Rethinking connectivity as interactivity: a case study of Pakistan

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RETHINKING CONNECTIVITY AS INTERACTIVITY: A CASE STUDY OF PAKISTAN

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A Background Paper for Planning Commission's New Growth Strategy
Preliminary Version. Comments are Welcome

Introduction – What Do We Need?

For Pakistan to become a middle-income country, GDP must grow at a sustainable rate of eight per cent, for more than 20 years–a challenge that can be overcome with proper planning and addressing of priority issues. If economic growth is not leveraged on a higher trajectory, the coming demographic changes will imply rising unemployment, frustrated youth, shortage of assets and difficulties in competing with neighbouring South Asian countries.

Over the past several decades, Pakistan has faced defence- and security-related problems along with a series of natural disasters, political, social and economic crises that have impacted virtually all facets of public and private life. Government and civil society institutions, NGOs, businesses and citizens are constantly in problem-solving and fire-fighting mode. Moving from one crisis to another has deprived the body politic from addressing intellectual and structural challenges. There is no strategic thinking on how to solve long-term problems in a sustainable manner, and the implementation mechanisms of innovative and high impact solutions. The national conversation in Pakistan simply continues to discuss, dissect and debate short-term issues moving from one crisis to the next.

Like any problem-solving exercise, unpacking the riddle of slow and unpredictable growth requires bold, innovative and holistic thinking about what constitutes growth, how it is sustained and deepened, and what factors tend to limit growth in Pakistan. In a way, traditional neo-classical approach to growth, where society thinks in terms of investing in public projects instead of growth strategies, is still somewhat relevant. Much of it has been tried and tested and to some extent it has succeeded; but to a large extent it has failed in Pakistan.

Today, Pakistan confronts a new round of challenges and urgent demands. It is precisely at this moment—in the aftermath of a devastating flood and with security concerns—that the need to change the discourse about the country's development has become most apparent. Reactive tactics and dependence on external aid are not helping Pakistan to develop or realise its potential.

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Box 1 – Pakistan's New Growth Strategy

The New Growth Strategy (NGS) proposed by Pakistan's Planning Commission, is bold, innovative and holistic. It is about Pakistan's future. It recognises the need for greater private investment and measures that improve the profitability of investment. It seeks to improve the investment climate, to reduce the cost of doing business, and to eliminate obstacles to enhance efficiency and accumulation of knowledge.

Specifically, NGS aims to enhance productivity to propel economic growth and promote prosperity. It emphasises: (a) better governance (where the government sets policies and is the umpire, not a player); (b) better management of resources and accumulation of capital; (c) better connectivity; (d) making cities focal points for creativity, not flashpoints for conflict; (e) involving youth and communities; (f) fostering vibrant markets; and, (g) promoting entrepreneurship and innovation that lead to more and better employment opportunities, especially for the youth and the marginalised.

NGS is an invitation to all concerned to have a rigorous debate about where our effort needs to be placed. Regardless of the eventual outcome of the process, there is no doubt a strong consensus that a critical aspect of economic growth is to provide an enabling environment—particularly, connectivity—for economic, political and social activities.

Source: Zaidi, M. (2011). Disconnected? Physical Capital, Social Capital, And Connectivity For Economic Growth In Pakistan, Center for the Process of Change

Among the many factors that constitute an enabling environment, one of the least addressed and most important, is the degree of connectivity that the environment offers to its economic and social actors. No matter where and how growth is sought, a vital and most elusive question within the search for high and sustained economic growth focuses on the ease with which individuals, firms, organisations, communities and institutions connect with each other within and outside Pakistan. Put more simply, it helps analyse the level and quality of connectivity within Pakistan and globally.

In order to answer this question, within the context of economic growth, there is a need to understand connectivity (and physical, human and social capitals) and its impact on sustained and sustainable economic growth. The simplest way to conceptualise the value of connectivity to economic growth is through the framework of transaction costs. The easier it is for people to interact with each other, the more likely it is that they will interact. This simplified model does not capture the vastness of the challenges to a modern economy. Nor does it capture the full value that a well-connected economy can offer its citizens, in economic and non-economic terms.

Efficient networks reduce the cost of achieving goals including the production and delivery of goods and services through greater collaboration between individuals and groups. Reduction in transaction costs, timely delivery of raw materials, real-time electronic and virtual interactions between existing infrastructure and those who maintain it, and less wastage of or damage to goods during transportation are the benefits provided by a well-connected network. Efficient networks also enhance economies of scale in the production of not only goods and services but also in the promotion of goals and objectives.

Connectivity needs to be seen within a broader context, which moves beyond the conventional roads, railroad networks, trucking, airlines, computer networks, cell phones, fibre optic cables etc. to how networks enhance interactivity, with efficient use of physical, human and social capitals – and how these resources are interwoven to produce desired outputs.

Most people easily grasp the notion of physical capital (infrastructure) as comprising roads, bridges, air and sea ports, internet, phone and wireless networks. Cars, trains, airplanes and ships that use the physical infrastructure are also part of physical capital. However, getting from one location to another is also possible through video conferencing, email, Twitter, VoIP (Voice over Internet Protocol), mobile telephony and fixed line telecommunications. This entire infrastructure is considered a part of the stock of physical capital.

Physical capital cannot exist in the absence of cognitive and technical capacity to establish it in the first place, and to use it in the most efficient way thereafter. Using physical capital requires some basic skills, for example truck drivers need to know how to use the stick shift on their Bedford or Mack trucks. Similarly, software developers need to iron out video conferencing problems to service their remote clients. Scientists constantly try to find cheaper alternative fuels to make the airline industry more efficient and profitable. In a similar vein, cell phones began with transmitting just voice, then basic text in the form of SMS, then more complex data through the internet, and now offer live video streams of events taking place thousands of miles away.

The ingenuity, craftsmanship, innovation, creativity, endurance and thirst for profit that drive the constant use and improvement of physical capital constitute human capital. Human capital is most commonly measured through stock of skills, knowledge, experience, reputation, and physical attributes of people in a given economy. It is less tangible than physical capital and much more difficult to measure. It is what is required to convert the latent potential of physical capital into productive output. It is representative of the software of economic activity and growth.

But human capital alone is not enough; if physical capital is the hardware of an economy, and human capital is its software, another input needs to be identified that is vital to making full use of hardware and software. It is inconceivable that there could be much use of hardware or software without a network connection. What use are laptops and applications that run on them, if they cannot connect to other servers and users? Networks bring people together to interact, by utilising the infrastructure, and enhancing productivity. The value of these networks is known as social capital.

The report explores this enormously valuable resource which generates happiness and prosperity. To understand social capital, physical and human capitals are taken as the underlying resources that define social connectivity or community as the directory of people one can connect within a collective entity. Personal network can be seen as one's contact-list of members within the community. Social capital can be defined as the knowledge and experience (a) members of a community have of other members and, (b) how they interact optimally within the community, given the formal and informal rules, tactics and strategies one learns over time by interacting within the community.

The notion and concept of social capital has been used since the 19th century to mean goodwill, fellowship and mutual sympathy.[4] In 1960, Jane Jacobs defined it as 'value of networks' which leaves open questions on what exactly is a network and how to measure the value of a network. Both are

[4] L J Hanifan, 'The Rural School Community Centre', *Annals of the American Academy of Political and Social Science,* vol. 67, 1916, pp.130-138.

challenging questions. In early 1990s, Burt and Putnam used terms such as friends, colleagues, norms, trust and contacts that facilitate coordination and cooperation for mutual benefit to define social capital.

Fukuyama defines social capital as a 'set of informal values or norms shared among members of a group that permits them to cooperate with one another'.[5] He sees social capital as less bound-up in social structures the way Coleman sees it. According to Fukuyama, 'all social relations and social structures facilitate some forms of social capital; actors establish relations purposefully and continue them when they continue to provide benefits; and, social capital is linked in a more germane way to values and norms of an informal nature'[6] whereas, for Coleman, 'social capital manifests itself inherently in obligations, expectations, social relations, and norms'.[7]

Measuring social capital is difficult, but it clearly enables and impacts economic growth significantly. Like physical and human capital, social capital offers an important kind of connectivity. Roads and broadband may help bring people together, in tangible and measurable ways, but the depth with which personal and professional associations, religious and tribal affiliations connect people with each other is potentially immense. Social capital is a resource that grows with intensity of interaction and depreciates if not used. It can be inherited or acquired by association—e.g. via family connections or religious affiliation, or it may be developed through interactions. One must not confuse social capital as an end in itself but as a resource that is used for achieving goals, just like technology and labour are used for producing goods and services.

In a study of 630 urban and rural dwellers in Russia it was found that social capital can be built even when people do not have shared backgrounds, as long as fairness, generosity, helpfulness, and trust exist.[8] An important caveat to the role of trust, and culture in determining the levels of social capital is provided by Sobel, wherein a review of a wide array of research suggests how difficult it is to draw conclusions from cross-cultural comparisons of trust.[9] The institutional and cultural frameworks that foster trust may be different in different countries and controlling for these features may therefore have different implications in different settings.

Technology is impacting the newest and most cutting-edge thinking about social capital. Recent studies have examined the manner in which social capital is built and used by online communities. Ganley and Lampe find that members of online communities begin to develop deep networks, at fairly low levels of participation.[10]

Emphasis on social capital comes from observing and noticing the recent trend, which views it as an essential resource for economic development. Recent literature highlights organisations taking social capital as an essential input in their production function, where it is part of organisation capital just as customer lists, intellectual property, reputation, brand-name, processes and procedures, human capital and physical assets. When social capital rises, marginal products of other resources also rise, which are manifested through increased productivity and ultimately as economic growth and prosperity. However,

[5] F Y Fukuyama, 'Social Capital and the Global Economy', *Foreign Affairs*, vol. 74, no. 5, 1995.
[6] ibid
[7] J C Coleman, 'Social capital in the creation of human capital', *American Journal of Sociology*, vol.94, 1988, pp. 95-120.
[8] S Gachter, B Herrmann, and C Thoni, 'Trust, voluntary cooperation, and socio-economic background: survey and experimental evidence,' *Journal of Economic Behavior & Organisation*, Elsevier, vol. 55, no. 4, 2004, pp.505-531.
[9] J Sobel, 'Can We Trust Social Capital,' *Journal of Economic Literature*, vol. XL, 2002, pp. 139-154.
[10] D Ganley and C Lampe, 'The ties that bind: Social network principles in online communities', *Decision Support Systems*, vol. 47, 2009, pp. 266-274.

Ostrom observes the difficulty of creating social capital through external interventions.[11] Realizing that the two people cannot be forced to interact with each other, the most that a government can or should do is improve the infrastructure necessary for interaction.

Similarly, Facebook–a community of people on the Internet, needs a combination of hardware and software and the members use their human capital (to access and use the platform), along with the directory listing of other members of the community, and a way for contacting and interacting with each other to achieve a common goal. A similar role is played by libraries, community centres, religious venues, parks and play grounds, etc. to bring people together on a single platform where they can interact for some common goal. Within communities, libraries play a significant role, especially in large urban areas, colleges and universities, where they are viewed as venues for people to meet and collaborate rather than places for studying, reading or borrowing books.

It is not just libraries and play grounds but transportation and telecommunication that also play an important role in developing networks between communities and cultivating them for common goals.

Table 1: Quality of Infrastructure

	Road	Rail	Port	Air
Pakistan	72	55	73	81
India	90	23	83	71
China	53	27	67	79
Bangladesh	100	71	107	117
Indonesia	84	56	96	69
Malaysia	21	20	19	29
Thailand	36	57	43	28

Source: Global Competitiveness Report 2010

As evident in Table 1, Pakistan seems to already have the road infrastructure in place, which is better than India, Bangladesh, and Indonesia, but its rail and air infrastructure leave much to be desired. To increase productivity, existing infrastructure needs to be utilised efficiently through improved management and safety.

Almost all infrastructure projects have relied heavily on government funding with little or no investment from the private sector. Only in the last decade did the government withdraw from the telecom sector through privatisation. This has resulted in considerable gains in producer and consumer surpluses. Now the telecom sector has not only improved connectivity in Pakistan but has also contributed PKR 109 billion to the Federal Board of Revenue (FBR) in 2009-10. Annual telecom revenues have increased from PKR 144 billion at the time of privatisation in 2005 to PKR 358 billion in the fiscal year 2009-10.[12]

[11] E Ostrom, 'Social Capital: A fad or fundamental concept', *Centre for the Study of Institutions, Population, and Environmental Change*, Indiana University, 1999.
[12] Pakistan Telecommunication Authority (PTA), 'Broadband and Value Added Services', 2007.

The next section reviews the relevant literature which looks at connectivity as an important factor of economic growth. It is followed by a brief overview of the state of physical and social infrastructure in Pakistan today and also analyses how the present state of infrastructure and lack of social capital induce inefficiencies in markets that constrain economic growth. The conclusion discusses a few high priority reforms as a way of improving connectivity in Pakistan.

Literature Review

Improvement in connectivity creates and cultivates opportunities by linking individuals, organisations, communities and markets, and reduces time and costs required for productive interactions. Some numeric estimates from research literature show the effect of infrastructure on growth. However, these estimates need to be compared with investments in other economic activities to determine which ones offer the best returns on investment.

Efficient transport and telecommunication networks reduce production and transaction costs in poor regions[13] which serve as stimulus for domestic commerce. Empirical research shows that poverty incidence in 'good-road provinces' and 'bad-road provinces' of Indonesia decline by 0.33 and 0.09 percentage points respectively, for every one percentage point growth in provincial GDP. Increase in roads also appears to improve the wages and employment levels of the poor.[14] Another study shows that poor households in Vietnam living in rural communities with paved roads have a 67 per cent higher probability of escaping poverty than those living in communities without paved roads.[15]

Improved transport infrastructure has also reduced poverty incidence in People's Republic of China through agricultural productivity and non-farm employment. One per cent increase in road density increases agricultural GDP per worker by 0.08 percentage points, non-agricultural employment by 0.10 percentage points and wages of non-agricultural workers in rural areas by 0.15 percentage points. Among all infrastructure projects, roads have played a major role in reducing poverty–for every 10,000 Yuan invested on rural roads, 3.2 poor persons are estimated to be lifted out of poverty.[16]

Caldron and Serven find that infrastructure development has a relatively greater positive impact on the income and welfare of the poor, hence addressing issues of income inequality.[17] This analysis supports Estache's findings that infrastructure helps poorer individuals and underdeveloped areas to get connected to core activities, thus allowing them access to more productive opportunities.[18] These studies also identify the positive impacts of infrastructure services on health and education of the poor, which boosts employment, productivity and growth.

[13] C Gannon and Z Liu, 'Poverty and Transport,' *Mimeo*, The World Bank, Washington, DC, 1997.
[14] I Ali and E M Pernia, 'Infrastructure and Poverty Reduction- What is the Connection?', Asian Development Bank
[15] P Glewwe, M Gragnolati and H Zaman, 'Who Gained from Vietnam's Boom in the 1990s? An Analysis of Poverty and Inequality Trends', World Bank Working Paper 2275, Washington, D.C.
[16] S Fan, L Zhang and X Zhang, 'Growth, Inequality, and Poverty in Rural China: The Role of Public Investments', Research Report 125, International Food Policy Research Institute, Washington, D.C., 2002.
[17] C Calderon and L Serven, 'The effects of infrastructure development on growth and income distribution', 2004.
[18] A Estache, 'On Latin America's Infrastructure Privatisation and its Distributional Effects', *Mimeo*, The World Bank, Washington DC., 2003.

Cell phones and the Internet have become major drivers of growth and development in many countries. Studies have shown that 10 extra cell phones per 100 people induce 0.6 percentage points of extra per capita GDP.[19] Another study indicates that cell phones are more effective in promoting growth in developing countries (inducing an extra 0.81 percentage GDP points by introduction of 10 cell phones per 100 people) than landline phones (also 10 per 100 people), but have not been as effective as internet and broadband access, which induce an extra 1.12 and 1.38 GDP percentage points.[20] However, to compare these gains to other investments that also increase GDP and human welfare is beyond the scope of this report.

Cell phones provide labour flexibility and facilitate small entrepreneurs. One such example is of Quadir (a barber) in Bangladesh. Since he was unable to afford the rent for a shop, he bought a cell phone and a motorbike and now goes to his customers' homes for providing his services.[21] This has enabled him to serve a larger area and also charge a higher price for his services. Similarly, cell phones have also promoted flexibility among other small entrepreneurs, such as taxi-drivers and mechanics. By providing quick access to information, cells phones have made small markets more efficient. In Kerala, India, use of cell phones has made the fish markets more efficient because fishermen can now check the prices in several markets before deciding where to sell.[22] Through wider use of cell phones, corruption can also be reduced. In Pakistan, Zubair Bhatti asked clerks in Jhang district, who handled land transfers, to submit daily list of transactions, giving the amount paid and the mobile number of buyers and sellers to find out whether they had been asked to pay bribes. The guilty parties were then charged formally which deterred future corruption.[23]

A study performed by Caldron and Serven shows that growth benefits of telecommunications are higher than those of the transport networks.[24] In their analysis, one standard deviation increase in total telephone lines (telecommunications) increases the growth rate by 3.1 percentage points whereas one standard deviation increase in the length of road and rail network (transport) increases the growth rate by 1.4 percentage points. A study carried out by LECG, an economics research and consulting firm, quantifies productivity gains for different levels of broadband adoption. It finds an increase in productivity of 0.1 percentage points for every broadband line added per 100 people in countries with medium or high level of ICT (Information and Communications Technology). In countries with low level of ICT, increase in broadband penetration creates the ICT eco-system required to realise productivity gains.[25] Apart from having a direct impact on economic development, physical connectivity also has an indirect effect via improvement in social capital.

Development economics began to integrate notions of social capital into research in the late 1990s, and perhaps the most important examination of social capital within a development narrative has been carried out by Michael Woolcock. Woolcock[26] and Narayan[27] found that social capital could bring more

[19] L Waverman, M Meschi and M Fuss, 'The Impact of Telecoms on Economic Growth in Developing Countries', 2005.
[20] C Z W Qiang, 'Mobile Telephony: A Transformational Tool for Growth and Development', *Private Sector Development, Proparco's Magazine*, vol. 1, no.4, 2009.
[21] 'Mobile Marvels, A Special Report on Telecoms in Emerging Markets', The Economist, September, 24th edition, 2009
[22] R Jensen, R, 'The Digital Provide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector', *The Quarterly Journal of Economics*, vol. CXXII, no.3, 2007, pp.879-924.
[23] 'Mobile Marvels, A Special Report on Telecoms in Emerging Markets', The Economist, September, 24th edition, 2009
[24] C Calderon and L Serven, 'The effects of infrastructure development on growth and income distribution', 2004.
[25] 'Economic Impact of Broadband: An Empirical Study', LECG, 2009.
[26] M Woolcock, 'Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework', *Theory and Society*, vol. 27, 1998, pp.151-208.
[27] D Narayan, 'Bonds and Bridges: Social Capital and Poverty,' Poverty Group, World Bank, 1999.

opportunities and thus alleviate poverty and promote economic development. Kawachi and Berkman found that social cohesion, ties and trust are positively associated with self-rated health status, and negatively with mortality and crime rates in a community.[28] In a similar vein, Helliwell and Putnam found that a community's level of social capital is positively associated with school performance.[29]

Knack and Keefer explore the relationship between economic performance in 29 market economies and the levels of trust and civic norms in those economies. They observe three things: (1) trust and civic cooperation have significant impact on aggregate economic activity; (2) horizontal networks (measured by membership in groups) are unrelated to trust and civic norms (controlling for education and income) and to economic performance; and (3) low social polarisation, and formal institutional rules that constrain the government from acting arbitrarily, are associated with the development of cooperative norms and trust.[30]

Akdere and Roberts have summarised some key advantages and disadvantages of social capital. They highlight three important benefits of social capital, as identified by Sandefur and Laumann[31], to be information, influence and control, and social solidarity.[32]

Social capital can also lead to problems of free-riding where less-hardworking group members possessing greater social capital 'make demands on more successful members'. Portes summarises this economic downside as a process where 'opportunities for entrepreneurial accumulation and success are dissipated'.[33] The question of group ownership often leads to confusion about whether social capital benefits the group or the individuals.[34] Other disadvantages of social capital, mentioned by Akdere and Roberts are 'exclusion of outsiders' and 'downward levelling of norms'.[35] Specialised social capital within a community can deny access to outsiders—e.g. sugar-mill owners may collude to control sugar supply and seek legal protection (by bribing or lobbying) making it difficult for potential suppliers to supply to the market. Similarly, mafia families and criminal gangs damage social norms. Labour unions can also use internal linkages to influence decision making in ways which lead to inferior outcomes.

It is not just the quantity of connectivity infrastructure which effects growth and income distribution but also how efficiently it is used. One quarter of the growth differential between Africa and East Asia, and 40 per cent of the growth differential between high and low growth countries is due to the difference in the effective use of infrastructure resources.[36] The effectiveness of infrastructure depends on the efficiencies of agencies and institutions, which are related to physical infrastructure development, such as the National Highway Authority (NHA) in the case of Pakistan.[37]

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[28] I Kawachi and L F Berkman, 'Social Cohesion, Social Capital and Health', in *Social Epidemiology*, Oxford University Press, 2000

[29] J F Helliwell and R D Putnam, 'Education and Social Capital', NBER Working Paper Series, Vol. 7121, 1999.

[30] S Knack and P Keefer, 'Does Social Capital Have an Economic Payoff?', The Quarterly Journal of Economics, vol. 112, 1997, pp.1251-1288.

[31] R L Sandefur and E Laumann, 'A Paradigm for Social Capital', *Rationality and Society,*vol. 10, no.4, 1998, pp.481-501.

[32] M Akdere and P Robert, 'Economics of Social Capital: Implications for Organisational Performance', *Advances in Developing Human Resources,* vol. 10, no. 6, 2008, pp.802-816.

[33] A Portes and P Landolt., 'The downside of social capital', *The American Prospect*, vol. 26, no. 94, 1996, pp.18–22.

[34] L Crudelli, 'Social Capital and Economic Opportunities', *Journal of Socio Economics*, vol. 35, no.5, 2006, pp. 913-927.

[35] ibid.

[36] C Hulten, 'Infrastructure Capital and Economic Growth: How Well You Use It May Be More Important than How Much You Have', NBER Working Paper 5847, 1996.

[37] H Esfahani and MT Ramirez, 'Institutions, Infrastructure and Economic Growth', *Journal of Development Economics,* vol. 70, 2002, pp. 443–77.

Connectivity in Pakistan

Together telecom and transport sector of Pakistan account for more than 12 per cent of total GDP. Telecom sector has a share of two percent of GDP but contributes 6 to 7 per cent in total tax revenue. Transportation sector has a much bigger GDP share of 10.5 per cent and also provides over 6 per cent of employment in the country.

According to the World Bank 'although the [transport] sector is functional, its inefficiencies (long waiting and travelling times), high costs, and low reliability are dragging the country's economic growth. These factors also reduce the competitiveness of the country's exports, increase the cost of doing business, and constrain Pakistan's ability to integrate into global supply chains, which require just-in-time delivery. The poor performance of the sector is estimated to cost the economy about 5 per cent of GDP every year'.[38]

Road and Trucking

Road Infrastructure

The federal budget exhibits a strong bias towards financing the construction and maintenance of roads. Since 1996, total road length has increased by 13 per cent to 259,618 km in 2010, out of which 70% (179,290 km) are high-type (paved) roads. National Highways and Motorways constitute 4.2 per cent of the total road network and handle more than 85 per cent of total commercial traffic in Pakistan.[39]

Most of Pakistan's highways and motorways are along the North-South corridor with N-5 acting as the main artery carrying 55 per cent of the country's inter-city traffic. Other major roads include N-55 (Indus Highway), N-25, N-65, N-40 (RCD Highway) N-45, N-50, N-70, N-35 (Karakoram Highway), M-1 (Islamabad-Peshawar Motorway), M-2 (Islamabad-Lahore Motorway) and M-3 (Pindi Bhattian-Faisalabad Motorway). Around 60 per cent of the road network is in poor condition, mainly due to poor maintenance, traffic congestion and burst tires littering the highways and making them dangerous, especially at night, when there is poor visibility. There has been a significant shift from railways to roads, for both passenger and freight transport.

Over the past few years, there has been gradual increase in the length of paved roads and decline in low-type (unpaved) roads, since most low-type roads are being converted to high-type. National Highway Authority (NHA) has been carrying out extensive road development projects. 30 new projects are focusing on extending the network by 1,000 km, including bridges, flyovers and interchanges. NHA has also managed to increase its toll revenue by 36 per cent over the past year.

Another problem in road transportation is corruption within the police system. Traffic laws are lax in Pakistan—breaking the law and underage rash driving are common occurrences on the road. Policemen rarely punish violators. They are often underpaid and work long hours and therefore resort to accepting bribes in return for letting law breakers go free. Corruption is also rampant when awarding construction

[38] 'Doing Business in Pakistan 2010', The World Bank, Washington DC, 2010
[39] National Highway Authority Pakistan, www.nha.gov.pk

of road projects. Roads are constructed poorly with low standards so that they deteriorate quickly and contracts are then given to the same firms for repair and maintenance.

Trucking Services

For transportation, Pakistan relies heavily on trucking industry which handles 96 per cent of total freight traffic.[40] The number of registered trucks is 216,043 while those frequently using the roads are estimated to be 196,850. Out of the total fleet, two-thirds comprise single or double-axle trucks owned mainly by small operators. National Logistic Cell (NLC) is the largest operator with a market share of approximately 10 per cent

Low freight rates (which constrain the revenue of independent truckers) in the domestic market and high import tariffs on high capacity multi-axle trucks (which varies from 30 to 60 per cent) are major hurdles faced by independent operators. Low freight rates are a result of extreme competition in a market with many small, independent operators. Although this contributes towards lowering the cost of doing business for those who use trucking services, costs to society due to road damage rise significantly from overload and intensive use of highways (which do not get repaired and maintained), wastage of edible products and damage to goods during transportation, and increased rate of accidents.

Rail Transport

Railways all over the world have an edge in long haul and mass scale transportation of both goods and passengers. In Pakistan, it was the primary mode of transport until the 1970s. Since then railways' share has declined due to the shift in government's preference towards road. During 2005-10, budgetary expenditure on railways was only PKR 45.5 billion, whereas for national highways it stood at PKR 155 billion.[41] Today railways' share of inland traffic has reduced from 41 per cent to 10 per cent for passenger and 73 per cent to 4 per cent for freight traffic.

Timely and safe delivery of goods to the North from the port, in the South, became a major issue after the shift in preferences of policy-makers. After the creation of NLC to clear the goods from Karachi port, Pakistan Railways (PR) has found it difficult to regain its historical position. This has further pushed PR backward. Since 1990-91, total track length has decreased from 8,775 to 7,791 km. Similarly, total freight and passengers carried has decreased from 5,709 to 3,925 million tons and 84.9 to 58.9 million people, respectively.

In the last decade, however, PR has shown an encouraging trend in both passenger and freight revenue registering an average increase of 3.2 per cent and 4 per cent per annum, respectively. However, significant reduction in revenue during the past year has been attributed to economic slowdown and shortage of locomotives due to unavailability of spare parts. The delay has been aggravated by reduction in Public Sector Development Program (PSDP) allocation and other domestic facilities. Engines acquired recently from China are also experiencing maintenance issues, which have lead to closure of various routes.

[40] 'Economic Survey of Pakistan 2009-10', Ministry of Finance, Government of Pakistan, 2010.
[41] ibid.

Table 2: Revenue of Pakistan Railways

Fiscal Year	Revenue (PKR Million)	per cent Change
1998-99	9,310	--
1999-00	9,889	6.2
2000-01	11,938	20.7
2001-02	13,046	9.3
2002-03	14,812	13.5
2003-04	14,636	-1.2
2004-05	18,027	23.2
2005-06	18,184	0.9
2006-07	19,194	5.5
2007-08	19,973	4.1
2008-09	23,160	16.0
2009-10 *Jul- Mar*	16,875	-3.3

Source: Economic Survey of Pakistan 2009-10

Revenue is still very low, hardly enough to cover salaries and pensions, which equal PKR 14 billion and 7 billion per annum, respectively. In 2008-09, revenue grew by 16 per cent compared to the year before but since then revenue has declined to pre-2004 levels (Table 2), resulting in negative growth rates. Despite improved performance during the last decade, losses remain high. In 2006-07, total loss was PKR 10 billion and in 2007-08, it was over PKR 12 billion.

Aviation

As of 2007-08, Pakistan had 35 airports which handled more than 14 million passengers and 318,652 million tons of cargo during the fiscal year.[42] Jinnah International Airport in Karachi is the busiest, while Lahore and Islamabad airports also handle significant traffic. Cargo and passenger traffic in 2007-08 decreased from 2005-06, due to security concerns and poor economic and political environment. Passenger traffic declined by 0.4 million, whereas freight decreased from 347,674 to 318,652 million tons.

Number of domestic and international airlines operating in Pakistan has remained about 28. Number of domestic airlines has, however, declined from five to three in last couple of years. Aero Asia and Royal Airlines went out of business due to mismanagement and government's close cooperation with PIA, which constrained the economic space for smaller carriers. PIA has a market share of more than 80 per cent in passenger traffic and captures almost all domestic air-cargo transactions.

On international routes, there are frequent flights to UK and Middle Eastern countries. Demand on these routes mainly comes from Pakistani labour working abroad. However linkages with other countries remain largely infrequent and time consuming. There is only one direct flight to US (JFK Airport) in a week and that also from Lahore only. Average time on a direct flight to US is 18 hours,

[42] Civil Aviation Authority, Government of Pakistan

whereas on connecting flights it normally takes more than 24 hours. Similarly, there are only two direct flights to China (Beijing Airport), each week. Also, there are few flights to Germany, France and other European destinations. Connectivity with Africa, Latin America and South East Asia is also limited. Currently there is no Pakistani airline flying to African and Latin American countries mainly due to little demand. South East Asia also stays untouched by Pakistani airlines, except one or two direct flights to Malaysia. Connecting flights to these destinations are available but it takes much longer than flying direct and adds uncertainty to travel plans.

An in-depth study needs to be carried out to ascertain the demand for flights from Pakistan to various international cities at different prices and how much of that demand (domestic and international) can be fulfilled through existing airlines, if there were no restrictions imposed by the government regarding the number of flights the airlines may offer. Per kilometre cost of air travel from Pakistan is also high relative to regional economies (See Appendix 1).

Domestic connectivity also faces some constraints for growth, due to inadequate airport handling, frequent bird hits and slow check-in procedures. Domestic market largely stays biased towards PIA through preferential route allocation, tax benefits and other protectionist policies making it difficult for new carriers to enter the aviation sector. Due to extra security checks on airlines flying through Pakistan and the recent recession in the aviation sector, international airlines have been reluctant to expand in the Pakistani market.

Information and Communications Technology (ICT)

Due to economic slowdown in last couple of years, service-providers in Pakistan have taken several cost cutting measures including optimisation of human resources, cut in employees' perks and freezing employment. Recent floods have also damaged the existing infrastructure which has forced operators to divert their funds away from network expansion towards repair and maintenance.

Mobile Telephony

Rural income has risen in many countries with the use of mobile phones. With the introduction of pre-paid services, low-income groups have access to cellular which help provide and facilitate income-generating activities. Mobilink has introduced a Mobilink PCO system on the basis of the village phone model that provides income opportunities to households using mobile phones to sell phone calls to those who cannot afford a cell phone.

In cities, text messages are being used as advertisements to promote small businesses that cannot afford to advertise in mainstream media. Ideas such as these should be encouraged by Pakistan Telecom Authority (PTA) to promote businesses that would generate economic activity in hard to reach places. Teledensity (phones per 100 individuals) has increased from 4.3 in 2002-03 to 64.1 in 2009-10. Much of this growth has come from cellular industry, which has 94.2 per cent share of telecom traffic, followed by 3.2 per cent of fixed local loop and 2.6 per cent of wireless local loop. Cellular sector also has the highest share (70 per cent) in telecom sector, as of 2009-10. With the coming of Warid and Telenor, share of Mobilink in the cellular sector has declined from 64 per cent in 2003-04 to 32 per cent in 2009-10 (Figure 1). Ufone and Warid have experienced a drop in their total number of subscribers during 2009-10.

Fixed land line penetration has remained low despite issuance of new licenses. Old copper-based infrastructure remains a significant hurdle in its growth. To install new fibre optics networks, huge investment is required. Wireless local loop operators (Wateen and Wi-tribe) have diverted their resources towards broadband expansion.

Figure 1: Market Share of Cellural Subscribers (%)

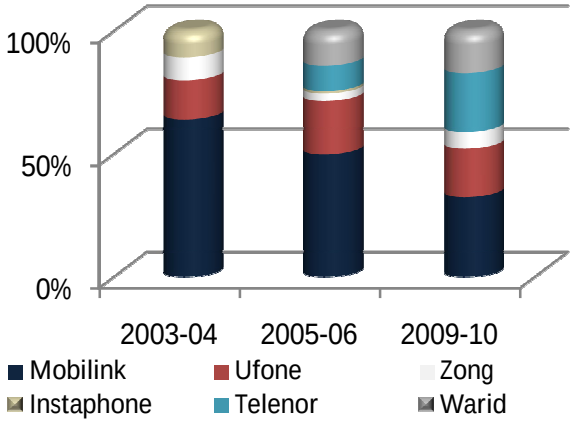
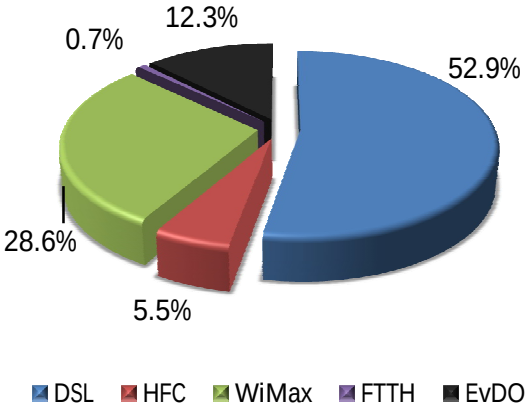


Figure 2: Market Share of Broadband Technologies (%)



Source: Annual Report 2009-10, PTA

Internet and Broadband

Lately, internet services have experienced significant expansion with 13 companies competing for subscribers. According to ISPAK (Association of Pakistani ISPs) estimates, there were about 3.5 million internet subscribers during 2007 across Pakistan and more than 17 million users—i.e. about 5 users per subscription. The number of internet users increased to 20.5 million in 2009.[43]

Proportion of different broadband technologies in Pakistan is illustrated in Figure 2. DSL has historically dominated due to the existence of fixed land line infrastructure. However, share of DSL has decreased from 100 per cent to 53 per cent mainly due to successful experience of WiMax technology. WiMax was introduced in Pakistan by Wateen Telecom Ltd (a private company) in December 2007 and since then it has grown to 257,585 subscribers. Other players include Wi-tribe and PTCL. EvDO (by PTCL) is also a wireless technology which uses radio signal for transmission. It is mainly used to provide mobile broadband services. Initially WorldCall was the sole provider of broadband service but now PTCL has stepped up by offering EvDO in 100 cities in Pakistan.

Currently broadband penetration in Pakistan remains very low at 0.5 per cent (900,648 subscribers). This low level of penetration, despite considerable growth, is due to less focus on rural areas, low literacy, poor computer skills, lack of local content and applications, deteriorating standard of fixed land lines, high costs for potential rural subscribers, reservations among parents regarding cyber security and child safety, and language barriers.

[43] 'The World Factbook 2010', CIA 2010

Connectivity Scorecard

Waverman and Dasgupta have given Pakistan a telecom connectivity score of 1.53 out of 10 in 'Useful Connectivity'.[44] This gives Pakistan the lowest rank in a group of 25 resource driven economies. In the same group, India is ranked 21st and China 17th.

Figure 3: Connectivity Scorecard

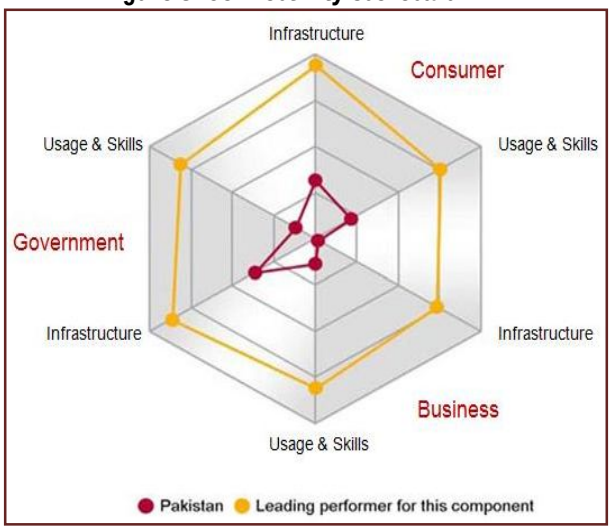


Table 3: Connectivity Scorecard

	Score	Weight
Consumer Infrastructure	0.32 (0.93)*	0.18
Consumer Usage & Skills	0.22 (0.74)*	0.18
Business Infrastructure	0.02 (0.72)*	0.31
Business Usage & Skills	0.14 (0.79)*	0.26
Government Infrastructure	0.36 (0.85)*	0.04
Government Usage & Skills	0.12 (0.80)*	0.03

* The score of the leading performer for this component

Source:www.connectivityscorecard.org (2010)

Figure 3 shows Pakistan's relative position compared to leading countries in each sub-sector. Table 3, while presenting performance in numeric form, also shows the importance of each sub-sector when computing final connectivity score. Pakistan does poorly in all sectors. However, score in the consumer sector is relatively better, mainly due to increasing foreign and domestic investment in consumer-focused ICT infrastructure.

Since 2001-02, foreign direct investment in ICT has increased from USD 6.1 million to USD 1.44 billion in 2007-08. This has resulted in improvement in consumer sector infrastructure and usage and skills compared to previous years.[45]

In the Government sector, although significant infrastructure is available, which highlights government intention of promoting ICT, but due to poor usage and skills not all benefits are being realised. Business sector, which gets 57 per cent of the total weight, does not score as high as the consumer sector, in both infrastructure and usage and skills – business sector scores are very low. Why this is so, needs further investigation and in-depth analysis.

e-Government

Pakistan also scores poorly in e-government which if improved could significantly increase usage of ICT for both businesses and consumers. A United Nation's survey breaks e-government development process into five phases that include Emerging, Enhanced, Interactive, Transactional and Connected.[46] The first stage involves online presence of various ministries in the form of web page(s) showing static

[44] L Waverman and K Dasgupta, 'Connectivity Scorecard 2010', LECG, 2010.
[45] 'Broadband and Value Added Services', Pakistan Telecommunication Authority (PTA), 2009
[46] 'E-Government Survey', The United Nations, 2008.

information. In the third stage, government delivers online services such as downloadable forms. Services to increase the convenience of citizens and a user-friendly interface also start becoming evident. The fifth and final stage, which is the most advanced level of connectivity, is characterised by:

1. Horizontal connections (among government agencies)
2. Vertical connections (central and local government agencies)
3. Infrastructure connections (interoperability issues)
4. Connections between governments and citizens
5. Connections among stakeholders (government, private sector, academic institutions, NGOs and civil society).

Pakistan is in third stage of e-government. While some government departments are moving from second to the third stage, others such as Federal Board of Revenue (FBR) and NADRA are progressing from the third to the fourth stage. Pakistan gets a score of 0.28 out of 1, in e-government, while India and China get 0.36 and 0.47 respectively. For example, better use of e-government in the Secretariat in Karnataka, India is presented in Box 2.

Box 2 – Sachivalaya Vahini or e-governance in the Secretariat in Karnataka

The Secretariat is the apex decision making body of the state and deals with a large number of departments. It involves an enormous amount of communication, keeping, maintaining and processing a large volume of data files. The manual creation, movement and maintenance of files involved enormous delays and inefficiencies. The government of Karnataka has recently set up a Secretariat Local Area Network by connecting 1000 computers in 40 state departments and 6000 secretariats. The National Informatics Centre of the state provided software support. The project has the following components:

(a) Patra-the Letter Monitoring System. This is designed for the management of a large number of letters received in the secretariat by scanning these letters and moving them from desk to desk, or department to department;

(b) Kadatha-File Monitoring System is the decision support system to monitor, track and decide/dispose the files without delays. Through this system, electronic files are moved from desk to desk and from department to department without waste of time;

(c) Mokaddame-Court Case Monitoring System monitors the court cases in which government is the party. Cases received, petitioners/respondents details, court orders, cases put up for hearing on a particular day/type can efficiently be managed;

(d) Aayayaya-Budget Monitoring System helps in making budget estimates. It also monitors budget proposals once a budget is allocated to departments;

(e) Sibbandi-Personal Information System maintains information about details of employees. Within a single click, the entire history of the employee can be viewed;

(f) Customer Support System provides an online system to lodge any complaints regarding hardware, network, and application software system. This system also provides online instructions for the solutions to problems.

Source: Human Development in South Asia 2008, Mahbub ul Haq Human Development Centre

Human Capital: Why Brain Drain?

While the importance of connectivity is emphasised, its effective utilisation depends on human capital (skills, knowledge and experience). Appropriate skills are required to cultivate a connection—for example one needs to know how to operate a vehicle (especially a large 18 wheel truck) in order to fully benefit from the road network, or how to use a laptop to connect to the internet, how to use a cell phone to connect remotely to interact with someone else. At a macro level, high quality human capital is also necessary especially when it comes to the management of existing resources.

Most of the human capital in Pakistan comprises low- to medium-skilled labour. High-skilled human capital, finds itself well off in migrating to developed world. The end result is brain drain. If transmission of knowledge and skills takes place from high- to medium- and consequently to low-skilled labour, where highly-skilled keep up with the recent trends in their profession, brain drain can significantly be reduced. Other than improving the quality of education to develop highly-skilled human capital, strategies must be devised to retain and motivate this top of the line labour force that can benefit Pakistan's growth.[47] Brain drain, although a significant source of foreign remittances, ultimately leads to deterioration of institutional quality in the home country to which Haque alludes as the 'vicious cycle' (See Box 3).

[47] NU Haque, 'Brain Drain or Human Capital Flight', Pakistan Institute of Development Economics (PIDE), 2005.

Box 3 – Vicious Cycle of Poor Governance and Brain Drain

For political reasons, governments in poor countries have found it expedient to expand employment while capping wage growth. Similar considerations have led to the pursuit of egalitarian policy in the government cadre so that wage scales have been compressed and salary increases and promotions are not merit-based. The result is that there has been a large flow from these public sectors not only to the International Financial Institutions (IFIs) but also to the multinational sector, internationally as well as domestically.

With poor institutions and poor governance, public sector delivery of services—personal security, physical infrastructure, such as roads and railways, clean environment and facilities to raise children and provide a future for them—is poor or inadequate. Declining quality of services has often been cited as a cause of flight of human capital. Poor governance can therefore be self-reinforcing. Once it sets in, it ratchets taxes upwards and encourages evasion; lowers professional standards, encouraging the flight of better professionals leaving the poor quality professionals to manage with ever weakening standards. Many interesting models have been developed to illustrate how poor incentives can lead to poor allocation of talent, which ultimately impedes governance and growth. Societies with poor governance can be stuck in a low growth trap which is difficult to break out from.

Despite numerous consultant and technical assistance reports for capacity building and civil service reforms citing the scarcity of skills as a major constraint to development, to date no systematic attempts at developing an assessment of needed skills in the poor countries has been undertaken. Yet it is obvious to those involved in technical assistance and training, to maintain vigilant systems for supervision and regulation, provision of social development (including health and education), development and maintenance of infrastructure and governance in general, key skills such as academic, financial, engineering, managerial, and medical are required at different quality levels. Continuous flight of human capital will retard the modernisation process as well as the development and implementation of effective domestic policy.

Source: NU Haque, 'Brain Drain or Human Capital Flight', Pakistan Institute of Development Economics (PIDE), 2005.

State of Social Capital

Zaidi has analysed the overall state of social capital in Pakistan[48] by looking at some key instruments which affect and reflect the intensity of social interactions within communities such as libraries, public spaces, committees or ROSCAs, professional associations and labour unions. Some key findings of the study are summarised in Box 4.

[48] M Zaidi, 'Disconnected? Physical Capital, Social Capital, And Connectivity for Economic Growth in Pakistan', Centre for the Process of Change, 2011

Box 4 – Components of Social Capital

Measuring social capital is a complex exercise. A number of indicative examples of social capital may be useful for future research, and deriving some generic policy inferences.

Professional Associations and Labour Unions

Professional and labour unions are vital forms of social capital for individuals who cannot easily influence political and economic decisions, independently, in the absence of unified expressions of collective interests. Professional associations represent highly specialised and skilled labour. Membership in professional associations helps in identifying trained professionals that exist in a given economy.

The Pakistan Medical and Dental Council reports a total of 144,403 qualified and licensed doctors and dentists in the country. This represents less than one physician per 1,000 people. Most developed countries have a minimum of three or more physicians per 1,000 people. Membership of the Institute of Chartered Accountants, which certifies Chartered Accountants (CAs) in Pakistan, is also skewed. 71 per cent (5,078) of CAs in Pakistan work in four cities: Islamabad, Rawalpindi, Lahore and Karachi. Similarly total membership in labour unions in Pakistan, as recorded by the Pakistan Statistical Handbook of the Statistics Division, has also decreased by 35 per cent since 1980. There is more unionised labour in the public sector than in the private sector. The WAPDA (Water and Power Development Authority) union has regularly managed to protect the collective interests of WAPDA employees.

Committees and ROSCAs

A common mechanism of informal credit in Pakistan is a 'committee' or Rotational Savings and Credit Association (ROSCA). ROSCAs use social collateral (connections between individuals and the threat of social sanctions) to address the problem of incomplete contracts due to imperfect information and difficult enforceability. ROSCAs rely to a significant degree on social capital. ROSCA members gather for a series of economically motivated meetings. Informal surveys of housewives, shopkeepers, members of closely knit religious and ethnic communities, especially in urban areas, confirm either participating in or knowing of a social committee.Numerous instances of policy prescriptions have called for finding a way to take advantage of the committee system—an existing example of the economic value of social capital. For example, in Small & Medium Enterprise Development Authority's (SEMDA's) Provincial Entrepreneurship Promotion Strategy 2004-2008, one of the recommendations for helping entrepreneurs is by providing them with greater access to committees.

However, attempts to formalise an informal mechanism that is a manifestation of social capital in action may be a very bad policy. The entire basis for the success of ROSCAs and committees is the informal arrangement. However there is no verifiable database of various committees in Pakistan. Metrics for estimating the size and scope of ROSCAs are unknown. Without a substantial amount of research into ROSCAs any concerted or clear policy prescription would be speculative, and from the angle of social capital, potentially detrimental to the communities.

Source: M Zaidi, 'Disconnected? Physical Capital, Social Capital, And Connectivity for Economic Growth in Pakistan', Centre for the Process of Change, 2011

In Pakistan, libraries and public spaces (parks, museums, play grounds, stadiums, theatres, and centres of arts and performances) have played a very limited role in promoting social interaction. It is mainly because of how they have been viewed by policymakers and citizens, alike. For example, libraries are viewed as merely buildings (inorganic structures) for reading and perhaps as landmarks for connecting. This is a very limiting and sub-optimal way of utilising resources such as the building, land and garden, sculptures, paintings and other art works displayed in the library, books, multimedia (CDs, DVDs, tapes), microfiche, magazines and newspapers, academic and technical journals, historical and government records, furniture and equipment (computers, photocopying machines, internet lines, etc.), and trained

library staff. It is sad that valuable resources are constructed, purchased and stored but hardly ever used by our citizens–youth and professionals alike–and not properly maintained. The state of libraries in Pakistan is summarised in Box 5.

Box 5 – Libraries as Public Spaces

There is no official estimate for the total number of libraries in Pakistan. The last known survey undertaken in 1989 estimated a total of 284 libraries in the country. In an interview, officials at the National Public Library estimated the number of public libraries to be about 400, which included a cautionary note about what constitutes a 'public library' at the *Tehsil* level in Pakistan—often no more than a few shelves of books inside a district or *Tehsil* headquarters, which is almost never used.

Anecdotal evidence from both the provincial and district level belies the estimates provided. For example, Sindh, which has 23 districts, has no public libraries of any kind in sixteen of those districts. In Rawalpindi, a district with a population of over 4.5 million, only two public libraries are functional. Next door, in the federal capital of Islamabad, where there are as many as six public libraries, none are functional, lack water and electricity, as well as the requisite staff. One of the problems has been inconsistent library policies. In a survey of government's performance in promoting libraries, Bushra Almas Jaswal, Chief Librarian at Forman Christian College University, Lahore, illustrates the declining trend in efforts to promote and sustain libraries in Pakistan since 1947. Jaswal measures performance on a six point scale in the areas of planning, legal activity, development and financial support. The current state of libraries in Pakistan is not hard to understand when reviewing Jaswal's excellent portrayal of public policy for libraries. In eras where there was planning and legislative activity, there was no money. When there was money, there was no planning.

Other Examples of Public Space

Though there is little data on public parks and sporting venues for youth, anecdotal evidence suggests these spaces have skewed usage. Pakistan's cricket grounds or streets do not show a cross-sectional representation of the socio-economic range of Pakistanis. Low confidence in law and order situation and poor quality of grounds and parks could be playing a critical role in separating Pakistani children from different economic strata. The traditional place where communities sit and interact with each other, the Pakistani version of the café, is the *Dhaaba*. In more urbanised spaces, corner *Dhaabas* often adorn the streets on which modern cafés have come up, which means that the socio-economic divide once again determines where you eat and drink and who you interact with.

The Local Government Ordinance 2001 included a number of instruments that sought to leverage the sense of community that is germane to Pakistani society in service of rural and urban development. Insaaf Committees, Musalihat-e-Anjuman and the Citizen Community Boards (CCBs), all sought to help drive local solutions for local problems by formally recognising the social networks and trust bonds of communities, many of which had functioned without fail for centuries. However, most of the community instruments conceived by the Local Government Ordinance 2001 were of course unable to survive the rollback of devolved local governments in 2009 and 2010. This singular lack of political viability for instruments that largely sought to formally recognise, reward and sustain informal institutions of the community may represent an important trend.

Source: M Zaidi, 'Disconnected? Physical Capital, Social Capital, And Connectivity for Economic Growth in Pakistan', Centre for the Process of Change, 2011

In developed countries, libraries provide a space for not only self study but also for group study, community meetings, research, contemplation, composition, computer facilities, with well designated sitting areas such as food and drink zones for taking short breaks. Significant area in the library is

dedicated for various 'collective' activities for interacting, which develop social capital. Similarly, managers of public spaces (Central Park, Time Square, Trafalgar Square), frequently organise festivals, fairs, concerts, marathons and sporting events. In the United States, school parks are open to communities after school timings–an efficient way of utilising existing infrastructure.

Social capital can also be of international nature—in the form of Pakistani Diasporas. India presents a good regional case study. Students graduating from Indian Institute of Technology (IIT) and Indian Institute of Management (IIM), both having many campuses nationwide, go to the developed world, especially to the U.S., for higher education (Masters and PhD degrees). Since 1953, more than twenty thousand Indians have migrated to the United States. Although these institutions of higher learning have been criticised for encouraging brain drain from India, the highly educated and well connected Indian Diaspora have provided a vital platform to India for greater international networking and creating the technology hub in Bangalore, Hyderabad and other cities in India, during the past 20 years.

After liberalisation of the Indian economy, in the early 1990s, the past trend of brain drain is experiencing a gradual reversal. Now, Indian Diaspora is not only investing in India but is cultivating social capital that emerged from the human capital context (i.e., IIT and IIM alums) by bringing in business contracts from the United States (banks, multinationals, and even U.S. domestic firms) through their international contacts. The return of the Diaspora and their networks are being fused with domestic networks and contributing significantly towards development of Indian markets, commerce, institutions and overall economic growth. Over the last decade, emerging scientific and manufacturing industries and outsourcing of technical jobs from North America and Western Europe to India has created significant opportunities for the graduates within India.

Pakistan also has a significant Diaspora. However, volatility in economic growth, political instability, insecurity and lack of political consensus to pass essential reforms discourages the Diaspora from investing in Pakistan or collaborating with local enterprises and institutions (Box 6).

Box 6 – Three Main Reasons for Flight of Professional Skills

1. Incentive of a higher rate of return, often at a lower risk, to human capital in the host country. This occurs for at least the following two reasons:
   a. Host countries are often able to offer market determined salaries, unlike the countries of origin where the public sector intervenes and interferes in almost all professions and has an ethos of non-competitive remunerations.
   b. Host countries have a stable macroeconomic and socio-political environment that provides security as well as substantial creature comforts, both of which often are in question in the home country.
2. For professional growth, it might be important to be in the professional centers that are mainly in developed economies. Without participation in such centers and conferences, the risk of professional marginalisation and obsolescence is great.
3. Poor countries, because of resource shortages or mismanagements, are frequently unable to provide complementary inputs for the practice of the concerned profession. For example, research scientists in universities may not have laboratory facilities; doctors may not have hospital equipment, etc.

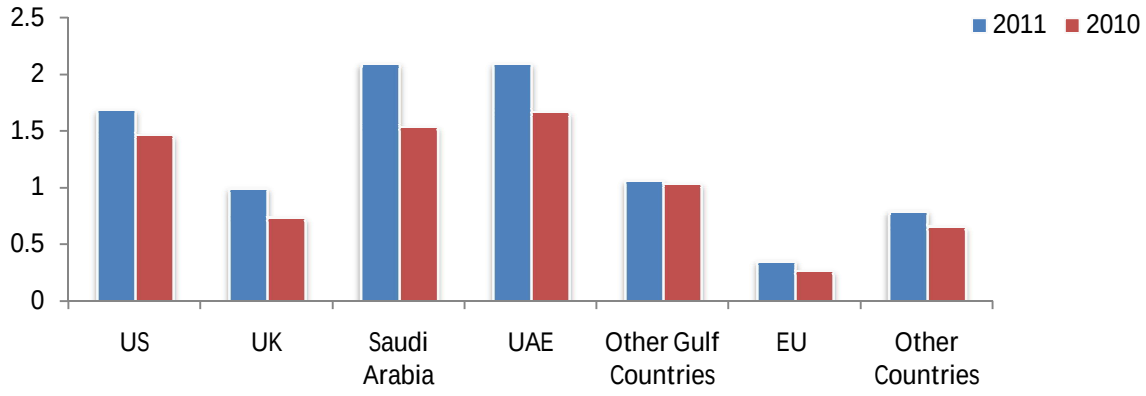
Source: NU Haque, 'Brain Drain or Human Capital Flight', Pakistan Institute of Development Economics (PIDE), 2005.

Global Connectivity

Share in international trade can be viewed as a proxy for global connectivity of any country as it is mostly the case that countries with organised physical and social networks find it mutually beneficial to transact with each other. Pakistan's share in international trade has experienced minimal change during last three decades. The only significant reform effort was made during the first of half of 2000-10 under the trade liberalisation program. It involved reduction in government trading monopolies–especially in agricultural sector–removal of import quotas, import surcharge and regulatory duties, and significant tariff cuts and rationalisation. The resulting structural changes lead to increase in the openness ratio from 25 per cent to almost 30 per cent which was later identified as the third most important factor contributing towards economic growth.[49] Another positive outcome was also an initial sign of export diversification.[50] However, the second half, especially after the financial crisis of 2008, saw a dramatic reversal of this policy hence eliminating the benefits accrued till then.

Today most of Pakistan's exports remain geographically concentrated. In 2010, three markets (UK, US and the EU) absorbed 64 per cent of Pakistan's total exports in goods and services. Recently, State Bank of Pakistan has also taken significant steps in the direction to ease transaction between Pakistan and Gulf countries. This has resulted in increased inflow of remittances from targeted countries through formal channels (Figure 4).

Figure 4: Remittences for July-April (USD Bn)



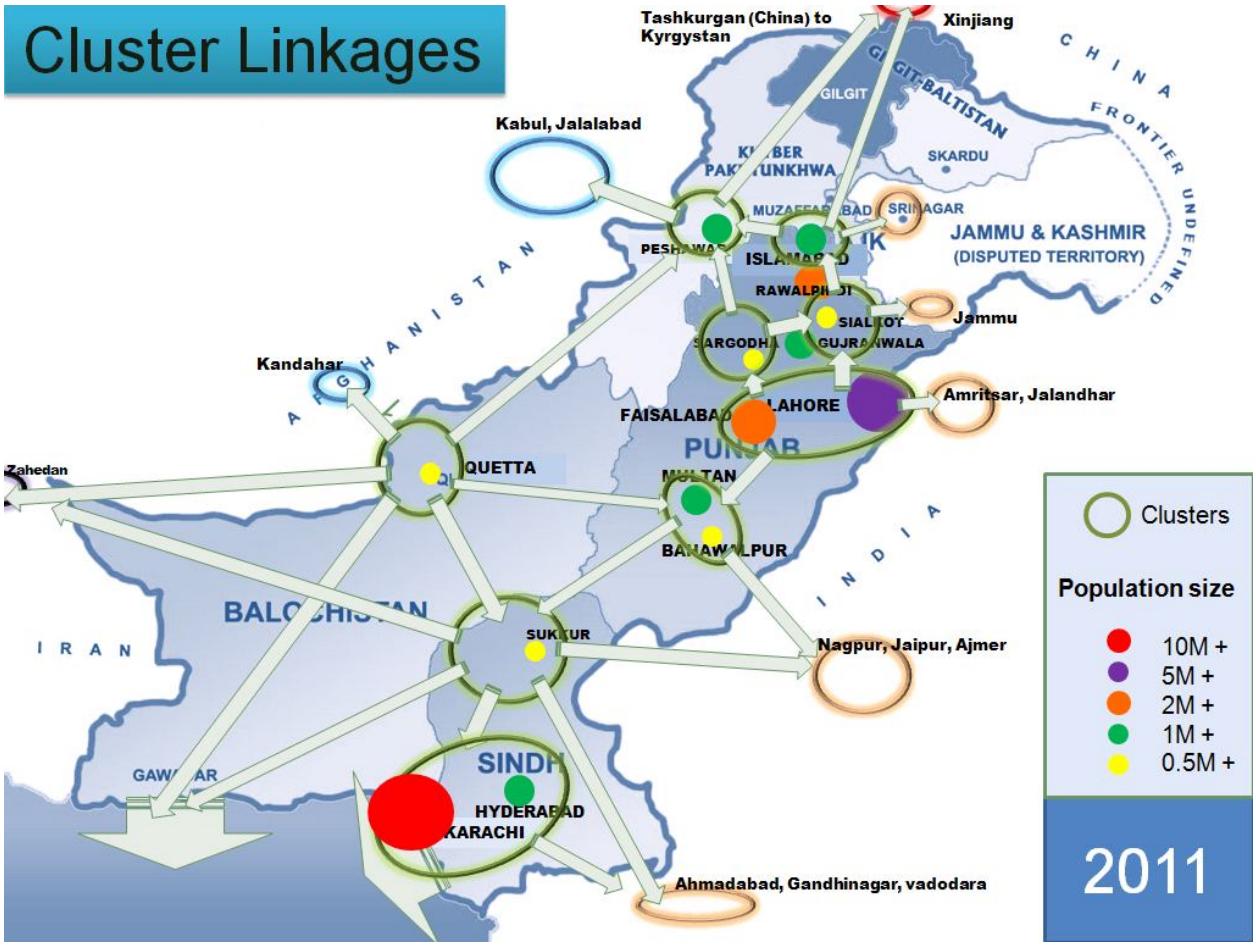
Pakistan's connectivity with rest of the world and most importantly the neighbouring countries is very limited. This is visible from Pakistan's trade share with India, China, Iran and Afghanistan which together stands at only 20 per cent of the total. Out of this, 60 per cent comprises trade with China alone whereas trade with countries on the western border suffers from poor physical infrastructure, while trade with India is largely a question of political will. The matter gets exacerbated due to manual processing at the customs and border posts.

[49] 'Pakistan: Growth and Export Competitiveness', Report No. 35499-PK, The World Bank, Washington DC., 2003.
[50] 'Pakistan: Framework for Economic Growth: Pakistan', Planning Commission, Islamabad, 2011.

There is significant trade potential which can be exploited with the adoption of the combination of reduced restrictions, improved transport network and automated custom posts. It is reported that the informal trade with India, Afghanistan and Iran is couple of billion dollars more than what is reported.

Figure 5 highlights clusters along the international border in the neighbouring countries which could possibly be connected with domestic clusters in order to increase trade and therefore improve regional connectivity of Pakistan.

Figure 5: Cluster Linkages



The total number of border posts along the western border remains roughly the same. However, along the Indian border, there is potential of increasing the border posts from the current number of three (which include both fully and partially active posts) to at least five.

Figure 5 also shows the potential linkages across economic clusters within Pakistan which may facilitate domestic commerce. Although most of the linkages already exist and only need to be strengthened, one major link which requires significant investment is that of Gwadar with upcountry. Given the economic viability of these linkages, private investment can be attracted if appropriate regulatory framework is provided.

Constraints on Growth

Disintegrated Markets

Domestic markets are not fully integrated. More than 30 per cent of agricultural output is currently wasted due to inadequate farm-to-market roads, lack of cold storage facilities, and obsolete and underpowered trucking fleet. Moreover, average speed of Pakistani trucks is half of the average truck speed in developed countries. With productivity of Pakistan Railway's freight services being only 1/8th of China and 1/3rd of India[51], it not only takes longer but also costs more to deliver goods leading to significant price differentials of goods in both domestic and international markets. Lack of efficient connectivity increases the risk of joint ventures for businesses from different geographic areas. This not only reduces growth in domestic commerce but also discourages innovation by forcing people to stick to their traditional ways of doing business.

Furthermore, low ICT penetration and limited connection in rural areas slows down the flow of critical information, thus leading to sub-optimal decision-making. By focusing only on saving agricultural produce from going to waste and ensuring smooth and timely information flow the overall turnover and profitability of farmers can be raised to eventually reduce poverty.

Table 4 highlights key indicators which are responsible for effective use of ICT in any country. All rankings, except e-readiness, are out of 133 countries where rank of 1 is given to the best performer. In the e-readiness index, 40 per cent weight is given to 'business environment and consumer and business adoption' and 20 per cent to 'connectivity and technology infrastructure'. Pakistan's poor performance in this index suggests that it does not have a suitable environment for intensive e-commerce.

Table 4: Why is e-commerce still at an infant stage?

Countries	E-readiness (out of 70)*	Prioritisation of ICT	Staff training	Training services
Pakistan	66	74	112	99
China	56	17	50	47
India	58	19	34	32
Indonesia	65	71	33	48
Malaysia	38	14	16	26
Singapore	7	1	2	1

Source: The Global Information Technology report 2009-10

*The 2009 e-readiness rankings, Economist Intelligence Unit (2009)

Recently, however, there has been some growth in e-commerce especially in the banking sector which has taken advantage of rising teledensity and introduced mobile phone and online banking. Almost half of the country's 7,000 commercial bank branches are now providing online banking. On a smaller scale, there are also few online shopping websites and job portals which can provide the base for developing the right culture for e-commerce. Major hurdles are unavailability of proper hardware infrastructure, few internet users, low security of online transactions, and poor adoption of technology by businesses, universities, and the government.

[51] 'Pakistan: Growth and Export Competitiveness', Report No. 35499-PK, The World Bank, Washington DC. 2003.

In all the other indexes, Pakistan's performance is again not encouraging, when compared to regional economies. Although there is not a huge difference in e-readiness when compared to China and India, significant gap in other rankings suggests that Pakistan will continue to lag in e-readiness at least in the near future. In China alone, there are 1100 e-commerce websites and total number of people participating in e-commerce activity approximates to 142 million. E-commerce in India is also gaining momentum. India's largest e-commerce website (tradeindia.com) has 0.7 million buyers and is growing at a rate of 35 per cent annually.

Lack of social capital across rural communities further exacerbates market inefficiencies. In the absence of credible accountability infrastructure, which is the case in rural areas, social capital can act as a threat in the form of social exclusion. Therefore, in rural and tribal areas, business dealings mostly take place within or across communities only if social capital exists, which is traditionally an outcome of family and inter-generational linkages.

In the absence of significant cross community interaction, high level of social capital within a community can sometimes create multi-polar societies where each pursues its own goals. A prime example of this is the Khurram Agency in the Federally Administered Tribal Areas (FATA) of Pakistan. Ideological differences between two religious communities in the agency usually lead to clashes and frequent killings. Increased social and business interactions between two communities can develop social capital and hence build trust which is necessary for peaceful and harmonious co-existence. Introducing mobile market on the patterns of Bangladesh can be one way of increasing information flow across communities and promoting greater interaction for mutual benefit.

Lethargic Cities

Over the last decade, cities have increasingly faced traffic congestions. Unorganised and infrequent public transport with no safety and quality control has forced people to resort to personal transport such as cars and motorcycles. City planners look for solutions in underpasses and flyovers instead of improving the public transport system.

In Karachi, in 2002, cars and motorcycles accounted for 92 per cent of the vehicles as compared to 6 per cent of para-transit vehicles and 2 per cent of public transport vehicles. Furthermore, transport is dominated by the private sector in the form of minibuses and coaches, which are low capacity modes of transportation and are unable to cater fully to public demand for transport (see Table 5). In Karachi, 81 per cent of the public transport vehicles are of low capacity.[52] This is mainly due to higher import tariffs on large buses and inadequate financing.

In bigger cities, lack of regulatory framework for monitoring the businesses during the last two decades has also led to monopolies which are now operating, in collaboration with corrupt police officers, as transport mafia. Thus, a potential entrant faces stiff opposition. This also leads to under utilisation of routes to a level which offers highest returns to the monopolist.

[52] I A Qureshi and L U, 'Urban Transport and Sustainable Transport Strategies: A Case Study of Karachi, Pakistan', Tsinghua Science and Technology, vol.12, no.3, 2007.

Table 5: Public Transport (Road Based) Fleet and Routes (Number)

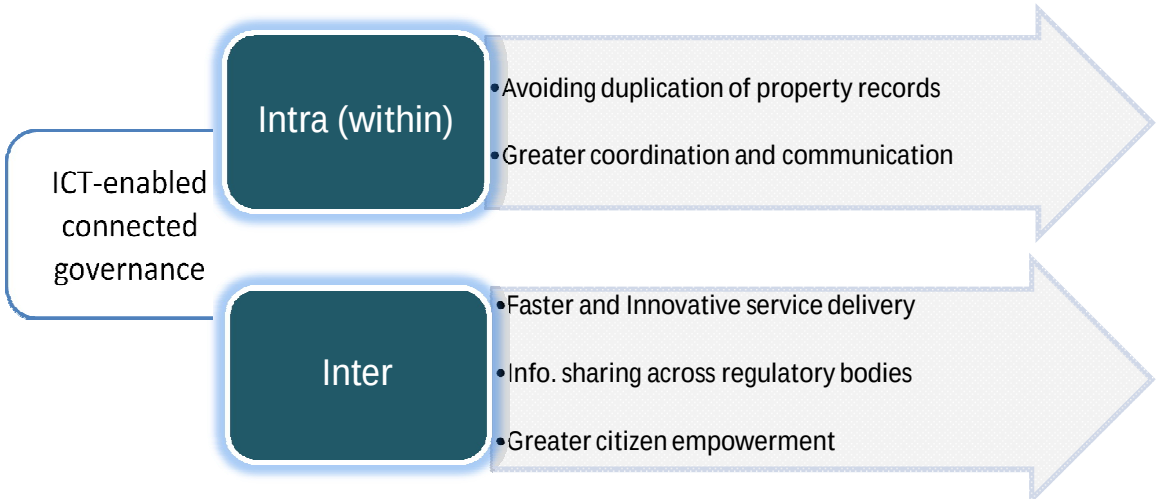
		Routes	
Modes	Number of on road vehicles	Classified	Operative
Buses	2300	110	48
Minibuses	6284	197	104
Coaches	3562	96	67
Total	12146	403	219

Source: City District Government Karachi

Inadequate transport system is a major barrier for cities to become engines of growth. The problem gets multiplied when it comes to Pakistani cities where high-density areas are discouraged due to outdated and ill planned zoning regime. Horizontal expansion of cities results in low population density means a lesser probability for any individual to come across new ideas. None of the cities offer a dedicated city centre which could encourage networking and hence raise the levels of social capital. In addition, lack of community spaces such as air-conditioned shopping malls, libraries, clean cinema halls, museums, parks, etc. make our cities dull and uninviting—cities are not attractive for 'connecting' and 'interacting' and hence the social capital in Pakistan remains low.

Regulatory bodies have also not increased their internal and external efficiency by adopting ICT-enabled connected governance. Duplicate property records, little coordination within the regulatory bodies, low participation by citizens in decision-making create problems in city planning and administration. Figure 6 highlights some of the benefits which could result from connected governance.

Figure 6: Benefits of Connected Governance



Poor Trade Facilitation

Pakistan ranks 85 out of 183 countries in World Bank's report on doing business. The report evaluates the business environment by evaluating dimensions such as starting a business, dealing with

construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, and closing a business.[53]
Pakistan's ranking exceeds China's and India's, which rank 87 and 133 respectively. If the government could decrease the total number of documents required for external trade by only two, through ICT adoption, Pakistan's ranking would improve further from the current 85 to 78. At present total documents required for export and import are 9 and 8 respectively. Document preparation takes 11 days on average out of the 22 days required for exporting a container from Pakistan (Figure 7).

Inland transportation also suffers from a difference in cost and time when exporting and importing container from different cities. Cost is the lowest for Karachi and Hyderabad (Figure 8) because these cities have closer access to the sea. It costs 57 per cent more to import a container to Lahore than to Quetta.

To start a business in Pakistan, it requires 10 different procedures which on average consume 20 days to complete. In 2009-10, Rwanda stood out as a top reformer by reducing the procedures required for starting a business from eight to two documents, which helped simplify the start-up process from 14 days to only 3 days.

Figure 7: Pakistani Exporters Spend Most of Their Time on Paper Work

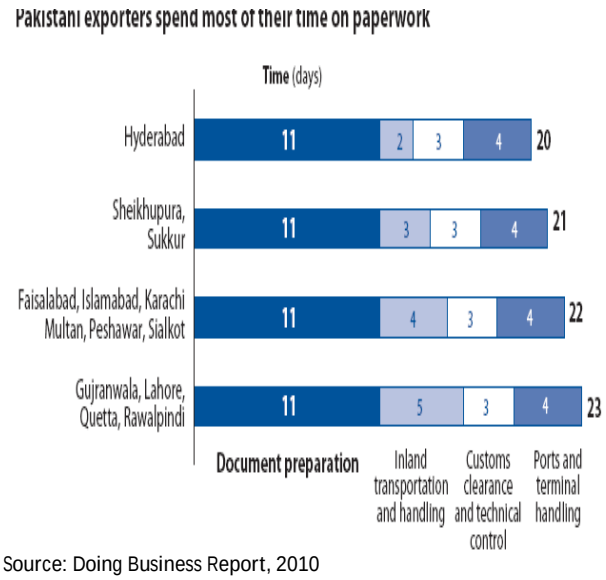
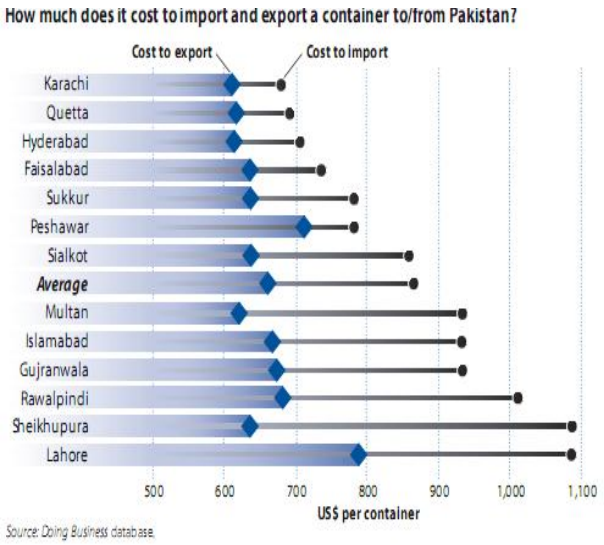


Figure 8: How Much Does it Cost to Import and Export a Container to/from Pakistan



Source: Doing Business Report, 2010

Youth with Unemployable Skills

Low level of broadband penetration constrains access to modern methods of networking to the youth and prevents them from enhancing their social and professional connectivity. Job portals, which signal and convey skills sought by employers, inform the youth about which skills to learn and acquire. Physical, professional and social connectivities between universities, entrepreneurs, trade associations, professional and certifying associations, and enterprises in different sectors are very low in Pakistan. There are virtually no trade shows and conferences where different parties could meet, learn and attend professional training courses and interact for mutual benefit.

[53] 'Doing Business 2010', The World Bank, 2010

Pakistan is ranked 92 out of 133 countries in university-industry linkages index, much lower than the ranks of China and India, which are at 23rd and 46th position respectively.[54] Due to the weak university-industry-professional nexus in Pakistan, the youth is not able to acquire the skills sought by employers. Thus, the enterprises and universities are not able to compete effectively in the global markets and the government is not able to deliver services, efficiently.

Issues Faced in Financing of Infrastructure Projects

With increasing cost of construction, frequent occurrence of large scale natural disasters, and ongoing fight against insurgents, it has become impossible for the government to continue financing infrastructure projects. This can be seen from the recent reductions in the budget of Public Sector Development Projects (PSDP). Historically, PSDP has been the main source of funds in addition to foreign loans. Much of the international aid, however, was directed towards social sector projects which were arguably of temporary humanitarian relief.

To deal with these challenging circumstances, IMF has highlighted some key issues which need to be addressed when undertaking any infrastructure development project. These include analysing type, nature and amount of investment that can offer the biggest boost to growth, the means to finance the investment and the profile of the intended recipients. Without looking at these issues, there remains a much higher probability that the project will get delayed to an extent that it no longer remains needed. If the project does get completed, long delays raise the cost to an extent that cost benefit analysis done when the project was conceived is no longer valid. While the West still figures out how to fully recover from the financial crisis of 2007, it has become difficult for the developed world to finance projects in developing countries. This has left countries like Pakistan with no other option than to initiate reform aimed at utilising its own full strength.

The type and nature of investments that offer the biggest boost to growth have resulted in the establishment of National Trade Corridor Management Unit (NTCMU) to come up with plans aimed at improving trade-related infrastructure facilities with the goal of making Pakistan a regional trade hub. However, NTCMU is still to come up with any coordinated plan. Projects are still being approved in isolation with no broader vision of achieving sustainable growth. Ideally, a strategy should have been prepared by now and NTCMU should have moved on towards implementation stage.

Similarly, there is a need for improving PC-I with respect to involving private sector in development projects. PC-1 is a project proposal which contains cost estimates, technical description, cash flow estimation etc. PC-I documents expect the project to be fully financed from PSDP. Instead, the project should be floated to the private sector to undertake with full ownership and if not accepted by the private sector only then the government should be approached for funding. Adding another section on 'PPP (public private partnership) Option Analysis' in the PC-I document, as suggested by the Infrastructure Management Unit (IMU), would be a good idea.

[54] 'The Global Information Technology Report 2009-2010', The World Economic Forum, 2010.

The IMU has also done an extensive and useful study on constraints to private sector investment in infrastructure. But much needs to be done in removing these constraints. Some of the key constraints highlighted by the study related to 'procurement laws' and 'procurement processes'.[55] According to the study the current procurement laws do not include a requirement for the public body to consider infrastructure service delivery through the private sector. It also criticises the procurement process for being too centralised. All procurement decisions for a value as low as USD 4-5 million are made at the highest level of the Government. This is the case even for projects which are 100 per cent PPP and will not require any public expenditure. The report states 'Project-to-project approval culture at the highest Government level is inefficient, leads to disempowerment of the public implementing bodies that undertake primary analysis to prioritise projects, and opens the door for considerations that are extraneous to the primary objective of efficient allocation among competing demands for limited resources. The public bodies created by statute or under notifications remain constrained by this 'case-to-case' approval culture.

Despite considerable realisation and wide consensus, Pakistan is still to come up with a detailed and clear framework on PPP. This is mainly because the direction, content and the responsibility for the PPP framework still remains unsettled. For example, at municipal level, legal confusions between the role of local and provincial governments is undermining the PPP projects. The IMU has identified restriction on local governments against financing development projects through user fees, as a major constraint to PPP at municipal level. Knowing that various amendments are being considered in local government law at provincial levels, these issues can be revisited with the approach of promoting private sector in infrastructure projects.

Also, land acquisition laws are currently in conflict with international norms and therefore need to be brought in line. It is one of the major issues and has often resulted in delays and sometimes even leads to the abandonment of the project due to political interest. In addition to introducing new PPP framework, IMU study also highlights the existing laws which discourage private sector participation– one of them being the NHA Act which does not contain any requirement for PPP Option Analysis. The NHA Act also does not empower assignment of toll receivables in favour of the private company executing the project. Another issue is that of competition with public sector construction. It is argued by private construction companies that lucrative projects are always given to public sector corporations in a non-transparent and discriminatory manner. Such attitude discourages growth of private sector firms and hence their ability to undertake projects which are spread thin over the time horizon.

The Infrastructure Project Development Facility (IPDF) has also come up with several studies which try to streamline the role of private sector in infrastructure development. The studies, although very much in line with IMU, speak on the issue of updating the PC-1 document in much more detail. For example the IPDF states 'The line ministries should assess whether the project can be funded through privatisation or Public Private Partnership. Only once the line ministries and government departments have proved that the project is not feasible for private sector participation, should the PC-1 for that project be formulated for PSDP funding'.

The Government of Pakistan has passed 'Pakistan Policy on Public Private Partnership' in 2010 to chart down a basic framework. However, the above mentioned issues related to the private sector participation in infrastructure development still need to be resolved.

[55] 'Constraints to Private Sector Investment in Infrastructure', Infrastructure Management Unit, Planning Commission, Government of Pakistan, 2007

Reforms

Promoting Public-Private Partnership (PPP) in Infrastructure Development

There is need for improving PC-I with respect to involving private sector in financing infrastructure projects. It should be made sure that first the project is floated to the private sector to undertake with full ownership and if not successful only then the government is approached for funding. Another section on 'PPP Option Analysis' in the PC-I document, as suggested by the IMU, can be a good addition in this direction.

Similar analysis is required to be made part of NHA Act which does not contain any such requirement and therefore discourages private sector participation. NHA Act also does not empower assignment of toll receivable in favour of the private project company executing the project. Such a requirement has been very detrimental to fast track completion of infrastructure projects and has in many cases deprived Pakistan of possible foreign investment.

Procurement laws and processes also need to be simplified and made more investment friendly. In this regard, procurement laws should require that the public body first consider infrastructure service delivery through the private sector before it steps in. Procurement processes should also be decentralised. All procurement decisions which are 100 per cent based on PPP and do not require any sovereign guarantee should not require any approval from the highest level of the Government (Federal or Provincial). Restriction on local governments against financing development projects through user charges or fees should also be reviewed by respective provinces.

Land acquisition laws (of 1894) are currently in conflict with international norms and ought to be reviewed and brought in line with international best practices. For this purpose, an evaluation process under the acquisition laws should be initiated to take into account adverse social impact, loss of assets, businesses and income. This is one of the major issues which have often resulted in delays and sometimes even to project abandonment.

Improving Public Transport Network

Instead of seeing road construction as the only solution to traffic jams, an efficient inter- and intra-city transport system must be introduced. Most large cities of the world use some form of rail for effective public transport. The Karachi Circular Railway (KCR) was a popular public transport system during the

1970s with about 0.3 million daily passengers.[56] KCR facilitated the urban poor as well as middle-income population. However, deterioration of infrastructure, stations and crossings led to reduction in the number of commuters. The number of daily trips of KCR decreased from 104 during 1970s to only one in 1999.[57] By running a train-based public transport system, commuting times can be reduced to facilitate commerce and commercial activity, as well as increase the productivity of labour and other resources.

Public transport in the cities has also collapsed as the public sector (particularly provincial governments) completely withdrew from investment, management and operation in public transport, both within and between cities, after mid-1990s. Under franchise arrangements, private companies operated bus systems in a few major cities for some time but for lack of financing and infrastructure, such as bus terminals, bus depots, workshops etc., these systems are now reduced to about 1200 operational buses in five major cities of Punjab. The vacuum has been filled by poor quality and generally unfit 25-seater Mazda, 18-seater Toyota and 12-seater Suzuki that are primarily owned by small operators. Better regulation of road based public transport is required. It would involve realignment of existing routes by bringing major avenues within cities into the public transport network; auctioning them to private sector; ensuring appropriate number of buses for every route; declaring the extreme left lane on major avenues as bus-only lane; and willingness by insurance companies to provide coverage for new entrants against the hostility of existing mafia.

Box 7 – Public Transport Model for Islamabad

Lowson's model offers rough and quick sketches of a transport scenario for a grid city. It is easy to apply the model to Islamabad, which is a grid city. Figure 9(a) shows a map of Islamabad with 11 possible routes (round-trips) in blue and red lines. Each route traverses two or more sectors, where each sector is a square of length two kilometres. Thus, shortest route is between two adjacent sectors, totalling eight kilometres and longest route would traverse six sectors, totalling 24 kilometres. According to Lawson's model, highest journey speed of 15 km/hr is attained when a bus makes a stop after every 0.5 km.

Thus, it will take two minutes to cover 0.5 km (distance between two stops). Assuming that two buses maintain a distance of eight bus stops (which is four kilometres) between them, maximum waiting time at each bus stop will be 16 minutes. Three buses would be required on the shortest round trip and seven buses on the longest route. For the 11 routes, shown in chart 9(a) it is estimated that an average of six buses would be required per route. Thus the total number of buses required on all 11 routes would equal 66.

This estimation is a simple application based on some simple assumptions for the bus system. A more accurate estimate would consider: (a) demand on each route, especially during peak versus off-peak hours; (b) bus capacity; (c) traffic density (which again would depend on the hour of the day); (d) shapes of the routes (whether buses go back and forth on the same avenue or make zigzag circuits); and, (e) the number of signal lights and waiting time at the signal lights or crossings, on each route.

Figure 9(a)

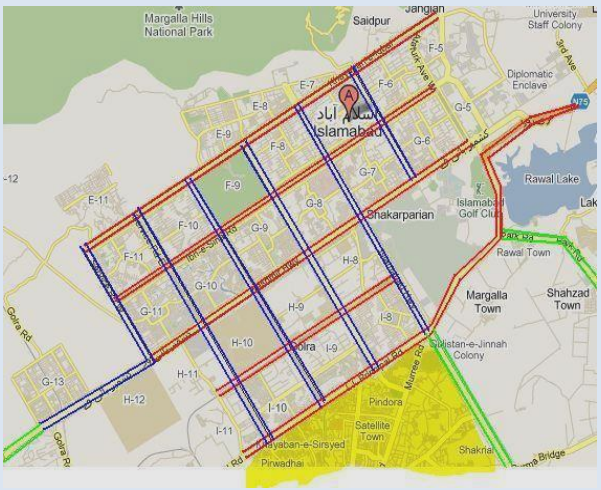
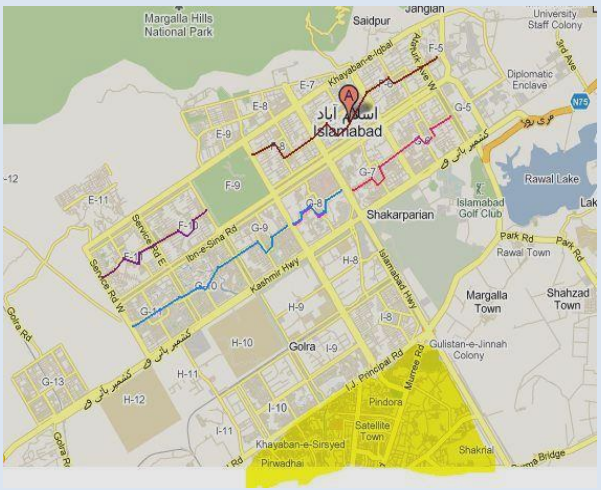


Figure 9(b)



Box 7 – Public Transport Model for Islamabad (contd.)

Such a model as explained above would allow passengers to get anywhere with just one transfer. Each bus stop at the intersection would also allow mobility in all four directions, except for bus stops at the outer corridor. Such a network will bring the bus travel time very close to time taken on a private car to cover the same distance. On the longest route (I-11 to F-5) it will take about an hour to reach from home to work.

To connect Islamabad with the suburban population, which is where most low income people working in Islamabad reside, three more routes have been shown with green lines in Figure 9(a). City routes are not fixed—they can be realigned and the total number of routes can be increased or decreased depending on demand. Figure 8 (b) shows possible alternate routes, connecting the centre point of some sectors, which could either replace the routes shown in Figure 8 (a) or be added to the number of routes.

To make this model work, Capital Development Authority (CDA) would have to auction the routes while ensuring that no bidder acquires too many routes to impede competition. Bidders must not be regulators or law enforcers. Also the conditions of buses required on various routes must be observed. Ticketing can also be introduced on bus stops or via e-ticketing to make boarding more efficient as done in Curitiba city, Brazil.

Government can also get into a joint venture with private sector which might help boost consumer confidence. Public private partnership structure and rules should be pre determined and designed in cooperation with a business enterprise council.

Source: Lowson, M. (2004). "Idealised models for public transport system," International Journal of Transport Management .

In a situation where rail-based city transport alone is seen as an expensive proposition and beyond the means of most local governments, a fully integrated rail and road based network that caters to the needs of Pakistan's rapidly growing urban population has become an unavoidable necessity. For such integration of transport network, strong regulatory institutions—in charge of maintaining transport infrastructure and regulating private transport operators—should be established at provincial and district level. Urban planners, apart from urban development, should also be responsible for providing appropriate space for transport infrastructure such as truck stands, bus terminals, bus depots, workshops, etc. and transport related activities like wholesale markets and warehousing. Effort should also be focused at implementing traffic management measures such as one-way traffic, foot paths and cycle ways, improved signals, intersection improvements, bus bays, road maintenance, road drainage, removal of encroachments etc., than on road building projects.

Creating Sophisticated Market for Railways

In 2008-09, it was estimated that Pakistan Railways employed 90,000 people and carried on average 65 million people annually. Indian Railways on the other hand employs 1.6 million people and carries 7.3 billion people annually. The ratio of passengers per employee for Pakistan Railways stands at 722 and

4562 for Indian Railways respectively. This is mainly due to PR losing market share to road transport. Indian Railways has not only retained market share but has also carried out some bold reforms during the last decade which have helped it to become extremely profitable.

Pakistan Railways is facing significant losses due to mismanagement, overstaffing, under-investment, poor maintenance and weak ticketing checks allowing travellers to ride the trains without purchasing tickets. Over time, there have also been political interventions in deciding which new routes to open and serve. Furthermore, PR is not allowed to charge its marginal cost and the tariffs have always been dictated by the federal government. With massive losses, Pakistan Railways needs to improve its operations. To reduce corruption, employees should receive performance-based remuneration. Time delays should be cut so that travelling by trains is an attractive option for both inter- and intra-city travel. Prices should be deregulated and Railways Corporation should be allowed to charge the marginal cost of servicing any route, or portion thereof, plus a mark-up which is agreed with the appropriate government regulator. To make sure that public interests are served and exploitive prices are punished, an independent regulatory body must be set up.

To improve management, partial privatisation should be encouraged. In India, partial privatisation of railways has given it a tremendous boost. Pakistan Railways too can adopt partial privatisation measures, e.g. outsourcing stations management, rail hospitals, allowing a group of companies to run their own container trains. This will increase private sector participation necessary for promoting competition. Also, when outsourcing station management, contracts should be based on total number of tickets sold— for example, some fraction of the revenue from a particular station could go to the management. This will incentivise the management to ensure that free-riding is minimal. It will also encourage management to provide better services, such as efficient ticketing system and better on board services. Gradually Pakistan Railways should be privatised, completely. There are two possible ways of doing it. One, through separation of infrastructure (unbundling) and secondly, by privatizing regional railways while allowing them to remain vertically integrated. Case studies supporting the two restructuring scenarios are discussed in Box 8.

Box 8 – Case Studies on Railways Restructuring

Japan: In Japan privatisation of the former state-owned railway, Japan National Railway (JNR), took the final form of public stock offerings. Privatisation was preceded by restructuring JNR into seven separate companies—six regional passenger railways and one national freight railway. The reform process took 10 years, from the time that it was recognised that radical restructuring was needed until the first of the JNR successor companies was offered to the public.

Sweden: Swedish state railways were separated into two activity centres. One centre became the state-owned rail operating company, Statens Järnvägar (SJ). At this writing SJ held a monopoly for freight transport over the entire network and for passenger services over the main line network. The second centre is Banverket (BV), the National Rail Administration. BV is responsible for providing and maintaining the country's railway infrastructure.

United Kingdom: Reorganisation of British Railways defines one extreme form of the railway structuring envelope. In the process of reorganisation, BR was unbundled. The discrete value-adding functions, such as car maintenance, terminal operations, locomotive maintenance, track repair, unit train operations, etc., which are vertically connected in most other railways, were separated into numerous relatively small-scale enterprises. Each enterprise was offered for sale as an operating franchise to private operators. Ownership and management responsibility for the main line infrastructure was also privatised.

United States of America: Railway restructuring in the United States has involved industry segmentation into two kinds of private carriers: (1) large inter-regional carriers and (2) small local carriers. Structural changes in the industry were initiated primarily by the private sector within a regulatory framework that was supportive of railway reorganisation. Since the liberalisation of economic regulation in 1980, the U.S. rail industry has transformed itself in the face of strong competition from other modes. A distinguishing aspect of this restructuring process has been the creation of hundreds of small railways.

Source: R Kopicki and L Thompson, 'Best Methods of Railway Restructuring and Privatisation', World Bank, CFS Discussion Paper Series, Number 111.

The various models discussed in Box 8 have their strengths and weaknesses which need to be understood before choosing the one that would be most effective in a given environment. A vertically integrated setup (such as in North American)—where an operator has control over all critical core functions—can serve consumers well through greater harmony between the infrastructure and services. However, if checks and balance are not put in place and transparency is not enforced, a vertically integrated operator will act like a monopoly. It can also constrain development of key rail corridors by restricting train paths.[58]

On the other hand, unbundling increases track utilisation (which is only 42 per cent in Pakistan) by giving access to small operators. This will also minimise individual operators' ability to restrict track utilisation. Furthermore, earnings of the track operating company will be solely dedicated to the maintenance and expansion of track infrastructure. However this could complicate operations, especially between operators and track providers. Although UK's experience with unbundling has been quite successful and improved the quality of service, it has been criticised by companies, passengers, and unions for being too complex.

[58] J Allen, 'Organisational Regimes for Commuter Rail: An International Perspective', Regional Transportation Agency, 2009.

Independent regulatory bodies should be established for Pakistan Rail transport with the sole responsibility of promoting consumer welfare. Private participation and greater competition will result in greater benefits if independent regulatory body exists.

Towards Becoming a Regional Hub of Aviation

Government's close cooperation with PIA is the main obstacle in ensuring competitive environment. Pakistan needs to introduce competition in its aviation industry. This is essential to improve efficiency and to compete better, internationally. With world class airlines, such as Emirates and Singapore Airlines (SAL), operating in the same region, it is important for Pakistan to try and match up to their standards. It must be stated that although several successful airlines (such as SAL) are government owned, such countries have efficient governance structures in place which discourage red-tape and rent seeking. In Pakistan, which has a deep rooted culture of rent seeking, a competitive market which may involve public-private partnerships can be a more suitable way to achieve higher standards.

Pakistan's current regulatory regime is too restrictive and gives airports of regional countries a significant advantage. A level playing field must be created in the aviation sector, too. In this regard, the rights to carry passengers or cargo from a second country to a third country by stopping in one's own country (6th freedom rights) should be introduced. This will make Pakistan more attractive for potential investors and facilitate current players by increasing the profitability of the sector. SAL and other airlines use this right extensively to fly passengers between Europe and Australasia. Given Pakistan's strategic location, this can significantly improve connectivity between Central Asia, Africa, Europe and Australasia routes. On similar lines, the design of new Islamabad airport (under construction) must see itself as a hub catering to the Central Asian travellers' requirements.

While effort is made to become competitive at regional level, competition must also be encouraged at domestic level. Thus, the Civil Aviation Authority (CAA) should pursue 'open sky' policy in both passenger and cargo traffic—i.e. all airlines should be free to operate on routes of their choice. Routes which are congested should be auctioned instead of giving a preferential treatment to PIA. Similarly on international routes where 'open sky' or 'multiple designations of airlines' is not available, routes should be auctioned to all airlines, including the national carrier in a transparent manner.

Currently, landing rights fee and timing slots allocated to airlines by the CAA are favoured towards PIA. CAA, by the nature of its mandate, should not have control over any assets which makes it a player in the aviation industry. However, all the national airports are under its control. Therefore, to create a level playing field for all market players, airports should be gradually privatised. This will not only reduce the fees through healthy competition between airports but will also improve overall efficiency by improving check-in procedures, flight management, and provision of modern facilities. Under the revised mandate, CAA, in addition to other regulatory responsibilities, will also be responsible for ensuring that the efficiency gains are passed on to the users.

Improving Trade Facilities through Adoption of ICT

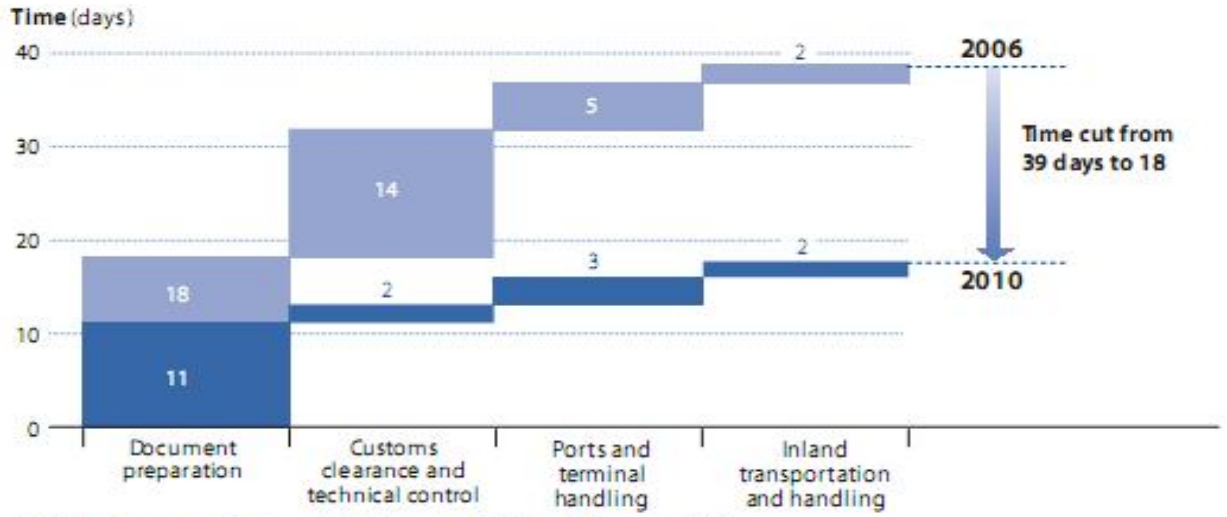
To further facilitate trade activities, electronic customs declaration form should be adopted. The Form is already available and Pakistan can simply consolidate other information onto the Form, in line with integrated systems of France or Hong Kong.[59] This would significantly reduce the number of documents

[59] 'Doing Business 2010', The World Bank, 2010

required for export and import purposes. Pakistan Customs Computerised System, which was piloted in Karachi (Figure 10), is yet to be rolled out throughout the country's custom posts. Its successful implementation will provide a comprehensive, user-friendly and interconnected electronic data interchange system.

Sialkot Dry Port Trust model should be adopted for all national dry ports to allow traders to clear their goods in their cities. Most of the goods are currently sent to the seaport for clearance purpose mainly due to longer clearance times, insufficient capacity, and higher costs at the existing dry ports.

Figure 10: Time Needed to Import was reduced in Karachi



Note: The reforms were implemented between April 2006 and December 2009.
Source: *Doing Business* database.

Incentivising ICT Services through Provision of Local Applications

Despite the high growth rate of broadband penetration in urban areas, rural areas largely remain untouched by broadband due to insufficient demand. Government can play a significant role in creating rural-urban demand for broadband services by incentivising its use. The term 'Incentivising' here means provision of services – in other words 'software applications' – which are of direct relevance to people's daily requirements. Examples of few services are given in Box 9. Some of these services not only introduce farmers to new and more efficient methods of cultivation but also improve the marketability of agricultural output and other goods made in rural areas. However, it must be remembered that as per the New Growth Strategy prepared by the Planning Commission, the role of the government is only of a facilitator. Facilitation can be in the form of increasing awareness regarding such possibilities or reducing the regulatory burden to stimulate the development process.

Box 9 – Innovation in Mobile Phone Usage

Village phone model: In many African rural areas, mobile phones have proved a great source of livelihood, especially among women. Women in villages buy mobile phones and sell calls around the neighbourhood. The portability of the mobile phones makes this business flourish in areas where accessibility was denied before. In Bangladesh, this was promoted by the Grameen Phone, a subsidiary of the Grameen Bank and Telenor, which gives out microfinance for purchasing handsets. They gave loans to women in rural areas to buy a mobile phone to sell calls. This system has also been popularised in Afghanistan.

Cell-bazaar: Another innovative idea in Bangladesh is using mobile phones as markets. With the cell bazaar, people can list the items they are selling and the buyers can access these items and decide whether to buy them. This is important for many small businesses who cannot afford to advertise in the mainstream media.

Information: In Uganda, mobile phones have become an instrument used by farmers to get information about the weather and other factors that can affect crop yields. Farmers' Friend is a service that is accessible through text and can provide answers to questions asked by farmers. In some situations, people call back in response to specific queries. While television has been quite active in promoting farmer and general awareness, the use of cell phones can help provide awareness to remote areas. Mobile phones can be used to promote women empowerment, health and education information to enhance the social development of rural and remote areas.

Mobile cash: In many countries, mobile cash is thriving. Mobile money schemes allow transfer of money through cell phones. This is done by mobile phone top-ups or pre-paid vouchers as cash, as compared to transferring money through people. Sometimes, this can be done through transferring airtime directly and then converting that into money through shopkeepers and retailers. G-cash and Smart Money in the Philippines, Wizzit in South Africa, Celpay in Zambia and M-PESA in Kenya are examples mobile money schemes that are succeeding in this venture. In some countries, it has become popular enough to be used as an alternative to cash where it can be used to pay school fees and taxi fares.

In Bangladesh, similar to Grameen Phone, Grameenphone internet was started to facilitate internet usage on-the-go in hard-to-reach areas. Mobile phones are an already established way to introduce internet to people without incurring any substantial additional cost. With mobile phone, internet can be made available in rural areas which will ultimately increase income and stimulate growth. Similar to the village-phone model, a village-internet model can also be introduced.

In the e-government evolution, Pakistan stands at the beginning of the middle stage where government institutions provide significant information and limited services using their websites. Recently, FBR has taken some key initiatives to provide options for paying taxes online. By providing more services online, government can incentivise broadband usage by reducing waiting time, travel costs and administrative hassle.

Furthermore, Electronic Signature Act should be passed to provide legal cover for the use of digital IDs, signature certificates and electronic authentication and verification. The proposed law should ensure that the electronic signature is uniquely linked to the signatory, capable of identifying the signatory, created using means that the signatory can keep solely under personal control, linked to the data to which it relates in such a manner that any subsequent change of data is detectable. However, it must also be recognised that ensuring all this must not de-incentivise its usage thus forcing people to stick to traditional ways. Such Act will promote use of Internet and Intranet e-mail for inter-office

communication, both at horizontal and vertical levels, which will ultimately replace the physical file system with a computer-based file system. Government of India passed a similar act in 2000 which addressed issues such as legal recognition of electronic documents, legal recognition of digital signatures, offences and contraventions, justice dispensation systems for cybercrimes (Information Technology Act 2000[60]), etc.

To promote right skills, government should also provide ICT infrastructure to rural schools. IT and Telecommunications Division can approach IT companies in this regard to encourage them in undertaking the responsibility of providing IT training and infrastructure in government schools on voluntary basis. NGOs and private enterprises can often rationalise investments in establishing training institutes and internet centres in rural towns to create rural demand. Wireless technology can be used for areas which are otherwise inaccessible.

Open Domestic Talent Market

In the past decade, Pakistan has relied heavily on building new universities as a means of producing high skilled human capital. However, very little attention was given to developing university faculties. As a result, several universities have sprung up in various cities but very few of their graduates get job offers. Most of the few high quality students migrate to the developed countries in order to benefit from the higher rate of return on their human capital, by earning higher wages.

In order to improve the quality of human capital, including the university faculty, Pakistan must open its domestic talent market to global pool of talent (Box 10). Some steps have already been taken in this direction and foreign faculty is increasingly being welcomed to local universities. To promote this further, however, permission to allow researchers to hold joint appointments with international universities should also be considered. Pakistan must build on the steps already being taken and should gradually move towards opening other government departments to foreign recruitment.

[60] Government of India (2000), "Information Technology Act 2000," Ministry of Law, Justice and Company Affairs.

Box 10 – Open Domestic Talent Market

Like in the US and many other countries, the global market place should be used to attract professionals with advanced skills to Pakistan. Of course domestic residents will show a desire for the high end jobs and be prepared to work for a discount and not need compensation for moving costs as would be sought by professionals abroad. Bit like their richer counterparts, developing countries, too, should not be parochial, relying only on nationals, when it comes to filling key management and research positions. Instead they should open up all such positions to the global talent pool.

By thinking think in these terms, the emphasis moves from naïve ideas of curbing or taxing the 'brain drain' to managing the desired skill requirements at home. Human capital flight then becomes relevant only insofar as it takes away from the required skills at home. Rather than worry about who stays or who goes, we worry about measuring the required skills and how to get the SIP right in the economy. At the same time, by placing emphasis on the human capital requirements of the economy, and maintaining the analogy with physical or financial capital, Pakistan can move from retaining human capital of domestic origin to the existing practice in advanced countries of attracting the requisite skills from anywhere. This will make developing countries also active in the global market for human capital that is currently only accessed by advanced countries. For example, it is difficult to understand why the academic market is fully globalised in the richer countries, with them picking professors from all countries while in the poor countries it remains the monopoly of domestic residents? When governance skills are not widely available, why should governments not delve in the international market for skills? Moving the emphasis to SIP and Human Capital Management (HCM) will bring these issues to the forefront.

Source: Haque, N. (2005). *Brain Drain or Human Capital Flight*, Pakistan Institute of Development Economics (PIDE).

Recommendations: Connectivity Action Matrix

Recommendations to ensure rapid connectivity with regards to goals to be achieved, the following actions and institutional arrangements are proposed and discussed:

	Goal	Current Issues	Proposed Actions	Institutional arrangement required
1.	Promoting private sector participation in railways	Pakistan Railways ministry is self-regulating. This leads to biased policies which discourage private sector participation	Create an independent regulatory body, including in its members a private sector representative, having no financial stake in the market	Ordinance to be drafted by the Ministry of Law and promulgated by the President

	Goal	Current Issues	Proposed Actions	Institutional arrangement required
2.	Creating a sophisticated market for railways	Monopoly of Pakistan Railways	Pakistan Railways should be unbundled and then privatised: Rail Tracks and Signalling; Station Management; Rail services (Passenger and Freight)	To be undertaken by the Ministry of Railways; Restructuring unit within the Ministry of Finance
		Federal government intervention in the form of tariff regulation	Transfer the authority of determining tariffs to service operators	Summary of tariff deregulation to be prepared by the Ministry of Railways and presented before the ECC
3.	Reducing number of documents required for exporting and importing purposes	Laborious documentation procedures	Electronic Customs Declaration Form should be adopted	To be done by Customs' department of Federal Board of Revenue
4.	Comprehensive, user-friendly and interconnected electronic data interchange system	Too many documents to be filled manually	Pakistan Customs Computerised System should be rolled out on all through out the country's customs posts	To be done by Customs' department of Federal Board of Revenue
5.	Allowing traders to clear their goods in their cities	Long clearing times at the dry ports due to: inadequate infrastructure and poor custom facilities	Sialkot Dry Port trust model should be replicated on all dry ports	To be pursued by the Ministry of Commerce, Ministry of Communications and Ministry of Railways

	Goal	Current Issues	Proposed Actions	Institutional arrangement required
6.	Efficient urban transport for facilitating citizens and limiting increasing burden on road infrastructure	Inadequate and non-transparent route allocations; Poor quality controls; Lack of buses; No protection / insurance for new entrants against the hostility from existing mafia Inadequate regulatory controls	All routes should be realigned and auctioned in a transparent manner; Minimum number of buses on each route and their quality should be observed strictly; Provide bus/van insurance cover to new entrants against unexpected event—e.g., attacks during protests; Separate bus lane on 3 and more than 3 lane roads	Ministry of Transport (provincial level); City development authorities e.g. CDA, LDA, KDA etc.
7.	Competitive aviation sector	Close cooperation of government with PIA; Lengthy documentations; Unrealistic conditions; Biased route/slot allocations	Domestic and International routes should be auctioned; Documentation procedure should be reduced; Maximum time limit for responding to various applications; Eliminate requirement of maintaining minimum financial capital before investing; Privatisation of national airports.	To be undertaken by Civil Aviation Authority

	Goal	Current Issues	Proposed Actions	Institutional arrangement required
8.	Making international routes economically feasible for national airlines	Less demand for travel to Africa, Central Asia, South East Asia	Introduce 6th Freedom Rights. It allows airlines to carry passengers from one country to another while making a stop in its own country	To be proposed by the Civil Aviation Authority and approved by the ECC
9.	Promoting e-government to offer more online services	Poor ICT skills within government departments; No legal cover for Digital IDs;	ICT training should be made compulsory for government employees; All departments should make their websites more active by uploading all project details; Back office of each department should be automated to bring all the information online and enhance inter departmental sharing; Electronic Signature Act should be passed to provide legal cover to the use of Digital IDs, Signature certificates and electronic authentication	All government departments with help from the Ministry of Information Technology; Act to be prepared by the Ministry of Information Technology and Pakistan Telecommunication Authority

	Goal	Current Issues	Proposed Actions	Institutional arrangement required
10.	Promoting private sector investment in infrastructure development	No requirement of involving private sector in following documents: PC-1; NHA Act etc. Restrictions of local government to finance development projects Improper procurement law and processes Land acquisition laws in conflict with international norms	Introducing 'PPP Option Analysis' in PC-1 and NHA Act Reviewing restrictions on local governments in local bodies act Amending procurement laws; making it mandatory for public body to consider infrastructure service delivery through the private sector. Decentralise procurement processes. Bring land acquisition laws in line with international best practices	Planning Commission; NHA; ECC Provincial Governments Ministry of Law; Respective bodies; ECC Ministry of Law
11.	Promoting ICT skills within rural communities	Poor ICT infrastructure; No ICT labs in most of government owned rural schools; Lack of awareness;	ICT infrastructure should be provided to rural schools along with skilled training staff (e.g. Punjab government model); Internet centres-cum-training institutes should be established in rural town centres to facilitate people through effective use of internet and spread awareness	Ministry of Information Technology should encourage ICT firms to take up such projects on voluntary basis; Ministry of Information and Technology should also arrange appropriate space in corroboration with rural governments for interested firms

	Goal	Current Issues	Proposed Actions	Institutional arrangement required
12.	Flourishing and innovative telecom sector		Encourage PTA for its progressive policies and facilitate its actions by removing hurdles in their implementation	

Appendix 1

Suppose persons A, B and C wish to arrive in London. A is in Islamabad, B in Delhi and C in Beijing. All three must leave on 20th October, 2010 and return on 27th of October, 2010.

Cheapest fare that A could get was PKR 71,550. Actual flight time was 8 hours for a direct flight but the total travel time varies between 12 to 26 hours, depending on the route and connecting flights.

Cheapest fare that B could get was PKR 65,070 (converted from Indian rupees), despite longer distance from Delhi to London. Total flight time with connecting flights is approximately the same as from Islamabad, with only an hour more for a direct flight.

Cost (in PKR) per kilometre was PKR 11.36 for person A, PKR 9.68 for person B and, PKR 8.77 for person C.

Appendix 2

Survey Analysis

A survey was conducted for this study to get first hand experience of citizens' problems. Out of 120 surveys distributed to various universities, engineering firms and government agencies located in either Islamabad or Rawalpindi, 83 per cent response rate was achieved. Targeting universities provided with easy access to youth belonging to different areas of Pakistan and therefore helped in significantly eliminating the sample bias problem.

In the sample, 52 per cent of the respondents belong to the age group of 21-25 years followed by 30 per cent from the age group of 26 and above. Remaining 18 per cent are between 17-20 years of age. Similarly, 38 per cent are fully employed including 1 per cent unpaid employment, 58 per cent are students while 4 per cent are both student and employed.

Public Transport

Question: How often do you use public transport facility?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	26	26.0	26.0	26.0
	Once or twice a week	15	15.0	15.0	41.0
	Once in two weeks	19	19.0	19.0	60.0
	Once a month	19	19.0	19.0	79.0
	Never	21	21.0	21.0	100.0
	Total	100	100.0	100.0	

It was found that only 26 per cent of the respondents use public transport on daily basis. However, there is considerable demand which is visible from 41 per cent respondents using it at least once or twice a week and 60 per cent using it at least once in two weeks. On the other hand, only 21 per cent respondents said they never use public transport.

Main problems faced while commuting are quality and lack of transport. 51 per cent reported that they think quality is the major issue while 36 per cent view it to be lack of transport. Of the female respondents, many reasoned security-related issues to be the main reason for their reluctance to travel on buses. On the contrary, only 13 per cent reported higher prices to be their major concern. This highlights that currently insufficient routes are being served with inadequate number of buses. It, therefore, makes it necessary for the regulators to realign existing routes and ensure minimum number of buses per route.

Question: Problems faced while commuting via public transport?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lack of transport(long delays)	36	36.0	36.0	36.0
	High prices/fares	13	13.0	13.0	49.0
	Quality of transport	51	51.0	51.0	100.0
	Total	100	100.0	100.0	

Limitations: Sample only covers those who are either students or are in full time employment. Those who are either not employed or are involved in day labour should be studied in detail as they have a higher probability of travelling via public transport. This higher probability is mainly due to their low income levels which do not allow them to own a mode of transport.

Railways

Problems facing rail travel are also very similar but of greater magnitude. Almost all the participants complained of poor services. However, 55 per cent thought of it as a major problem while 16 per cent opted for long delays. It was found that 57 per cent of the sample had never travelled via rail. Out of the university students, who represent the newer generation, only 36 per cent had ever used railways. This is again due to poor services and long delays which 78 per cent of all the students considered to be their immediate issues.

Question: How often do you use railways as mode of transport?

	At least once a week	Once in two weeks	Once in a month	Once every six months	Once a year	Never	Total
Employed	0	0	3	10	5	19	37
Not paid	0	0	0	0	0	1	1

student	1	1	5	10	4	37	58
Working student	0	0	0	2	2	0	4
Total	1	1	8	22	11	57	100

Question: Why do you not travel via Railways?

	Rail Station Far from Residence	Long Delays	Poor quality	Take more time than bus	Total
Frequency	14	16	55	15	100

Limitations: Given that 57 per cent of the sample has never used railways, it can be observed that much of the complaints are based on the perception of our respondents instead of their experience.

Aviation

Air travel is considered to be the most attractive mode of travel for long distances but is the least used due to higher prices. Only 36 per cent had ever experienced air travel and 86 per cent find it expensive. Of the employed class, 41 per cent use it at least once a year but this significantly goes down to 31 per cent for students.

Limitations: Air travel has always been an expensive mode of transport. Just because the respondents cannot afford an air ticket does not lead to any significant analysis. It will be more appropriate to link this question with the individual or family income levels.

What should we do with Public Sector Enterprises?

		Frequency	Cumulative Percent
Valid	Privatise completely	36	36.0
	Public-Private partnership	26	62.0
	Do not privatise but allow them to work on commercial basis	27	89.0
	Continue giving subsidy	5	94.0
	Dont know	6	100.0
	Total	100	

When asked 'how should we improve Pakistan Railways and Pakistan International Airline?' 36 per cent preferred privatisation over any other solution. 26 per cent were in favour of public-private partnership and 27 per cent want the government to run the affairs of these enterprises on commercial basis. Most importantly, only 5 per cent wanted the government to continue giving them subsidy. This is a major finding and is against the general perception of possible public anger against privatisation.

Youth

Another critical issue which deserves to be highlighted is limited role of universities in career counselling. Only 20 per cent of the students said that they received some job-related information from their respective universities. Out of those working, only 3 per cent received help from their educational institutions when looking for a job.

Limitation: It is not known if the respective university did offer career counselling and it was the respondent himself who decided not to avail it.

Use of Internet

Internet has come to the forefront in helping students looking for jobs. 29 per cent of the respondents find role of internet to be the most important in their job hunt. Newspapers, however, still play a lead role with their share of 31 per cent. Remaining 26 per cent prefer relying on their friends and family. Significant use of internet for this purpose, despite limited employment information being available online, provides the labour market with a much transparent platform which is all set to be fully exploited. Dedicated job portals along with online career counselling can play a significant role in ensuring efficient signalling. Use of Internet has also started to become visible in the professional spheres of people's life. 62 per cent of the respondents said that they mostly use internet for work or study purposes. This percentage is almost the same for both employed and students.

Social Capital

Questions related to the use of libraries were also asked. 62 per cent of the respondents stated that they use a library, however only 11 per cent used it everyday. 36 per cent of the respondents said that they use it once or twice every month. The reason for such high usage was merely because among respondents, 53 per cent were university students. Out of non-student respondents of age 26 and above, only 6 per cent responded positively to using a library. The major reason for not going to the library was poor management as 32 per cent of the respondents had stopped visiting libraries due to less variety of books and other facilities.

Question: How often do you use a library?

	Frequency	Cumulative Percent
Everyday	11	11.0
Once a week	16	27.0
Once or twice in a month	36	63.0
Once a year	7	70.0
Never	21	91.0
Dont know	9	100.0
Total	100	

Question: Why do you not use it?

	Frequency
Dont know where they are	28
No interest/use	13
Dont know how to use a library	2
Lack of quality	14
Dont know	4
Not enough novels	1
Total	62

Participants were also asked if amenities such as public parks, sports and recreation facilities, mosque, and health facilities existed near their residence. 82 per cent of the sample residing in various areas of

Islamabad and Rawalpindi had mosques near residence where as 69 per cent had public parks. However, only a small number of respondents had sports and recreation facilities.

Conclusion

Survey results are very much in line with the expectations and lend significant support to the reforms proposed.

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