Infrastructure Investment in Growth Markets

EXECUTIVE SUMMARY:

Accenture, a global management consulting, technology services and outsourcing company, provides expertise across all industries and business functions from corporations to local governments. The company’s Growth and Strategy unit, an internal strategy team, asked our capstone group to identify business opportunities in the transportation infrastructure space in four growth markets: (1) Australia (2) Brazil (3) India and (4) South Africa.

In doing so, we provided market insights on the economic, political and infrastructure context in each country. We also conducted a value chain analysis to identify the financing and bidding processes, projected infrastructure spend, key players involved and based our recommendations on these criteria. The following country profiles detail the infrastructure context in each market as well as our insights and recommendations:

1. AUSTRALIA

It is critical for transportation networks in Australia to expand in order to support a growing load in particular from the minerals boom increasing exports within the fast growing Asian region. Freight rail lines are the most pressing challenge although expansion is necessary for roads, ports, energy (power), water systems, telecommunications, storage and container handling as well. The Australian government is still a key player in this space. The government plays an initiator role for large Greenfield projects where investors are more cautious.

Infrastructure Context: Challenges:
The infrastructure context in Australia is marked by inadequate energy production, rail, airport, and telecommunications infrastructure to meet the increased demand. Expansion of the entire system is required to avoid congestion. However, a lack of coordinated planning hinders new projects. Therefore spending is not keeping up with the growth in the transit of goods. Some of the main challenges are that supply chains are “multi-modal” and “multi-user.” Indeed, many different stakeholders are involved. In addition, confusion with the involvement of multiple levels of government (federal, state, local) creates a complex investment environment. Since the government budget has reached its maximum capacity, there is a great need to raise private capital. However a supportive environment for private investment is lacking – projects need to provide adequate returns to investors.

In order to address the challenges, the Australian government and private players are looking for ways to maximize transport efficiency. This includes measures to separate freight and non-freight and taking advantage of technology solutions for example. Government reforms in planning and financing are underway to create simpler and better coordinated processes. Regulation reforms also lessen the burden on operators. Addressing the investment environment, the following focus areas have been set out: maximizing proceeds from privatization of assets, implementing user pays or value capture structures, improving innovation and risk sharing in Greenfield projects.

Case Study: The Moorebank Intermodal Freight Terminal
One specific ongoing project was analyzed to understand a transportation project’s lifecycle and start breaking down the ecosystem of players in this field. Through the case study, we identified four key stages for infrastructure projects: planning, financing, construction and operation & maintenance. By
mapping out the key players at each of these stages and the roles that they play, it was possible to identify a place for Accenture to explore new business opportunities and come up with the recommendations below.

**Final Recommendations:**
During this capstone we have identified several specific opportunities for Accenture:

**Public Sector: Planning and Financing Structures**
- Helping the government reform the policy and investment landscapes

**Advising at the Planning Stage**
- Conducting feasibility studies for greenfield and complex expansion projects
- Implementing new project structures such as PPP and user pay models

**Operations: Network Integration Solutions**
- Working with rail, port and terminal operators on technology solutions for optimizing the existing systems
- Integrating different nodes of the supply chains through real-time information, communication platforms and automation

2. BRAZIL

**Infrastructure Context:**
Brazil, a member of the BRIC acronym and key emerging market relies significantly on commodity exports to drive economic growth. Given its current economic climate—a falling GDP, slowed growth, currency devaluation and thus increased inflation, the country’s primary hope for economic recovery is through major structural investment. Brazil currently provides 80% of the world’s orange juice and exports 50% of global sugar supply—however, soybeans are now more expensive to transport than they are to produce! This startling fact highlights the years of underinvestment in Brazil’s infrastructure. Most commodities are transported via roads which due to heavy traffic congestion, structural inefficiencies and bottlenecking results in substantial delays. As a result, the government is looking to revitalize and properly integrate the nation’s freight lines. If successful in doing so, Brazil stands to reduce its overall shipping costs by 30%.

The government, through the Public-Private Partnerships model, has initiated important programs focused exclusively on improving logistics in the country. The Logistics Investment Program (LIP) is Brazil’s largest commitment to highways, railways, ports and airports to date—committing approximately USD $120bn to the program.

**Case Study: North-South & East-West Railway Integration**
Under the LIP, the government seeks to seamlessly connect Latin America’s largest railway network. The North-South and East-West railway integration will cost USD $45 billion, connecting 6,835 miles of track between 10-12 separate rail lines. The financing will be conducted through a PPP-model for each rail line awarding concessionaries through tariffs for a duration of 35 years.

This project represents an innovation within railway operations in Brazil by separating the exploitation of the railway from the provision of transport services. Therefore the concessionaire will be responsible for the construction and operation of each individual line and will own the right to exploit the rail by providing operation services to the users and collecting a tariff in return. In this case, Valec—a state-owned railway engineering and construction company will purchase the rights to the transport loads and operational capacity of the railway. Valec will also pay a tariff to the concessionaire and sublease parts of the rights use to other users. Given that this program was recently announced, information is not readily
available since this is an on-going process. However, with the information we have uncovered and by referring to previous projects, we have provided the following recommendations to our client:

Final Recommendations:

- **Consortium-Level Involvement:** Accenture has the capacity and expertise to provide technical implementation of signaling, communication systems and traffic control to each individual rail-line.

- **Network Integration:** On a more macro-level, we recommend Accenture take the role of integrating each individual rail-line within the system to standardize all operations for users, providers and regulators.

3. **INDIA**

**Case Study: Delhi Mumbai Industrial Corridor (DMIC)**

The Delhi Mumbai Industrial Corridor (DMIC) is a $90 billion project, which envisages creation of 24 manufacturing cities across 7 states over a period of 30-40 years. A special purpose entity, Delhi Mumbai Industrial Corridor Development Corporation (DMICDC) has been formed, and has the Government of India (GoI) (49% stake), Government of Japan (GoJ) (26% stake), and 2 other GoI entities (25% stake combined) as its stakeholders. The new cities will be located along the dedicated freight corridor that aims to connect the Indian capital Delhi to the commercial hub, Mumbai, slated for completion by 2018. The freight corridor is expected to reduce the transit time for goods from 14 days to just 14 hours. The major objective of the DMIC project is to increase the contribution of manufacturing to GDP from 15% presently to 25% by 2025 and thereby create significant employment opportunities, which will be required if India has to move its citizens from poverty into the middle class. The new cities will be governed by a command center and will use information technology extensively for real-time monitoring of energy, public safety, transport and logistics.

**Implementation Framework and Financing:**

DMIC follows a 4-tier implementation structure with the Apex authority chaired by the Finance Minister, the DMICDC, State level nodal agencies, and the City/node level Special Purpose Vehicle (SPV) and the project SPV. To begin with, the GoI has approved a financing of $3 billion and the GoJ $4.5 billion. The contribution from the respective state governments where the projects are located will be in the form of land. The loan from GoJ is a ‘tied loan’, which stipulates that 30% of the project cost be spent on goods and services from Japanese companies. The initial funding will be used to create trunk infrastructure after which the project hopes to attract private investments.

The project life cycle is broadly divided into 3 phases – planning, construction, operation and maintenance. ‘Master planners’ will handle the planning phase while ‘Program Manager for New Cities’ (PMNC) will handle the construction phase. The operation and maintenance will be the responsibility of the city.

**Recommendations and Opportunities:**

- **Information and Communications Technology**

As regards Accenture, significant opportunities exist in the Information Communications Technology (ICT) area. Firstly, ‘ICT Master Planner’ is being appointed for each city to develop the ICT master plan. CISCO and IBM have already secured such contracts. Secondly, ‘Master Systems Integrator’ (MSI) is being appointed for each city in order to carry out the physical execution of the ICT master plan. The definition and scope of both ICT Master Planners and MSI have been elaborated in the presentation. In addition, Accenture could also try for the role of PMNC by forming a consortium (as done by several others) in order to bridge the skill gap.
• **Upcoming Infrastructure Projects**

Significant opportunities also exist in the overall infrastructure space in India. One specific example is the ‘metro project’. 40 such projects are currently in various stages of planning, execution and operation/expansion. The financial outlay for 30 such projects is $30 billion. As regards Accenture, specific opportunities include Automatic Fare Collection (AFC) and Signaling and Telecom. Details of players who have been awarded such contracts have been included in the presentation. There are a few other industrial corridor projects similar to DMIC (though on a smaller scale) that are currently being developed in India including the Chennai-Bangalore Industrial Corridor, Bangalore-Mumbai Economic Corridor and Amritsar-Delhi-Kolkata Industrial Corridor.

**Political Considerations:**

Finally, India is currently in the midst of an important national election, the results of which will be known by mid-May. However, based on the trends, it seems quite clear that the main opposition party, the Bharatiya Janata Party (BJP), will be forming the government. The BJP, known to be pro-growth, has promised creation of 100 new cities and E-governance in its manifesto, which is likely to create significant opportunities for Accenture in the near future and beyond.

**4. SOUTH AFRICA**

Unlike for the three other markets selected for analysis, Accenture requested a thorough evaluation of the challenges and risk factors facing rail infrastructure initiatives in South Africa. Additionally, Accenture asked for some ideas regarding which entities and actors may be able to play a role in alleviating those challenges. The seven primary risk factors facing rail projects in South Africa are localization requirements, financing, approval processes, transparency concerns, cost overruns, and subdued ridership. These insights were drawn from an examination of recent and ongoing projects in South Africa.

**Localization Requirements:** Infrastructure projects relying heavily on local manufacturing / technical support may face delays due to existing constraints in the manufacturing industry and a shortage of skilled labor. This is particularly true of projects that require the construction of new local facilities and training of local workers. Key players to address these challenges include transaction advisors, PRASA, the Preferred Bidder, and the Industrialization Supplier Development Association – an organization specifically created by the government to link foreign suppliers of equipment to SOE’s with domestic companies.

**Financing:** PRASA (Passenger Rail Agency of South Africa) must engage, coordinate, and leverage private sources of financing to supplement public funding. Currently, PRASA’s revenues do not even cover operational expenses, and thus is entirely dependent on fiscal transfers to pursue capital improvements. Key players to address these challenges are the PPP Unit in the National Treasury, firms like Deloitte and Grant Thornton which have well development PPP advisory practices in South Africa, and regional development banks.

**Approval Processes:** Bureaucratic approval processes present risks to project timelines and contribute to an environment which deters initiation of new projects. Key players to address these challenges include the Presidential Infrastructure Coordinating Commission, created by the government expressly to coordinate stakeholders’ activities in executing infrastructure projects. The Draft Infrastructure Bill, currently in front of Congress, would drastically empower the PICC to expedite the approval processes relating to strategic infrastructure projects.
Transparency Concerns: Concern among foreign firms about corruption and fairness can threaten to undermine the integrity of bidding and procurement processes if not handled with transparency. Consequent legal actions present a significant risk to project timelines (Dudula’s legal action against PRASA serving as a useful example). Key players to address these challenges are the Transaction Advisors, PRASA, and the PICC all of whom can add layers of legitimacy to the bidder evaluation process.

Cost Overruns: Inability to control costs at the agency and project levels jeopardizes project timelines, while undermining PRASA’s case for funding / approval of future initiatives. Key players to address these challenges include PRASA’s budgeting and auditing functions, as well as the Ministry of Finance/National Treasury.

Subdued Ridership: Low levels of ridership poses a risk to PRASA’s overall financial viability, the economics of individual projects, and the basis for expanding operations. Key players to address these challenges include PRASA’s marketing function, and the original equipment manufacturers.

CONCLUDING INSIGHTS

Given the variety of case studies and diversity among markets, each project touched upon a few key themes referenced below:

Governments Need Assistance:
Multi-billion dollar transportation projects in these growth markets require involvement from multiple stakeholders:

- Conducting feasibility studies
- Executing government mandates
- Collecting bids and creating consortiums
- Financing through Public-Private Partnerships

Project Management:

- Performance monitoring
- Impact evaluations
- Adherence to timelines
- Budget management

Need for Integration:
- Extensive Network Integration needed
- Standardizing signaling and other technological components