
Tajikistan	0.3477	0.3150	122	132
Sub-region average	0.4239	0.3881		
World average	0.4406	0.4514		

Source: UN (2010: 68).

Table 4. The Networked Readiness Index (NRI) for Central Asia, 2009–2010 and 2008–2009

Country	NRI 2008–2009		NRI 2007–2008	
	Rank	Score	Rank	Score
Kazakhstan	68	3.68	73	3.79
Tajikistan	109	3.09	104	3.25
Kyrgyzstan	123	2.97	115	3.04

Note: Uzbekistan and Turkmenistan are not included in the report. The NRI rating is based on a scale of 1 to 7, with higher scores indicating the highest levels of network readiness.

Source: Mia et al. (2009: 10) and World Economic Forum (2010b: xix).

- (1) Environment as crucial enabler of networked readiness: an ICT-conducive environment is a key prerequisite for national stakeholders in a given country to leverage ICT for enhanced growth.
- (2) A multi-stakeholder effort: although the government has a natural leadership role to play when it comes to establishing an ICT- and innovation-friendly environment and to putting ICT penetration at the centre of the national agenda, a multi-stakeholder effort – involving the government, the business sector and civil society – is required to achieve ICT prowess.
- (3) ICT readiness facilitates ICT usage: a society whose stakeholders are better prepared and show a greater interest in ICT advances will be likely to use it more effectively and extensively.

Kazakhstan possesses a weak telecommunication facility. A 2003 International Telecommunication Union (ITU) data report indicated that effective teledensity in the country is considerably low, 14.86 (ITU, 2008). This penetration rate is not conducive to the growth of knowledge-based society. However, the number continues to grow at a high speed. For example, in 2003 there were 2,228,400 fixed telephone subscriptions, which rose to 3,409,600 in 2008, an 8.9 per cent growth in five years (ITU, 2008). In the same period (2003–2008), mobile phone subscriptions also grew significantly, from 1,330,700 to 14,910,600 (ITU, 2008).

Numerous scholars (for example, Britz et al., 2006; Norris, 2001; Ya'u, 2002) have raised a growing concern that the digital divide between the developed and developing countries is increasing and that it will become more difficult for the ICT-poor countries to catch up or even to keep pace with the technology advanced countries. Britz et al. (2006: 31) have identified two main

reasons for this. First, the development and application of modern ICTs are growing exponentially. The problem is that most of the ICT-poor countries, although connected, do not have the fiscal and technological capability constantly to upgrade their current ICT infrastructure. The second concern focuses on the economic application of modern ICTs. A key benefit of modern ICTs is that they allow the manipulation of a digital economy to gain a competitive advantage in the marketplace. This worries Kazakhstan as well. The country's poor telecommunication infrastructural readiness for e-government is reflected in the 2010 E-Government Survey where it scored 0.1797, out of a maximum score of 1, on the telecommunication infrastructure index and its components (UN, 2010: 119). As a result, GoK allocated US\$380 million (World Bank, 2006) to improve the infrastructure and thus facilitate the implementation of e-government. Given the vastness and unique geographical structure of Kazakhstan, it is doubted whether the allocated money would be adequate to build an ICT infrastructure across the country. However, the growing hydrocarbon economy, although now under stress, in conjunction with the strong political will of the government has created a favourable condition to move the e-government agenda forward for the overall development of the country.

Infrastructure and Deliverability

Britz et al. (2006: 34) and the World Bank (1999) emphasize that the new dematerialized and weightless economy is even more dependent on a well-developed and maintained ICT infrastructure, allowing the effective flow of products and services and accelerating economic growth. The GoK, with the support of the World Bank, is gradually improving the ICT infrastructure, for example by building the e-government portal, a 'payment gateway' providing a linkage with the banking system, the establishment of cross-agency information systems, the provision of mainly informational and transactional e-services and the promotion of Internet use among the citizens (Janenova, 2010) for the quality delivery of social and public services.

Language Issues

Language plays a powerful role to access global knowledge. Most Kazakhs demonstrate their ability in two languages – Russian and Kazakh – and only a few, predominantly urban youths, can speak and understand English. Due to a lack of knowledge of English, a large number of people cannot take advantage of using the growing body of global knowledge. This poor situation is reflected in a 2006 Organization of the Islamic Conference (OIC) report, where it was stated that in 2005 Kazakh (and international) scientists and researchers published only 261 scientific and technical articles on Kazakhstan in international academic journals (OIC, 2006: 9). It is worth pointing out here that in 2005, a total of 45,425 articles were published by 57 OIC member states, whereas in the same year Harvard University alone published 15,455 articles (OIC, 2006: 2). This number spells out the competitive advantage of developed countries in terms of the production of a larger amount of knowledge relative to developing and transitional countries.

Reflection of Knowledge Society Indicators in Kazakhstan

The preceding discussion indicates that Kazakhstan is slowly becoming a knowledge-based society. A transition is taking place, where 'knowledge' plays a central role. In order to understand Kazakhstan's achievement towards the knowledge-based society, this study compares Kazakhstan with Malaysia (see Table 5) on the basis of some selected knowledge indicators presented earlier.

Table 5. Knowledge society indicators for Kazakhstan and Malaysia

Indicators	Kazakhstan	Malaysia
Population (millions)	15.82 (2009)	27.71 (2009)
PCs (per 100 people)	32.2 (2007)	23.1 (2007)
Internet hosts	36,417 (2009)	377,716 (2009)
Researchers in R&D (per million people)	783 (2000–2006)	503 (2000–2006)
Scientific and technical journal articles	2,242 (1996–2005)	10,894 (1996–2005)
Expenditures for R&D (% of GDP)	0.28 (2000–2006)	0.60 (2000–2006)
High-technology exports (% of manufacturing exports)	23 (2007)	52 (2007)
Patent applications filed by residents	1,433 (2007)	531 (2007)
Patent applications filed by non-residents	124 (2007)	4,262 (2007)

Source: Agency of Statistics of Kazakhstan (2009), CIA (2009), OIC (2006: 6) and World Bank (2009b: 315).

Malaysia is comparable with Kazakhstan on many grounds. First, both are Asian countries with a Muslim majority. Second, Malaysia is considered one of the Asian tiger economies, while Kazakhstan has been recognized as the leader of Central Asia with an emerging economy. Both are categorized as upper middle-income economies by the World Bank. Third, both governments are committed to move towards a knowledge-based society by implementing two distinct policy strategies: ‘Wawasan (vision) 2020’ for Malaysia (see Evers, 2003) and ‘Kazakhstan 2030’ for Kazakhstan.

Table 5 clearly portrays Kazakhstan as trailing Malaysia on some knowledge indicators. Malaysia’s relative successes may well be explained by its high rate of investment of GDP for R&D, which was also credited in the 2009 KAM ranking by the World Bank, where Malaysia was ranked 48 among 146 countries, with 6.07 and 6.06 index values on KEI and KI, respectively (World Bank, 2009a). In this context, Kazakhstan holds a much lower position in ranking (see Table 1) than Malaysia. To improve the situation, the GoK needs a comprehensive policy plan outlining both short- and long-term investment in order to facilitate building an effective knowledge society. To achieve this, a substantial budgetary allocation is needed for R&D and other related activities.

Good Governance and its Impact on Building Knowledge-Based Society in Kazakhstan

Governance is a product of human agency – and hence an activity – that helps to define the relationships and interactions between state and society (Hyden and Court, 2002: 11). It is the exercising of political, economic and administrative authority to manage a society’s affairs (Dixon, 2003; Kooiman, 2003). In the context of public administration and public policy, governance can be defined as an ‘interdependence between organizations. Governance is broader than government, covering non-state actors. Changing the boundaries between public, private and voluntary sectors became shifting and opaque’ (Rhodes, 2007: 1246). Good governance refers to a high quality of processes by which decisions affecting public affairs are reached and implemented (UNESCAP, 2007). Good governance ensures that all are included and have the means (UNESCAP, 2007: 31):

- (1) To influence the direction of development, in particular as far as it affects people’s lives.
- (2) To make contributions to development and have these organized.
- (3) To share in the benefits of development and improve people’s lives and livelihoods.

These tasks are complex in nature and warrant innovative knowledge in their fulfilment. Evidence suggests that such knowledge is produced in those societies where democratic governance exists. It is therefore observed that those countries that have been ranked in the top positions in the 2009 KAM ranking are also the best scorers (see Table 6) of the 2009 World Bank Worldwide Governance Indicators dimensions: voice and accountability, political stability and the absence of violence/terrorism, government effectiveness, regulatory quality, rule of law and control of corruption (Kaufmann et al., 2009).

Saner et al. (2008: 216) indicate that despite international support efforts, transition economy countries are often unable to ensure sustainable growth in political, economic and social developments due to governance weaknesses. Werlin (2003: 330) observes that most of these countries suffer from what he calls ‘political illness’ (similar to mental illness such as alcoholism and drug addiction), which manifests itself in improper policies, weak bureaucracies, inadequate supervision and the lack of independent spheres of power. The issues of governance have become the key concerns of Central Asian countries and of international organizations that are helping them ever since the countries were deemed to have reached relative macroeconomic stabilization (Saner et al., 2008: 225). Kazakhstan carries many poor governance symptoms, and thus undercuts its chances for the full development of a knowledge society.

The 2008 UN Country Analysis on Kazakhstan reports that the country has achieved significant development in many areas of governance, through reforms in the executive branch, the establishment of a bicameral Parliament and its further strengthening, the improvement of national legislation and the adoption of international normative agreements in areas such as elections, culture and human rights, including those of women and children (UN, 2009: 35). A number of international indicators, including the Global CPI, the Global Integrity Index and the Worldwide Governance Indicators – all comparative indices that measure elements of governance – support the claim that while Kazakhstan has made strides in developing a strong legal framework for democratic development, in practice there remain serious challenges with implementation and transparency issues (UN, 2009).

In order to understand the impact of governance in building a knowledge-based society in Kazakhstan, this study focuses on the control of corruption, which is a dimension of governance indicators. This dimension is crucial to ensuring integrity and economic growth, both being foundations for crafting the knowledge-based society.

Table 6. KAM ranking and governance indicators in some selected countries, 2009

Country	KAM ranking	Governance indicators aggregate score					
		I	II	III	IV	V	VI
Denmark	1	0.92	0.89	0.88	0.86	0.92	0.93
Sweden	2	0.90	0.90	0.84	0.83	0.91	0.89
Finland	3	0.91	0.93	0.86	0.84	0.92	0.90
Netherlands	4	0.89	0.87	0.80	0.83	0.90	0.86
Norway	5	0.88	0.90	0.79	0.79	0.91	0.84

Note: I Voice and accountability; II Political stability and absence of violence/terrorism; III Government effectiveness; IV Regulatory quality; V Rule of law; and VI Control of corruption. Individual indicator ratings have been scaled from 0 (low) to 1 (high).

Source: Kaufmann et al. (2009: 80–97), World Bank (2009a), and World Bank (2009c).

Control of Corruption

Corruption has been one of the most serious challenges faced by developing countries (Bhargava and Bolongaita, 2004; Rose-Ackerman, 1999). Low administrative efficiency, poor governance structure, political instability and underdevelopment of the economy: all have corruption as one of their causes (Ko and Samajdar, 2010). In the same vein, available evidence suggests that corruption is a widely acknowledged fact of daily life in all of the Central Asian countries (Gleason, 1995; Knack, 2006). In Kazakhstan, petty corruption in various forms of bribe taking is common place (Gleason, 1997; Knox, 2008). High-profile corruption is also rampant (Knox, 2008), and has cultural, social and political roots anchored in the clan- and tribe-based rule and the Soviet organizational legacy (Perlman and Gleason, 2005; Schatz, 2005). A 2008 survey conducted by the Transparency International Kazakhstan among citizens and representatives of small- to medium-sized businesses evaluated several important state bodies. Based on their assessment results, the names of five of the most corrupt public agencies are reported in Table 7.

It appears from Table 7 that both groups – citizens and representatives of small- and medium-sized businesses – have identified the Ministry of Education and Science as one of the most corrupt public offices. This is the lead agency for all-level educational institutions engaged in human capital development in the country. As a result, critics support the view that the quality of education is compromised through corrupt practices, which is believed to be one of the key factors responsible for pulling down Kazakhstan's HDI from 73 to 85 in the 2009 ranking. Against this backdrop, the Transparency International's Global CPI 2010 has ranked Kazakhstan 105 among 178 countries with an index value of 2.9 (Transparency International, 2010). This is a significant improvement on the previous year's performance, where it was ranked 120 among 180 countries with a score of 2.7 (Transparency International, 2009). The present situation reveals that the level of public-sector corruption is in a downward trend, but still far below European Union (EU)/OECD countries. In this context, it is suggested that Kazakhstan needs a strict implementation of anti-corruption measures in order to improve the situation further as it took over the chairmanship of the Organization for Security and Co-operation in Europe (OSCE) in January 2010.

Table 7. Rating of corruption in state bodies in Kazakhstan, 2008

Name of state bodies	Citizens		Name of state bodies	Representatives of small- to medium-size businesses	
	Average point	Rank		Average point	Rank
Ministry of Internal Affairs	4.29	1	Ministry of Health	3.04	1
General Office of Public Prosecutor	4.59	2	Agency of Administration of Land Resources	3.31	2
Agency of Administration of Land Resources	4.63	3	Ministry of Internal Affairs	3.84	3
Ministry of Education and Science	4.75	4	Ministry of Finance	3.84	4
Supreme Court	4.77	5	Ministry of Education and Science	3.96	5

Note: The point value ranges from 0 (highly corrupt) to 10 (very clean).

Source: Transparency International Kazakhstan (2008).

A plethora of legal and institutional measures have been adopted to combat this endemic problem. In April 2005, for example, the President of Kazakhstan signed a decree 'On Measures to Set Up the Fight Against Corruption' in order to strengthen discipline in the activities of the state bodies and officials. The 2007 Global Integrity Index describes Kazakhstan's legal framework for fighting corruption as 'among the best in the world, exceeding those found in the West', but notes that these laws are never enforced. The 'implementation gap' between existing legislation and its practical implementation in Kazakhstan was one of the largest among the 53 countries rated in 2007 by the *Global Integrity Report* (UN, 2009), indicating severe problems with governance and anti-corruption. Corruption weakens good governance and is a root cause of many social ills. The effectiveness of anti-corruption measures primarily depends on the political will of the government in combating it, the level of governance and the nature of the extent of its policy (Siddiquee, 2010). By employing the necessary tools, Singapore and Hong Kong have been successful in controlling corruption (Quah, 2009: 14–16). The 2010 Transparency International report recognized them as two very clean economies in the world with a CPI score of 9.3 and 8.4, respectively (Transparency International, 2010). Given the current political inertia (see Knox, 2008), it is unclear whether or not GoK intends to follow the path of Singapore and Hong Kong to fight effectively against corruption. Kazakhstan's apparent failure to adhere to successful international practices will discredit the government agenda of the elimination of corruption from Kazakh society.

Conclusion

The policies and programmes adopted by the GoK clearly demonstrate its strong political will and support in the move towards becoming a knowledge-based society. To reap the benefits of knowledge society, the government, along with development partners, allocated adequate financial resources in order to build a strong ICT infrastructure. The progress that Kazakhstan has made so far in ICT development clearly stands out as a leader of Central Asia, and thus positions itself as a partner in the competitive information-based global knowledge economy.

Kazakhstan, however, faces challenges in its journey towards a knowledge-based society. The most striking one is to produce quality human capital to face the twenty-first century's challenges in the era of globalization. As a consequence, the government has invested, albeit inadequately, in primary, secondary and higher education as well as in R&D. Notwithstanding these developments, the introduction of the *Bolashak* programme have a positive impact on human development and capacity building. Admittedly, investment in people and in education will facilitate the production of 'new' knowledge, which will essentially improve the country's economic development. Investment in ICT infrastructural development improves the quality delivery of goods and services, and is also considered a precondition for the construction of the knowledge society. In this context, GoK has successfully implemented several projects relating to the development of its ICT infrastructure.

Kazakhstan suffers from widespread corruption. Rules and regulations to fight corruption are in place but are seldom applied, which is a syndrome of bad governance. For the situation to be improved, it is suggested that a good governance framework is created, one suitable for Kazakh society, in order to strengthen the state's capacity to combat corruption. International and domestic experience shows the role of good governance in corruption control as a universal positive. Good governance is a key imperative for Kazakhstan. This article therefore concludes that good governance improves the quality of governance by combating corruption and is a critical determinant in transforming Kazakhstan into a knowledge-based society in order to achieve Kazakhstan 2030.

Notes

1. The KAM is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in making the transition to a knowledge-based economy.
2. The KEI takes into account whether or not the environment is conducive for knowledge to be used effectively for economic development. The KEI is calculated based on the average of the scores of a country or region on all four pillars related to the knowledge economy (KE) – economic incentives and institutional regimes, education, innovation and ICT (World Bank, 2009a).
3. The KI measures a country's ability to generate, adopt and diffuse knowledge. The KI is the simple average of the normalized scores of a country or region on the key variables in three knowledge pillars: education, innovation and ICT (World Bank, 2009a).

References

- Agarwal P (2007) Economic growth and poverty reduction: Evidence from Kazakhstan. *Asian Development Review* 24(2): 90–115.
- Agency of Statistics of Kazakhstan (2009) *National Population Census 2009*. Available at: <http://www.eng.stat.kz/Pages/default.aspx> (accessed 7 November 2009).
- Andvig JC (2003) *A Polanyi Perspectives on Post-Communist Corruption*. NUPI Working Paper 648. Oslo: Norwegian Institute of International Affairs (NUPI).
- Andvig JC (2006) Corruption and first change. *World Development* 34(2): 328–340.
- Arunachalam S (2003) Information for research in developing countries: Information technology, a friend or foe? *International Information and Library Review* 35(2/4): 133–147.
- Asian Development Bank (ADB) (2005) *Technical Assistance: Establishment of Regional Knowledge Hubs*. Manila: Asian Development Bank.
- Bennet A and Bennet D (2008) The fallacy of knowledge reuse: Building sustainable knowledge. *Journal of Knowledge Management* 12(5): 21–33.
- Bhargava V and Bolongaita E (2004) *Challenging Corruption in Asia*. Washington, DC: World Bank.
- Britz JJ, Lor PJ, Coetzee IEM and Bester BC (2006) Africa as a knowledge society: A reality check. *International Information and Library Review* 38(1): 25–40.
- Central Intelligence Agency (CIA) (2009) *The World Factbook* (Malaysia). Available at: <https://www.cia.gov/library/publication/the-world-factbook/geos/my.html> (accessed 19 November 2009).
- Central Intelligence Agency (CIA) (2010) *The World Factbook* (Kazakhstan). Available at: http://www.theodora.com/wfbcurrent/kazakhstan/kazakhstan_economy.html (accessed 4 November 2010).
- Centre for International Programmes (2009) *International Scholarship of the President of Kazakhstan* (Bolashak Programme). Available at: <http://www.edu-cip.kz> (accessed 14 December 2010).
- Dang D and Umemoto K (2009) Modeling the development toward the knowledge economy: A national capability approach. *Journal of Knowledge Management* 13(5): 359–372.
- Dixon J (2003) *Response to Governance: The Governing of Corporations, Societies and the World*. Westport, CT: Praeger.
- Drucker P (1994) *Postcapitalist Society*. New York: Harper Business.
- Emrich-Bakenova S (2009) Trajectory of civil service development in Kazakhstan: Nexus of politics and administration. *Governance: An International Journal of Policy, Administration, and Institutions* 22(4): 717–745.
- Evers H-D (2001) Towards a Malaysian knowledge society. Paper presented at the Third International Malaysian Studies Conference, Bangi, 6–8 August.
- Evers H-D (2003) Transition towards a knowledge society: Malaysia and Indonesia in comparative perspective. *Comparative Sociology* 2(2): 355–373.
- Evers H-D, Gerke S and Menkhoff T (2010) Knowledge clusters and knowledge hubs: Designing epistemic landscapes for development. *Journal of Knowledge Management* 14(5): 678–689.
- Ferguson J, Huysman M and Soekjad M (2010) Knowledge management in practice: Pitfalls and potentials for development. *World Development* 38(12): 1797–1810.

- Forstorp P-A (2008) Who's colonizing who? The knowledge society thesis and the global challenges in higher education. *Studies in Philosophy and Education* 27(4): 227–236.
- Freedom House (2011) *Global Press Freedom Rankings 2011*. Available at: <http://freedomhouse.org/images/file/fop/2011/FOTP2011GlobalRegionalTables.pdf> (accessed 23 May 2011).
- Fund for Peace (2010) *Failed States Index 2010*. Available at: <http://www.fundforpeace.org/global/?q=fsi-grid2010> (accessed 22 May 2011).
- Gerke S and Evers H-D (2006) Globalizing local knowledge: Social science research on Southeast Asia, 1970–2000. *SOJOURN: Journal of Social Issues in Southeast Asia* 21(1): 1–21.
- Gleason G (1995) Corruption, decolonization and development in Central Asia. *European Journal on Criminal Policy and Research* 3(2): 38–47.
- Gleason G (1997) Prospects for Kazakhstan's Asian liberalism. *Demokratizatsiya: The Journal of Post-Soviet Democratization* 5(3): 376–385.
- Hornidge A-K (2007) *Knowledge Society: Vision and Social Construction of Reality in Germany and Singapore*. Berlin and London: LIT Verlag.
- Hyden G and Court J (2002) *Governance and Development*. World Governance Survey Discussion Paper 1. Tokyo: United Nations University.
- Information Society Commission (2002) *Building the Knowledge Society*. Dublin: Department of the Taoiseach. Available at: http://www.bos.rs/cepir/evolocija/html/13/knowledge_society-report.pdf (accessed 19 November 2009).
- Information and Telecommunication Union (ITU) (2008) *ICT Statistics: Kazakhstan*. Available at: <http://www.itu.int/ITU-D/ICTEYE/Indicators/Indicators.aspx> (accessed 17 November 2009).
- Irnazarov FK (2009) Transition Strategies in Kazakhstan and Uzbekistan Since Independence: Paradoxes and Prospects. Working Paper. Göttingen: Private University of Applied Sciences. Available at: <http://www.pfh.de/centralasia> (accessed 17 November 2009).
- Islam ARMS (2008) Education in Kazakhstan. In: Danju D (ed.) *Kazakhstan and the Millennium Development Goals*. Leeds: Wisdom House Publications, 189–219.
- Janenova S (2010) E-government in Kazakhstan: Challenges for a transitional country. Paper presented at the 18th NISPAcee Annual Conference, Public Administration in Times of Crisis, Warsaw, 12–14 May.
- Johnson CA, Ariunaa L and Britz JJ (2005) Constructing the pillars of a knowledge society: The challenge of providing access to ICTs in rural Mongolia. *Libri* 55(4): 216–224.
- Jreisat J (2004) Governance in a globalizing world. *International Journal of Public Administration* 27(13/14): 284–295.
- Kakabadse NK, Kouzmin A and Kakabadse A (2001) From tacit knowledge to knowledge management: Leveraging invisible assets. *Knowledge and Process Management*. 8(3): 137–154.
- Kaufmann D, Kraay A and Mastruzzi M (2009) *Governance Indicators VIII: Aggregate and Individual Governance Indicators, 1996–2008*. World Bank Policy Research Working Paper No. 4978. Washington, DC: World Bank.
- Knack S (2006) *Measuring Corruption in Eastern Europe and Central Asia: A Critique of the Cross-Country Indicators*. World Bank Policy Research Working Paper No. 3968. Washington, DC: World Bank.
- Knox C (2008) Kazakhstan: Modernizing government in the context of political inertia. *International Review of Administrative Sciences* 74(3): 477–496.
- Ko K and Samajdar A (2010) Evaluation of international corruption indexes: Should we believe them or not? *Social Science Journal* 47(3): 508–540.
- Kooiman J (2003) *Governing as Governance*. London: Sage.
- Majumder R (2009) Emergence of a 'knowledge society': The Indian scenario. *Journal of South Asian Studies* 32(2): 269–284.
- Makinda SM (2007) How African can benefit from knowledge? *Futures* 39(8): 973–985.
- Mia I, Dutta S and Geiger T (2009) Gauging the networked readiness of nations: Findings from the Networked Readiness Index 2008–2009. In: Dutta S and Mia I (eds) *The Global Information Technology Report 2008–2009*. Geneva: World Economic Forum and INSEAD, 3–26.

- Mostafa G (2009) Higher education in post-Soviet Central Asia: Search for new identities. Paper presented to the International Conference of the Asian Philosophical Association, Jakarta, 4–6 November.
- Norris P (2001) *Digital Divide? Civic Engagement, Information Poverty, and the Internet Worldwide*. Cambridge, MA: Cambridge University Press.
- Orenstein MA (2008) Postcommunist welfare states. *Journal of Democracy*. 19(4): 80–94.
- Organisation for Economic Co-operation and Development (OECD) (2009) *Reviews of National Policies for Education: Kazakhstan, Kyrgyz Republic and Tajikistan*. Paris: OECD.
- Organization of the Islamic Conference (OIC) (2006) *Science and Technology in the OIC Member Countries*. Ankara: Statistical, Economic and Social Research and Training Centre for Islamic Countries.
- Perlman BJ and Gleason G (2005) Comparative perspectives on third generation reform: Realignment and misalignment in Central Asian reform programs. *International Public Management Review*. 6(1): 100–115.
- Perlman BJ and Gleason G (2007) Cultural determinism versus administrative logic: Asian values and administrative reform in Kazakhstan and Uzbekistan. *International Journal of Public Administration*. 30(12/14): 1327–1342.
- Quah JST (2009) Combating corruption in the Asia-Pacific countries: What do we know and what needs to be done? *International Public Management Review* 10(1): 5–32. Available at: <http://www.idt.unisg.ch/org/idt/ipmr.nsf> (accessed 27 November 2009).
- Rhodes RAW (2007) Understanding governance: Ten years on. *Organization Studies* 28(8): 1243–1264.
- Rohrbach D (2007) The development of knowledge societies in 19 OECD countries between 1970 and 2002. *Social Science Information* 46(4): 655–689.
- Rose-Ackerman S (1999) *Corruption and Government: Causes, Consequences, and Reform*. New York: Cambridge University Press.
- Saner R, Toseva G, Atamanov A and Sahov A (2008) Government governance (GG) and inter-ministerial policy coordination (IMPC) in Eastern and Central Europe and Central Asia. *Public Organization Review: A Global Journal* 8(3): 215–231.
- Schatz E (2005) Reconceptualizing clans: Kinship networks and statehood in Kazakhstan. *Nationalities Papers* 33(2): 231–254.
- Shklovski I and Struthers DM (2010) Of states and borders on the Internet: The role of domain name extensions in expressions of nationalism online in Kazakhstan. *Policy and Internet* 2(4). Available at: <http://www.psocommons.org/policyandinternet/vol2/iss4/art5> (accessed 29 December 2010).
- Siddiquee NA (2010) Combating corruption and managing integrity in Malaysia: A critical overview of recent strategies and initiatives. *Public Organization Review: A Global Journal* 10(2): 153–171.
- Šlaus I (2007) Building a knowledge-based society: The case of South East Europe. *Futures* 39(8): 986–996.
- Transparency International (2009) *Global Corruption Report 2009*. Available at: http://www.transparency.org/publications/gcr/gcr_2009 (accessed 27 November 2009).
- Transparency International (2010) *Global Corruption Report 2010*. Available at: http://www.transparency.org/policy_research/survey_indices/cpi/2010 (accessed 26 October 2010).
- Transparency International Kazakhstan (2008) *Report on the Perception of Corruption and Suggestions on Decrease of Corruption in State Bodies* (in Russian). Available at: <http://www.transparencykazakhstan.org/archive/2009/9/28> (accessed 23 October 2009).
- United Nations (UN) (2003) *Expanding Public Space for the Development of the Knowledge Society: A Report of the Ad-Hoc Expert Group Meeting on Knowledge Systems for Development*. Available at: <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan014138.pdf> (accessed 26 October 2010).
- United Nations (UN) (2009) *Kazakhstan: Country Analysis 2008*. New York: United Nations.
- United Nations (UN) (2010) *United Nations E-Government Survey 2010: Leveraging E-Government at a Time of Financial and Economic Crisis*. New York: United Nations.
- United Nations Development Programme (UNDP) (2002) *Millennium Development Goals in Kazakhstan*. Almaty: UNDP.
- United Nations Development Programme (UNDP) (2009) *Human Development Report 2009*. Available at: hdr.undp.org/en/reports/global/hdr2009 (accessed 22 November 2009).

- United Nations Economic and Social Council (UNESCO) (2008) *National Report on the Achievement of Kazakhstan's Strategic Priorities to 2030 in the Light of the Millennium Development Goals*. Available at: apps01.un.org/nvpcms (accessed 13 November 2008).
- United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) (2007) *Access to Basic Service to the Poor: The Importance of Good Governance*. Bangkok: UNESCAP.
- United States Agency for International Development (USAID) (2006) *Kazakhstan Regional Disparities: Economic Performance by Oblast*. Available at: http://www.pdf.usaid.gov/pdf_docs/PNADG258.pdf (accessed 15 November 2010).
- Werlin HH (2003) Poor nations, rich nations: A theory of governance. *Public Administration Review* 63(3): 329–342.
- Wiig KM (2002) Knowledge management in public administration. *Journal of Knowledge Management* 6(3): 224–239.
- World Bank (1999) *Knowledge for Development: World Development Report 1998/1999*. New York: Oxford University Press.
- World Bank (2006) *Kazakhstan E-Government Programme and the Road Ahead*. Washington, DC: World Bank (a joint economic research programme with the Government of Kazakhstan).
- World Bank (2009a) *Knowledge for Development (K4D)*. Available at: http://info.worldbank.org/etools/kam2/KAM_Page5.asp (accessed 22 October 2009).
- World Bank (2009b) *World Development Indicators 2009*. Washington, DC: World Bank.
- World Bank (2009c) *Worldwide Governance Indicators*. Available at: <http://info.worldbank.org/governance/wgi> (accessed 17 April 2010).
- World Economic Forum (2010a) *The Global Competitiveness Report 2010–2011*. Available at: <http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Report/index.htm> (accessed 4 November 2010).
- World Economic Forum (2010b) *The World Information Technology Report 2010–2011*. Available at: http://www3.weforum.org/docs/WEF_GITR_Report_2011.pdf (accessed 4 November 2010).
- Ya'u YZ (2002) *Confronting the Digital Divide: An Interrogation of the African Initiatives at Bridging the Gap*. Available at: <http://www.codesria.org/Links/conferences/Nepad/yaу.pdf> (accessed 26 October 2009).

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