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INDIAN RAILWAYS STATIONS REDEVELOPMENT

TRANSFORMING RAILWAYS AND CREATING WIN-WIN OPPORTUNITIES

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Indian Railways is the largest rail network in Asia with approximately 8,000 railway stations, 108,700 km rail kms, 11,000 trains running daily and over $26 billion in revenues. It is responsible for rail transport in India. In financial year 2015-16, Indian Railways carried over 8 billion passengers and over 1.1 billion tons of freight. Indian Railways is one of the largest employer in the world and had approximately 1.33 million employees on its rolls.

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JUNE 2017 | THE BOSTON CONSULTING GROUP

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FOREWORD

Revitalizing the entire Railway network, Indian Railways has taken up the ambitious Station Redevelopment program. Railway stations and adjoining areas will be redeveloped on Smart City lines for enhancing passenger amenities, easy access to stations, and enabling optimal utilization of railway land. This program is one of the biggest Transit Oriented Development project in the entire world.

The program is focused on developing smart ergonomic station designs for redeveloping 400 railway stations across the country. The iconic structures with state-of-art facilities will include helipad, green buildings, malls, medical facilities, multiplexes and other commercial units at the land that will be embarked by the Railways. We are creating world class infrastructure to become globally competitive. As a part of this initiative technology is playing a very pivotal role in extending scalability, accessibility and performance for future rail transportation growth.

I congratulate FICCI and BCG for preparing a comprehensive background paper covering many important areas related to Station Redevelopment. This report highlights the learnings from other parts of the world, various modes of station development being deployed by Indian Railways, program details of the first set of station available for bidding under PPP and learning on PPP opportunities and challenges, and finally key imperatives to make this program a successful one.

The SMART Railways conclave is held at an opportune time to gain better understanding of opportunities pertaining to projects / investments in the Railway Station Redevelopment program.

Shri Suresh Prabhakar Prabhu,
Hon'ble Minister for Railways
Government of India

EXECUTIVE SUMMARY

Indian Railways station redevelopment program is one of India's largest infrastructure programs. Indian Railways initially plans to redevelop 400 stations across 100 cities with approximately 2,700 acres of encroachment free land available for commercial development in multiple phases. The program has an outlay of over INR 1 Lakh crore. The successful execution of a program of this scale requires detailed execution roadmap, learnings from global and comparable programs, proper organization and governance structure, new and suitable capabilities, robust analysis and modelling, funding, and continuous interaction with large number of stakeholders. While the program will continue to evolve and incorporate innovations and feedback, the first set of stations are already in public domain for bidding. The objective of this report is to present multiple facets of station development initiative and to lay out the current and potential thinking about this program for all interested participants and stakeholders. The report covers an introduction to the program, learnings from other parts of the world, various modes of station development being deployed by the Indian Railways, program details of the first set of stations available for bidding under PPP (Public Private Partnership) and learning on PPP opportunities and challenges, and finally, key imperatives to make this program a successful one. Opinions of various stakeholders are also captured to provide a 360 degree view of the program. Highlights of these elements are mentioned below:

- Many Railway systems across the world have or are trying to redevelop and transform Railway stations. In addition to the passenger experience redeveloped stations also contribute to the revenue. Ancillary revenues contribute up to 20 percent of the total revenues in many Railways systems. Learnings from these models, therefore, are useful. This report covers few related examples such as Tokyo station, Deutsche Bahn's digital interventions for Railway stations, Melbourne's Southern Cross Station redevelopment through PPP and transformation journey of SNCF stations and learnings from these examples.

- The Indian Railways is taking many paths to achieve the station redevelopment goal. These include modified form of Swiss Challenge model (PPP), PPP through traditional model, collaboration with state governments, G2G arrangement, and collaboration with PSUs, Ministry of Defence (MoD), Ministry of Urban Development (MoUD), other ministries and agencies. Modified Swiss Challenge model is the selected mode for the first set of 23 stations, which have approximately 140 acres of commercial land available and more than 3.3 million footfalls daily. IRSDC (Indian Railway Station Development Corporation Limited) is redeveloping another 12 stations through traditional PPP and EPC (Engineering Procurement Construction) models. The report covers details of couple of these models and how they are envisaged to be implemented. High-level information on these 23 stations is also provided in the report.

- PPP programs and the challenges encompassing them have been studied in the past. The Indian Railways is pursuing PPP at a large scale through this program. This report highlights perspectives on making PPP work by highlighting learnings from many programs. The report also highlights various types of PPP variations that may be relevant for the Indian Railways for different type of stations.

- Successful execution of this program needs well-defined organization structure, capability building, funding, O&M (Operations and Maintenance) plan, fine tuned revenues and cost models, policy and phasing of stations proposed under redevelopment. The report highlights some of these areas.

- Each stakeholder is important in such a program and knowing their point of view can be helpful for right design and successful execution. The report presents the view of various stakeholders in the program including banks, and developers. The report concludes by summarizing key features of the program and elements required to prepare for successful long-term roll out of program.

INTRODUCTION

"Investment opens new pathways for development."

—Narendra Modi

The Indian Railways is one of the largest railway systems in the world and continues to be one of the main vehicles for the socio-economic development of the country. According to an article by Press Information Bureau of Government of India, a rail system is 6 times more energy efficient and 4 times more economical than a road system. Rail construction costs are approximately 6 times lower than road construction costs for comparable levels of traffic. The Indian Railways accounts for approximately one percent of the Gross National Product (GNP) of India and is the backbone of freight needs of the core sector. It also provides 6 percent of the total employment in the organized sector directly and an additional 2.5 percent indirectly[1].

The Indian Railways has achieved impressive business in both freight and passenger traffic. However, Indian economy is witnessing many changes like evolving government policies to push for renewable energy, new economic activities requiring shorter and responsive supply chains, and increased development in transportation across various sectors such as aviation, roads and shipping. Massive investments are now required to expand Railway infrastructure and make the Indian Railways a modern transportation vehicle to remain relevant in this changing landscape. Investments are required across all elements including capacity augmentation, de-bottlenecking, safety measures and passenger amenities. Capital and capabilities to manage many of these investments and projects are scarce. In this context, projects like redevelopment of Railway stations are unique. They provide an opportunity under PPP that leverages private capital and capabilities and provides good returns to Railways and develop one of their core assets—Railway stations.

Plan to Redevelop Railway Stations

One of the most ambitious and visible programs launched by Government of India and Ministry of Railways is redevelopment of Railway stations through PPP model. This would be done by exploiting the commercial development of spare Railways land and ploughing back the surplus for redevelopment of stations. The behemoth station redevelopment plan has an outlay of more than INR 1 lakh crore[2] offering opportunities to private sector players, both Indian and Foreign, to participate through various public-private partnership modes and to various government agencies. The salient features of the program are depicted in Exhibit 1.1.

Overall, Indian Railways has more than 8,000 stations, many of which it intends to redevelop to better standards and passengers' facilities. Currently, the stations are classified into

EXHIBIT 1.1 | Salient Features of Station Redevelopment Program



Source: Indian Railways.

seven categories based on annual earnings from passenger traffic. Of these, around 400 railway stations are classified as A1 and A category stations where passenger earnings are high due to their location in metros, important tourist destinations and pilgrimage centers and hence, are prioritized for redevelopment. The Railway Board has created a database for these 400 stations and has made it available on its website[3].

Real estate available at Railways stations, as shown in Exhibit 1.2 for one of the stations[4], is a key asset that the Railways plans to leverage to fund this journey. The 400 Railway stations, across 100 top cities of India, will be offering approximately 2,700 acres of prime encroachment free land for commercial development along with the Railway stations development.

In addition to A1 and A stations, Indian Railways has many other significant station assets. Prime among these stations are those located on commuter routes in metros. Railway stations like Churchgate and Chanakyapuri stations can offer once in a lifetime redevelopment opportunity. While the focus of this report is largely on A1 and A category stations as they have been initiated first in the program, Indian Railways intends to move comprehensively on all other stations through appropriate models.

Complete Redevelopment of 400 Stations to be Rolled Out in Multiple Phases

The Indian Railways plans to roll out the redevelopment program for these 400 stations in multiple phases with 23 stations in first phase, about 50 stations in second phase and remaining stations subsequently. The details and various features of first phase of 23 stations are covered later in the report.

The Indian Railways has set up the Indian Railway Stations Development Corporation Limited (IRSDC) as a specialized agency to anchor some of the redevelopment projects through EPC or PPP mode. The IRSDC is developing 12 stations[5] through Public Private Partnership (PPP) and through EPC models. The Indian Railways intend to speed up re-

EXHIBIT 1.2 | Available Site for Commercial Development at Bengaluru Cantonment Station along with Pictures of Surroundings

Bengaluru Railway Station



View 1 of the site for commercial development



Adjacent road to the station



View 2 of the site for commercial development



Source: Indian Railways.

development projects for the 400 A1 and A category stations and is involving multiple agencies including all Zonal Railways. As announced in Rail Budget 2015-16, the stations will be opened for redevelopment on "as is where is" basis.

Leasing of Land to Fund the Redevelopment Journey

As mentioned earlier in this chapter, the Indian Railways intends to lease out spare Railways land for a period of up to 45 years to private entities for commercial development and use the surplus generated to modernize and maintain the railway stations. This will have dual benefits: new and modern amenities will be provided at railway stations, and world-class infrastructure will be developed in vicinity of these station. Some of the amenities envisaged include segregating arriving and departure streams of passengers, surface or basement parking, seamless accessibility for the specially abled, swipe ticket entry machines, well-lit circulating area, clean and modern washrooms, free and paid Wi-Fi options, pharmacy, ATMs, CCTV with integrated security system, medical facilities or standby ambulances, LED lights, ramps for differently abled, tourist information and facilitation center, F&B and entertainment facilities, hotels, lounges and conference facilities along with basic amenities. Some examples of visualized station buildings are provided in Exhibit 1.3.

The Indian Railways is also taking various steps like appointment of nodal officers with dedicated teams in each zone and partnerships with state governments for expedited clearances to ensure timely and hassle-free implementation of the program. All these steps should encourage the private sector to participate in the program enthusiastically.

NOTES

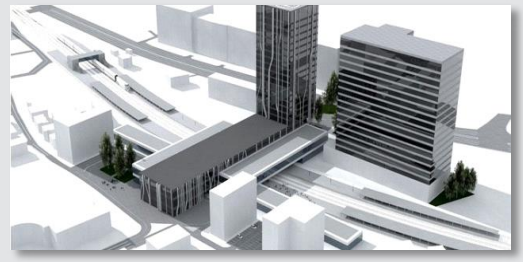
1. http://pib.nic.in/feature/fe0199/f1101991.html
2. For selected 400 stations only.
3. http://www.cr.indianrailways.gov.in/redevelopment_report.jsp
4. Complete list can be seen at http://www.indianrailways.gov.in/StationRedevelopment/stn_new/index.html

Exhibit 1.3 | Early and Artistic Impressions and Visualizations of Railway Stations

Habibganj (Bhopal)



Shivaji Nagar (Pune)



Bijwasan



New Delhi



Source: Indian Railways.

5. Amritsar (Punjab), Anand Vihar, Byappanahalli (Bangalore), Bijwasan, Gandhinagar, Gandhi Nagar (Jaipur), Gwalior, Habibganj (Bhopal), Nagpur, Shivaji Nagar (Pune), SAS Nagar (Mohali) and Surat

STATION REDEVELOPMENT—A GLOBAL PHENOMENON

"A developed country is not a place where the poor have cars, it's where the rich ride public transportation."

— Mayor of Bogotá

RAILWAYS AROUND THE GLOBE have embarked on large-scale station transformation programs such as Deutsche Bahn's program to digitize 5400+ stations, SNCF's creation of an independent SBU to manage stations and privatization of different elements of 100+ stations by Trenitalia.

Many stations as shown in Exhibit 2.1 have become landmarks and a symbol of city's development.

Redeveloping a station is an arduous journey and consists of 12 key elements as depicted in Exhibit 2.2. Essential elements such as

EXHIBIT 2.1 | Few Landmark Railway Stations Around the Globe

Tokyo



Kings Cross, London



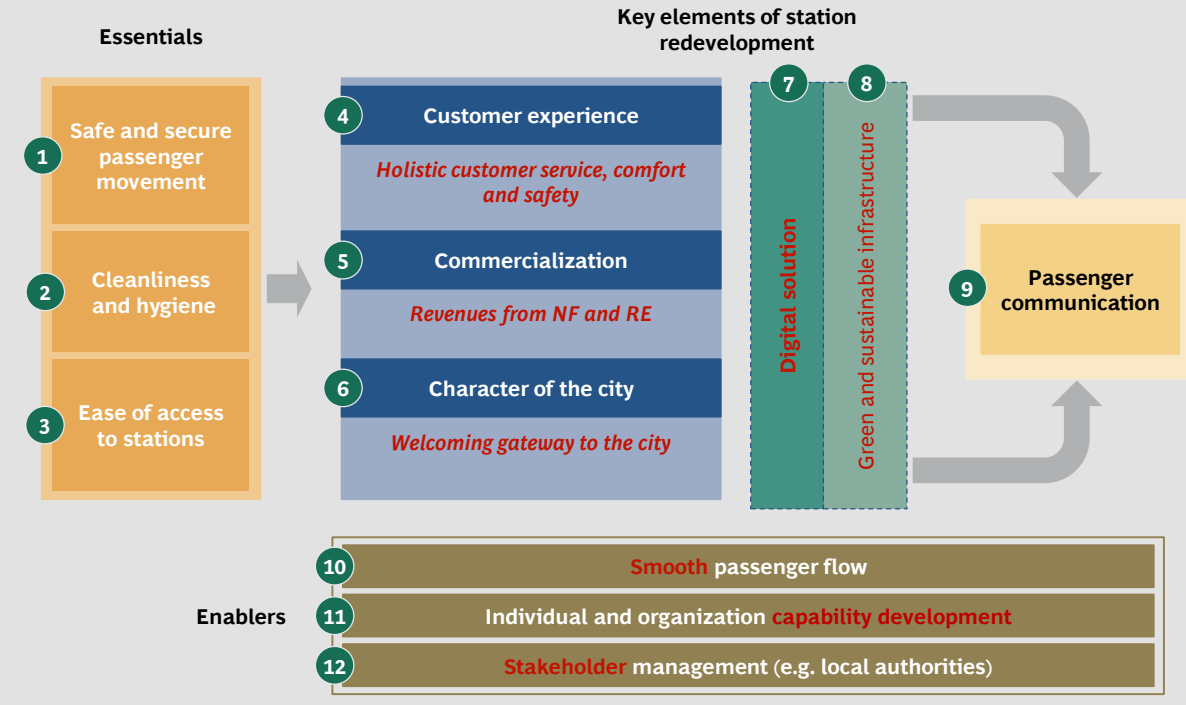
Southern Cross, Melbourne



Madrid



EXHIBIT 2.2 | 12-Key Elements of Station Redevelopment



Source: BCG analysis.

safety and security of passenger should be at the forefront of redevelopment plan. Moreover, the overall customer experience can be improved through smooth passenger flow, comfort and safety.

For smooth passenger flow, different types of traffic simulations can identify potential hotspots of pedestrian congestion at stations. Hence, the effective planning of space including location of retail centers can be done using such simulations enhancing the customer experience. As for safety, data analytics and artificial intelligence can be used to make stations more secure along with integrated security systems.

Digital solutions can also be used to enhance the passenger experience. Currently, most of the digital solutions are limited to travel planning and booking stages. However, as depicted in Exhibit 2.3, there is a large scope of using digital solutions at the time of arrival or departure of the passenger from station. Few Railway systems have successfully explored and implemented such solutions as illustrated through an example later in this chapter.

Another important element is to develop sustainable infrastructure. The infrastructure design should adhere to the green building concepts which implies alternate sources such as solar should be used for power and heating purposes. Energy efficient lights, waterless urinals and use of biodegradable material are few features of green buildings that can be deployed at stations.

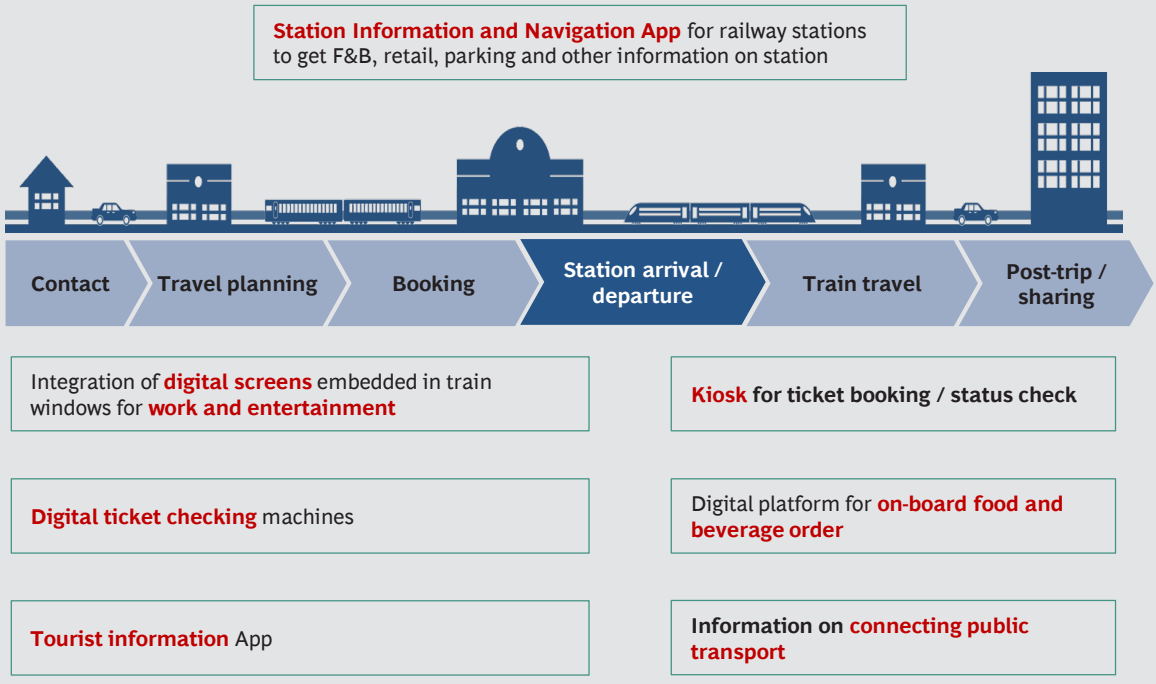
As mentioned earlier, stations worldwide have undergone many redevelopments and few of these elements can be explored for Indian Railways program.

We now present four studies. In addition to Deutsche Bahn and SNCF cases mentioned earlier in the chapter, Tokyo stations development and Public Private Partnership in case of Melbourne's Southern Cross station redevelopment are covered.

Tokyo Station Redevelopment

Tokyo Railway station has become an iconic landmark and an illustrative case for integrating modern facilities into existing spatial sys-

EXHIBIT 2.3 | New Digital Features at Station Arrival / Departure Stage



Source: BCG analysis.

tem. Underground walkways with variety of shopping and dining experiences along with hotels as depicted in Exhibit 2.4 makes it a complete transit oriented complex. Throughout the station, focus on customer service and customer experience is apparent. Large size sign boards, multiple ticketing kiosks, easy and quick approach to mainline platforms are indications of 'customer first' approach. The complex also provides luxury facilities like spas, saloons and hotels as depicted in Exhibit 2.5 to spend leisure time before boarding the train which results in extra revenue generation as well.

Redevelopment of Southern Cross Station in Melbourne through PPP

Redevelopment of Southern Cross Railway Station is an example of well conducted PPP arrangement. In 2002, Spencer Street Station Authority entered into a PPP agreement with a private consortium (City Nexus) to redevelop and manage the Southern Cross Railway station in Melbourne. The responsibility of developing the station including construction lied with private consortium. The concession period was 30 years after the completion of construction. After construction, the private entity was to receive quarterly payments to compensate for constructing, operating and insuring the station.

However, the construction got delayed by 1 year and private entity started operating in 2006 instead of 2005 as planned earlier. Since construction risks were clearly defined, a settlement for delay was agreed upon at $32 million. The station was made operational before the Common Wealth Games—the target milestone and became an iconic landmark as depicted in Exhibit 2.6.

SNCF's Stations Redevelopment

SNCF, France's national and state owned Railways Company after redeveloping Saint-Lazare Railway station in 2012 undertook an ambitious journey to redevelop 400+ stations with one of the objectives to double the non-fare revenue. It created a specific BU for redeveloping these stations.

Saint-Lazare occupies a total area of over 30,000 square meters and is the second busi-

EXHIBIT 2.4 | Tokyo Station Complex



EXHIBIT 2.5 | Tokyo Station Customer Service Remains Focus Touching All Steps of Journey Life Cycle



Sources: BCG analysis, Tokyo station website, Station Operator.

Exhibit 2.6 | Southern Cross Station, Melbourne



est station in Paris. The total redevelopment cost of the station was €250 Million[2]. Klépierre, a private entity had invested €160m to build three-storey shopping center beneath the historic terminus. The station is depicted in Exhibit 2.7. The station was opened in 2012 after redevelopment and its model was considered a success. Many stations are now planned to be redeveloped under the similar model by 2022.

One important element of these station redevelopment journeys is the role of public funding. Railways is largely considered a public good and needs public funding. PPP models reduce the volume of public funding required but a successful program at national level will still need both public and private funding

Deutsche Bahn's Digital Transformation

Deutsche Bahn (DB) has a large network of about 5400 railways stations with over €40 billion in annual revenues[1]. According to DB's CEO, digitization of stations being undertaken is one of the biggest change in the last 20 years. Robust planning for complete transformation is one of the key success factors of the program. Complete passenger journey as depicted in Exhibit 2.8 was considered to design the transformation program and to ensure that it gets embedded in the system and processes and becomes part of day-to-day activities.

Overall, DB identified three comprehensive pillars for digitization—customer centricity, operational excellence and innovative culture.

1. **Customer Centricity:** Neutral multi model platform was launched with integration of various modes of transportation making it a truly an integrated platform for customers.

2. **Operational Excellence:** Various tools were launched to achieve operational excellence. These include virtual planning of construction projects and maintenance using digital services. They have made DB's daily operations very efficient. This has had an equal impact on stations' operations too.

Exhibit 2.7 | Saint-Lazard Station Shopping Complex

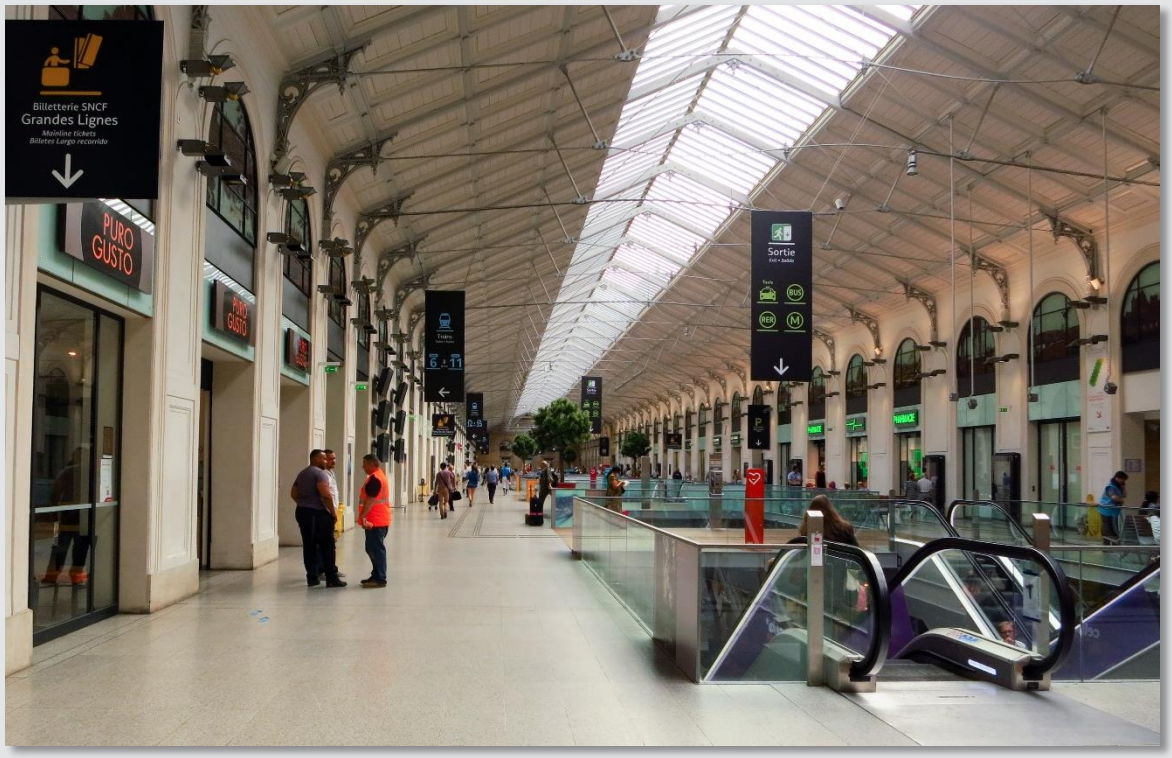
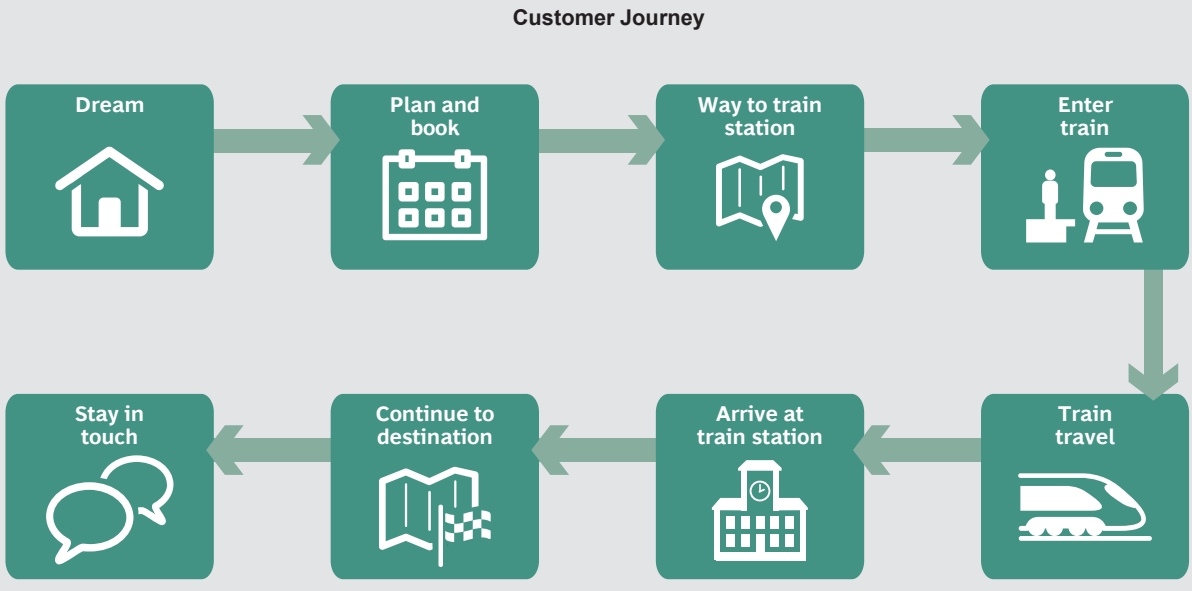


Exhibit 2.8 | Customer Lifetime Journey



Source: BCG analysis.

3. **Innovative Culture:** Establishment of d.lab for prototyping mobility services show how a company of this scale can bring innovative culture in the organization

Key Learnings

The Indian Railways has the benefit of learning from these four studies and many other experiences across the world. Gist of those learnings, few of which were highlighted in the chapter include the following.

1. Investment in stations development need to be undertaken in a planned and integrated manner. It takes time to develop the overall assets.

2. Customer interest has to be kept foremost in any design and redevelopment.

3. If done well, Railway stations can become an iconic landmark of the city.

4. Use of technology is both an imperative and an opportunity.

5. PPP is successful for assets which have high commercial viability.

6. Dispute resolution mechanisms and frameworks should be actively incorporated in agreements.

7. A mix of Public and Private funding is required to redevelop the overall portfolio of stations—Railways remains a public good.

8. A strong institutional setup with a dedicated organization to maintain and manage stations development is a global norm

9. Creation of a separate and specific entities assists in simplifying the transaction and making it attractive for private players

Notes

1. http://www.deutschebahn.com/en/group/ataglance/facts_figures.html

2. http://www.arepgroup.com/eng/file/pages_contents/projects/projects_classification/transport/file/paris_garesaint-lazare_coeur-de-gare_va_dp.pdf

MANY ROADS TO REDEVELOPMENT GOAL

"We should constantly develop, modernise (the system) and make it suitable for contemporary times."

— Suresh Prabhu
Hon'ble Minister for Railways

Stations redevelopment is a mega scale program. While the headlines capture 400 A1 and A category stations that are available to private developers and investors, the redevelopment of other stations is also being targeted through multiple pathways. Even for the projects open to private participation, many options are available on modalities. Being one of the largest transit oriented development program envisaged in the country and globally, Indian Railways needs to create and sustain interest of all stakeholders in the program. Apart from developers, there are multiple government and public sector entities which have aligned interests and capabilities and can partner in this program. Various state governments and various schemes of other central ministries may have synergies with this program. Association of these entities, in fact, will be a booster to the program as redevelopment efforts need significant alignment of different authorities, each having their own jurisdiction. Hence, Indian Railways is open to taking many roads to the common goal of stations redevelopment. Some of the paths that have been mentioned in press include a modified Swiss Challenge PPP model through Zonal Railways, PPP through IRSDC, EPC through IRSDC, G2G, working with marquee PSUs, collaboration with Ministry of Defence (MoD), Ministry of Urban Development (MoUD) and other ministries and agencies including collaboration with state governments.

While most of this chapter will focus on redevelopment opportunities open to private developers, it is pertinent to point several considerations that will interest government and other public entities in partnering with Indian Railways for this program. This is important as large number of stations (out of a pool of over 8,000 stations) may not have sufficient commercial value for private capital but may have other intrinsic value and thus have been explored under different models. Some key considerations include:

- Railway stations in smart cities can be developed in collaboration with the Ministry of Urban Development (MoUD) which has envisaged developing an integrated transportation infrastructure in smart cities. In many cases, Railway Stations can be the focal for such projects. Indian Railways already has an MoU for such a collaboration.

- Ministry of Coal and Ministry of Defence may be interested in jointly developing stations that are located in close proximity to coal mines or settlements and defense establishments respectively. These stations would serve their specific interests, both strategic and operational.

- Some stations may be of high 'signaling' importance to state governments and they may be interested in collaborating with the

Indian Railways to develop these stations. For example, newly formed states may have major master plan developments for their capital or particular geographies.

- Foreign governments may be interested in developing stations which may enhance bilateral relationships between the governments and provide a large and meaningful opportunity to business community in their respective countries.

- Foreign financial institutions such as the World Bank and the Asian Development Bank, may be interested in station infrastructure projects as these projects unequivocally qualify as strategic public goods that are critical for improvement of many social indicators

The two models opened to private developers, both under PPP are detailed below:

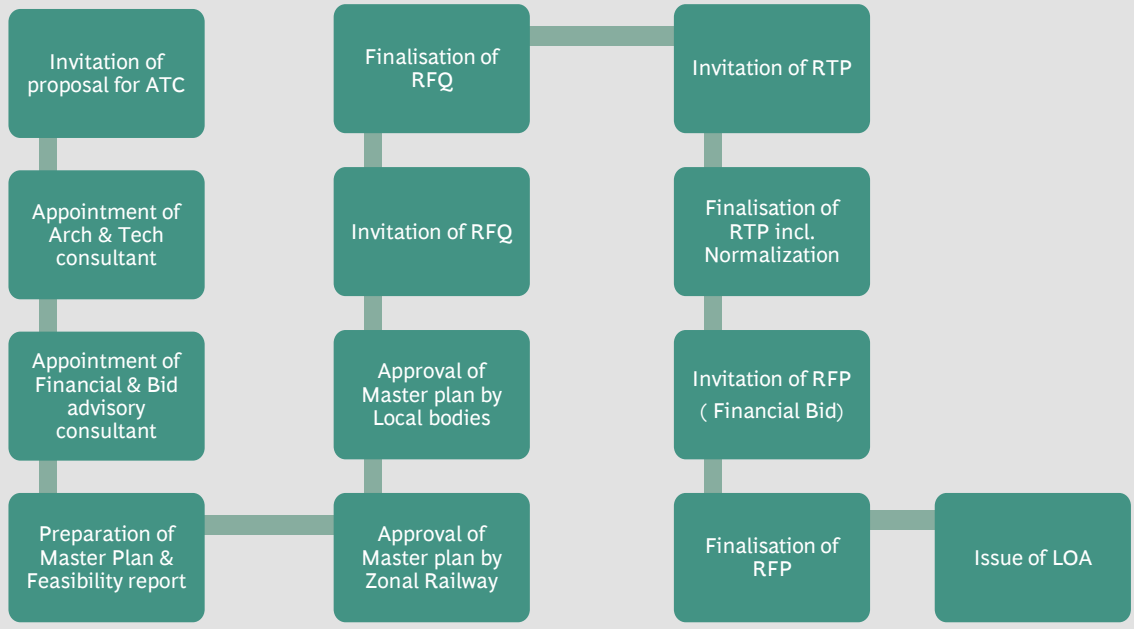
PPP—IRSDC Stations

IRSDC has been given the responsibility to redevelop 12 stations and large number of these stations are proposed to be developed through traditional PPP model. IRSDC is deploying a 13-step process shown in Exhibit 3.1. The process is initiated by inviting proposals for ATC (Architect and Technical Consultants) followed by appointment of ATC and Financial / Bid advisory consultant. The preparation of the master plan along with feasibility report then takes place which are approved by Zonal Railways. The technical and financial bids are then invited from the developers through a series of steps including a RFQ. Technical bids are evaluated and scored according to the criteria mentioned in RFP. The financial bids are opened for developers who fulfill technical criteria. The combined score of both technical and financial bid decides the winner. Habibganj Railway station has been awarded to a private developer under this methodology and a case study is provided below.

Redevelopment of Habibganj Railway Station Through PPP

Situated 8 km south of the main Bhopal station in Madhya Pradesh, Habibganj Railway station has daily footfall of over 25,000. The

Exhibit 3.1 | Traditional PPP Model Being Used by IRSDC



Source: Indian Railways.

station is being redeveloped through traditional PPP model where 17,245 sq. m encroachment free land has been leased out for 45 years to a private sector player for commercial development. The private player is responsible for both commercial development as well as station redevelopment. The expected costs of commercial development is around Rs. 350 cr. and that of station redevelopment is around Rs. 100 cr. The station was handed over to developer on March 1, 2017 and the construction time period has been decided 3 years with penalties fixed for delays. The station after redevelopment will be maintained by the private player and the non-fare revenue at station will be passed on to this player which means the private sector player bears both construction and demand risks and has potential of generating more revenue.

The main outcome of the project is that both commercial and station is being developed without any financial burden on the public sector. The envisaged building of Habibganj railway station is shown in Exhibit 3.2. The station will have dedicated approach roads to station, segregated arrival and departure paths, differently abled friendly facilities, quick evacuation system, solar power provision, rain water harvesting provision, parking for approximately 300 cars, 850 two-wheelers, rickshaws, taxis and buses, 6 lifts, 11 escalators along with other basic amenities.

PPP Modified Swiss Challenge

Recognizing the need to move in parallel on a large number of stations and to provide flexibility to private developers in designing of stations, the Indian Railways has adopted an innovation, often called as 'Modified Swiss Challenge' model. This innovation allows end to end involvement of the private developer and allows for parallel processing of projects. This model is envisaged to be designed and guided centrally at the Railway Board and then owned and executed by respective Zonal Railways. The model is new and requires efforts and investments in communication and onboarding of participants. The complete process can be thought of a two stage process with 10 major steps as depicted in Exhibit 3.3 and described below.

Exhibit 3.2 | Envisaged 3-D Model of Habibganj Railway Station



Source: Indian Railways.

23 stations mentioned in Exhibit 3.4 are planned to be executed through this model in phase 1.

1. **Release of Invitation Document:** Project Information Memorandum including details of land availability, passenger traffic projections are released along with process description and key responsibilities of the developers.

2. **Submission:** Eligibility documents (technical and financial) are submitted along with the technical proposal including preliminary designs, BOQs, construction methodology and phasing plan by the developers.

3. **Evaluation:** Shortlisting of applicants is based on minimum threshold technical and financial scores which are based on past experience in relevant projects and financial requirements. The scoring mechanism of technical bid is generally disclosed prior to submission. Each candidate is scored and ranked on an objective basis by internal and external committees appointed by Railways.

4. **Project Proponent Selection:** Based on above evaluation, the project proponent is selected at this stage. The project proponent will be required to create a detailed project report (DPR).

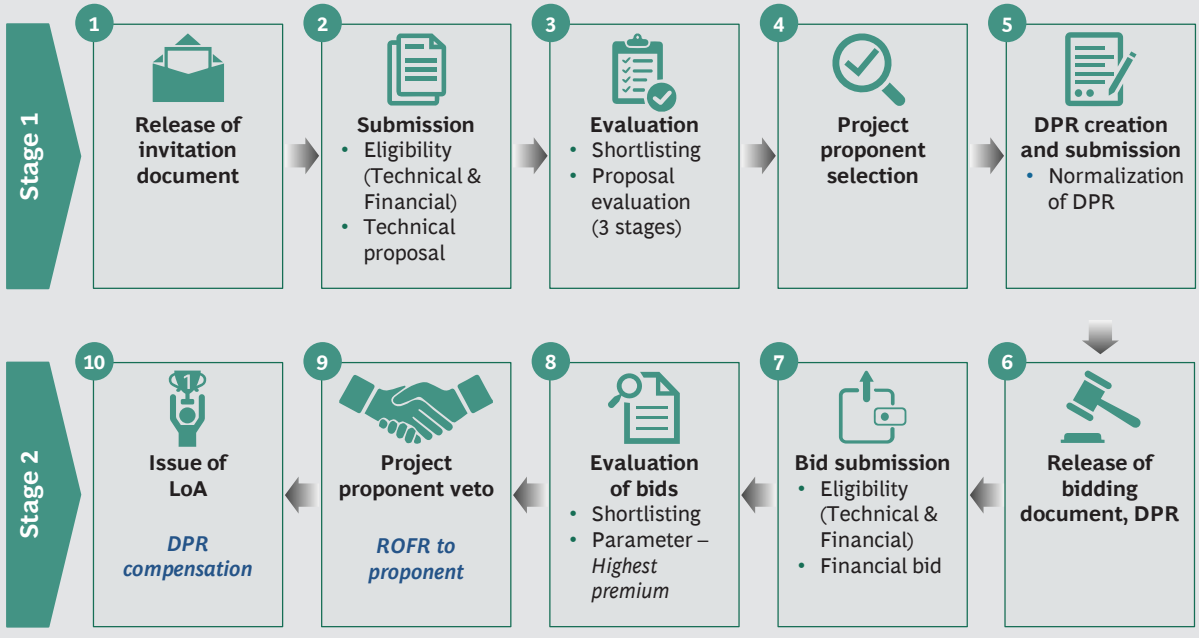
5. **DPR creation and submission:** DPR is created by the project proponent in discussion with the Zonal Railways. Key elements of DPR will include detailed drawings, bill of quantities, costing and pricing for undertaking stations redevelopment project.

6. **Release of bidding document and DPR:** The DPR created by project proponent is published. All applicants complying with the minimum technical and financial qualification can bid for the project. This is similar to an RFP.

7. **Bid Submission:** The applicants submit their technical and financial eligibility documents along with their financial bids against the DPR.

8. **Evaluation of Bids:** Shortlisting of bidders will be based on minimum

EXHIBIT 3.3 | Modified Swiss Challenge Model



Source: BCG analysis.

EXHIBIT 3.4 | List of 23 Stations Being Developed Through Modified Swiss Challenge Model





Sources: Indian Railways, BCG analysis.

threshold technical and financial scores. Highest project premium quoted by a qualified applicant will be the winner.

9. **Project Proponent Veto:** In case the highest bidder bids higher than the project proponent, then the project proponent will be given the opportunity to match the highest bid. If the proponent can match the highest bid then the project will be awarded to proponent. Such right of first refusal (ROFR) lies with the project proponent. If winner is someone else then the project winner will have to pay DPR compensation to the proponent.

10. **Issue of LOA:** LOAs are issued to the winner within a fixed timeline.

Summary of 23 Station NITs

The Notice Inviting Tenders for first set of 23 stations have been released and can be downloaded from the Indian Railways station redevelopment website. As shown in Exhibit 3.4, the station locations are spread all over the country. A brief description of each of these stations has been provided in the Exhibit 3.5. It can be noticed that the plots vary in sizes and multiple plots are available at few stations. Also, the surroundings of each station are different in terms of population density, affluency, industrial development, road infrastructure and accessibility.

Above mentioned variations in sites also create variation in their potential use. Few sites can be used for retail purposes while it is possible to develop integrated complex on others. The tender documents of these 23 stations cover the details of available sites and the potential use of these sites.

Exhibit 3.5 | Summary of 23 Stations being redeveloped through Modified Swiss Challenge Model

Sr. No.	Station Name	Available Land for commercial development (approximately)	Key Points
1	Allahabad	3 acres	• Subject site has excellent connectivity to civil lines and high court complex via multiple roads. • Proposed development on subject site is likely to attract clientele from neighborhood government offices, high court, educational institutes, large affluent catchment population and tourists.
2	Bandra Terminus	Two land parcels Khar East: 4.4 acres Bandra East: 2 acres	• Located in a developed corridor of the city and hence has access to all infrastructure provisions. • Located in close vicinity to established commercial areas of the city like BKC. • Immediate micro-market lacks quality commercial developments thus providing the developer an opportunity to provide a differentiated product with relevant USPs and in turn realize better revenues.
3	Bangalore Cantt.	3 acres	• Excellent connectivity and accessibility with good frontage and secondary access road. • Located in CBD area of the city and hence has access to all basic infrastructure provisions. • Proposed metro station in close vicinity to subject site will enhance the connectivity with other parts of the city.
4	Bhopal	Two land parcels Plot A: 0.8 acres Plot B: 6 acres	• Plot A is at the junction of the station approach road and the 80 feet Road with excellent frontage. • Plot B has excellent frontage along the Chhola road and has potential to develop into commercial hub in the vicinity.
5	Borivali	3.7 acres	• Located in a developed corridor of the city and hence has access to all basic infrastructure provisions. • Limited availability of large-sized land parcels as that of the subject site in and around the site provides better prospects for the integrated development.
6	Chennai central	1.5 acres	• The site is located adjacent to Chennai Central Railway station. • The site is located in the north of the proposed Central Square project developed by Chennai Metro Rail Limited.
7	Faridabad	Two land parcels Plot A: 2 acres Plot B: 1 acres	• The subject sites are located in close vicinity to established areas of the city • Plot B connects to 150 ft. wide Delhi Mathura Road (NH-2) at a distance of approx. 300-400 m and is near to Violet line of Delhi metro • The site will be able to enjoy additional FAR due to TOD applicability
8	Howrah	10 acres	• Located in vicinity to established areas of the city including the CBD of Kolkata, Howrah Station is well connected to Kolkata and rest of Howrah by both public and private transport • The site has a good frontage on the abutting road, about 370 m on the Salkia Main Road and also a similar frontage along the river Hooghly river front which would benefit various developments on the site • The upcoming east-west metro corridor is within 1 km of the site

Source: Indian Railways.
Note: The size and locations of land parcels might have been updated. Exact details to be checked from Indian Railways website.

Sr. No.	Station Name	Available Land for commercial development (approximately)	Key Points
9	Indore	Two land parcels Plot A: 4.28 acres Plot B: 0.7 acres	• The subject sites are located in close vicinity to established commercial areas of the city • Separate means of access to the proposed multi-level parking space (if proposed) would help in streamlining the flow of pedestrians as well as vehicular movement
10	Jammu Tawi	Five land parcels between 0.15-4.35 acres Total: 8.73 acres	• Subject sites are located in a developed corridor of the city and hence has access to all basic infrastructure provisions. • Subject sites are located in close vicinity to established areas of the city. • Immediate micro-market lacks quality retail and commercial developments thus providing the developer an opportunity to provide a differentiated product with relevant USPs and in turn realize better revenues.
11	Kamakhya	2.2 acres	• Once the approach road is built, the site shall have smooth access to NH-37. In addition, when the underpass from the A.T. Road, which is presently under construction is completed, the site shall have easier access from A.T. Road too. • A.T. Road does not offer any credible supply of hotels near Kamakhya temple. The site, thus, may accommodate branded budget hotel to bridge the demand-supply gap.
12	Kanpur Central	Two land parcels Plot A: 2.7 acres Plot B: 6 acres	• These parcels lie in the central part of the city and are located nearby one of the prime established corridor of the city (Kanpur-Allahabad Highway). • The area primarily comprises of unorganized retail and residential establishments.
13	Kozhikode	Four land parcels between 0.7-1.5 acres Total: 3.73 acres	• The properties are in core area (CBD) of Kozhikode City, densely populated and it's well connected to other micro-market through road. • Excellent frontage and visibility along the access road. • Proposed monorail station is diagonally opposite to one of the site. The proposed project will ease the existing traffic congestion and also improve the connectivity to other micro-markets.
14	Lokmanya Tilak	8 acres	• The subject site is located in a developed corridor of the city in Kurla and hence has access to all basic infrastructure provisions. • Subject site can be easily accessed from major transport nodes, such as Central and harbour line stations and Eastern expressway highway. The Mumbai airport is 12 km away from the station.
15	Mumbai Central	3.7 acres	• The subject property is located at Mumbai Central station, Tardeo, Mumbai. It lies in the Southern part of Mumbai. The subject property is well connected by Dr Anandrao Nair Marg and Tardeo Road, both being an important arterial road. • The site has potential for both commercial and retail or a combination.

Source: Indian Railways.
Note: The size and locations of land parcels might have been updated. Exact details to be checked from Indian Railways website.

Sr. No.	Station Name	Available Land for commercial development (approximately)	Key Points
16	Pune	Three land parcels Site 1: 3 acres Site 2: 4 acres Site 3: 1 acres Total: 8 acres	• Plot 1 is located within the railway station premise. It has access through the main station road. • Site 2 neighborhood is established with a known 5-star hotel (Grand Sheraton) and two office buildings. • Immediate surroundings of site 3 are commercial in nature and are an established market of office spaces. Commercial office spaces nearby have high demand.
17	Ranchi	Two land parcels Plot A: 2.6 acres Plot B: 5.6 acres	• The site abuts the station road on northern and eastern boundaries, effectively attributing 200 m frontage on this road. • Plot A is located in close proximity to the most developed quarter of the city and hence has access to all infrastructure provisions. • Plot B location w.r.t. the Ranchi Railway Station is such that it daily handles large number of passengers providing an opportunity of a huge footfall.
18	Secunderabad	5.6 acres	• The site has advantage of being located near to Secunderabad Railway Station and upcoming metro station. • At present there are no organized development like malls & hotels in the surrounding area. The proposed development can leverage the first mover advantage.
19	Thane	2 acres	• High footfall can be expected for retail development due to high passenger footfall at the station. • The neighbourhood largely comprises of retail and residential developments along the Rambhau Mhalgi road. Further, subject site's immediate neighbourhood comprises of restaurants and food joints as well banks namely Axis bank, HDFC bank, Canara Bank along Ganesh Purushottam Pai road.
20	Udaipur City	Five land parcels between 0.1-9 acres Total: 10.35 acres	• Udaipur is a very popular tourist destination and is known for its lakes. Being a tourist destination the city has demand for hotels across categories and support retail near station. • One of the sites has large area (~8 acres) and hence suitable for integrated development.
21	Vijaywada	~8 acres	• Site has access along 40 ft. wide Road with excellent frontage along access road and BRTS Road 100 ft. wide road in parallel. • The region is well connected by road and is second busiest railway junction of the Indian Railways. The average number of passenger dealt presently per day is 94,020 approximately.
22	Visakhapatnam	Two land parcels Plot A: 4 acres Plot B: 1 acres	• The subject site-1 has access along 80 ft. wide Railway Road, Gnannapuram, Visakhapatnam and site B has access along 40 ft. wide road with excellent frontage along access road. • The subject site has advantage of being located adjacent to Visakhapatnam Railway station. • At present there are no organized development like malls & hotels in the surrounding area. The proposed development can leverage the first mover advantage.
23	Yesvantpur	20 acres	• Subject property is located at a distance of 4 km from Yeshvanthpur Railway station and the neighborhood comprises of residential and retail developments. • The subject site is located in a developing corridor of the city and hence has access to all basic infrastructure provisions.

Source: Indian Railways.
Note: The size and locations of land parcels might have been updated. Exact details to be checked from Indian Railways website.

MAKING PPPs WORK

"One of the exciting things I found out about India is that you can do very effective Public-Private Partnership."

— Sundar Pichai, Google CEO

Growing population and rapidly progressing development and urbanization are increasing the demand for infrastructure around the world. In emerging markets, with high growth rates, like India, this demand is more pronounced. However, many governments across the world do not have the financial resources and capacity to fulfill these requirements. This is leading to an infrastructure deficit across many countries and sectors. Estimates suggest that the infrastructure construction amounts to $2.7 trillion against the needed $3.7 trillion resulting in $1 trillion investment gap per year worldwide. The effects of this shortfall are visible. In Brazil, ships have to wait for 15-20 days to load grains for export and in Africa, 40 percent of the food perishes on the way to markets. The long-term impacts of this gap are severe including slow economic growth. Governments around the world are encouraging private sector to bridge the investment and skill gap through public-private partnerships.

In a Public-Private Partnership (PPP) arrangement, the skills and resources of both public and private players are shared in delivering a service or facility for public use. Public-Private-Partnerships can accelerate infrastructure development by tapping private sector's financial resources and its skills effectively. As a pointer, institutional investors in OECD countries have Assets under Management worth over $71 trillion and infrastructure projects represent attractive alternate investment to this Assets under Management (AUM). Thus we have a situation where the demand and supply exists and comes down to finding the right fit. Depending on the sector and the country, the infrastructure investment characteristics may vary but overall appeal of infrastructure investment is considerable because of following reasons:

Long-term Investments: Infrastructure investments are generally long-term investments with concessions periods typically exceeding 20 years. This attracts the pension and insurance funds which can use infrastructure investments to fulfill their long-term obligations.

Stable Returns: The barrier to entry are high in infrastructure sector and often have public guarantee from competing assets. Hence, firms can decrease risks after construction if demand is well anticipated. This leads to predictable cash flows and returns attracting funds which look for stable returns over long time periods.

Diversification: Infrastructure goods are essential goods which means the fluctuation in their demand is lower than other goods. It provides opportunity for funds to diversify their portfolios and reduce residual or diversifiable risk.

Hedging against inflation: Historically infrastructure have been considered as hedged against inflation due to strong pricing power and lower operational cost exposure.

Accordingly, institutional investors are planning to increase their portfolio allocations to the infrastructure asset class. Research by Preqin (2012) suggests that insurance companies aim to increase their infrastructure investments from the current 1.1 percent to their target allocation of 2.6 percent of Assets under Management, while pension funds aim to increase their investment from 2.8 percent to about 5.0 percent. The trends are same in emerging countries where investors have piled up significant reserves over last decade.

While their appeal is universal, PPPs' greatest potential lies in emerging and developing countries as it reduces the infrastructure bottlenecks through financing and early completions of projects.

PPP in India is still a developing concept and government has taken many steps to implement PPP in broader set of projects. Transport and energy sectors account for more than 80 percent of all PPP projects in India. The availability of funds through various global and national bodies has made India a focused market for global private players. Many recent projects have seen active participation from private sector players.

However, historic trends around the world have shown that many promising PPP projects have ended in failure due to lack of preparedness and improper risk allocations. In Bolivia, for example, a water-project PPP was terminated after protests targeted a 35 percent water-price increase. In Spain, motorway PPPs have been bankrupted or renegotiated after traffic levels turned out to be half of the original forecast. PPP projects of mega scale require careful planning and execution roadmap to be successful. Two things that we would like to highlight in making PPP models successful are: selection of a project and its suitability for PPP and life cycle strategy for a PPP project. Below are a few suggestions to ensure attention to these two elements.

Screening Projects for PPP Suitability[1]

Not every project is suitable for PPP. Some projects are too small or too complex that PPP models become infeasible. A project has to be screened under four dimensions to check its suitability for PPP. While a specific project maybe successful without meeting all the listed dimensions, it is worthwhile to run this check.

1. **Possibility to create returns:** For creating higher value of money, there should be:

- Opportunity to reduce whole life costs and capex size
- Opportunity for revenue optimization, ancillary revenues
- Opportunity for operational efficiencies
- Opportunity for innovation
- Economies of scale from integrated delivery

2. **Feasibility of a long-term contract:** For feasibility of a long-term contract to sustain, there should be:

- Stability of service requirement and technical aspects
- Services should be required for full contract duration
- Proper estimates of long-term asset costs
- Risk identification and transfers of risks or pricing of risks
- Specification of service levels

3. **Ability and appetite in private sector:** Private sector should have the ability and appetite to execute the required project. Following are the key feature that should be implemented or checked:

- Expertise and interest
- Risk tolerance / complexity vs return potential

- Debt market pricing and liquidity
- Project size relative to transaction costs

4. **Feasibility of legal, regulatory and political aspects:** Following are the key issues that can hinder the project at some stage and hence, need to be addressed upfront:

- Environmental, social and local stakeholder issues
- Political issues
- Regulatory and legislative issues
- Accounting and tax treatment
- Land ownership issues

Life Cycle Approach Required for Successful PPPs[1]

Successful PPPs need holistic and end to end planning to address any foreseeable roadblocks at a later stage. As shown in Exhibit 4.1, there are three stages of any PPP project: 'Project Origination', 'Project Preparation' and 'Project Implementation' and each stage consists of two steps.

Project origination has following two steps:

- Integrated infrastructure planning and cost-benefit based project prioritization
- Life cycle assessment of public vs. private delivery

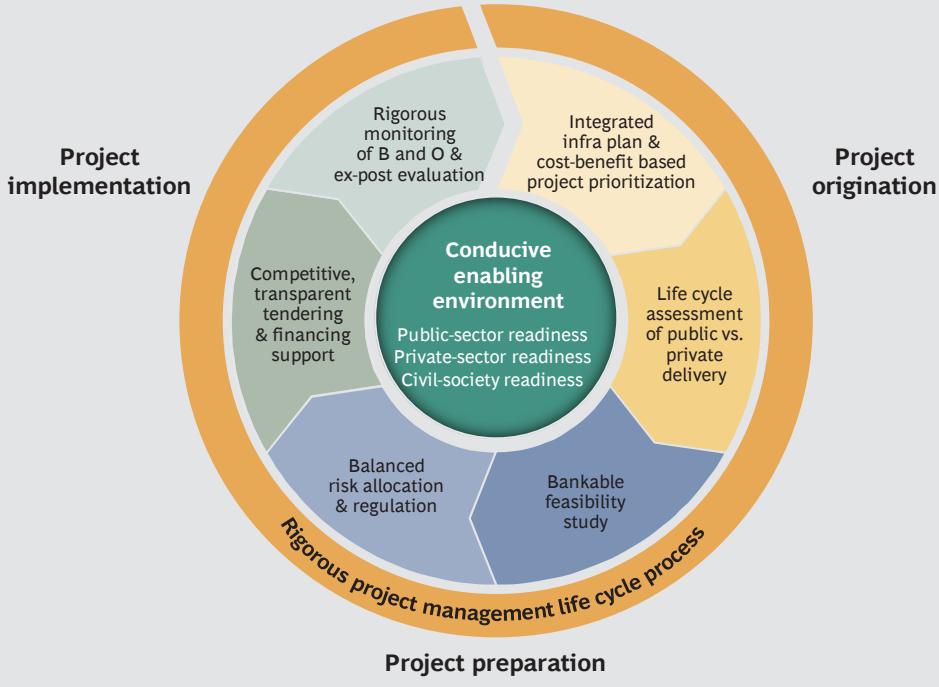
The project preparation stage also consists of two steps:

- Bankable feasibility study of the project
- Balanced risk allocation and regulation

The two steps of project implementation are:

- Competitive, transparent tendering and financing support
- Rigorous monitoring of construction and operations

EXHIBIT 4.1 | Life cycle Strategy Planning for PPP Projects



Sources: World Economic Forum, BCG.

As shown in Exhibit 4.2, PPPs struggle for variety of reasons, but mostly due to insufficient project preparation. Hence, it becomes important to understand various steps of 'Project Preparation' in detail. Exhibit 4.3 explains the key steps to ensure that all the steps of 'Project Preparation' are executed and a conducive enabling environment can be created.

Three Types of PPP Models are Available for Indian Railways

Many variations of PPP models have been adopted across the world to execute large infrastructure projects. The models vary based on the strategic priorities of the government or its agencies on four key parameters:

- Amount of public finances to be invested
- Level of engagement of the government agency during construction of the projects
- Level of engagement of the government agency in the operations and maintenance of the asset once it is operational
- Share of risk / return that the government agency is willing to undertake

Based on the above mentioned parameters, three execution models of PPP have emerged which are used in India:

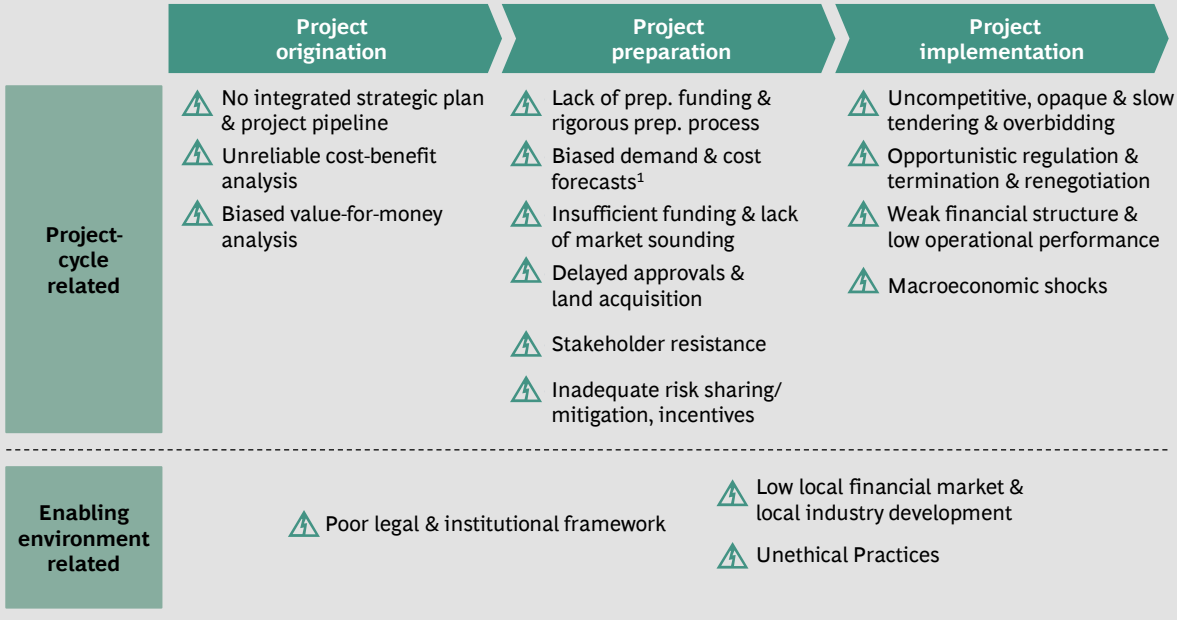
- Public Private Partnership (PPP) Concession model
- Public Private Partnership Annuity model
- Public Private Partnership Hybrid Annuity model

These models have largely been used in road sector in India and will have applicability in Railway projects too.

PPP Concession Model

The PPP Concession model is a partnership between the asset owner (government agency) and the developer (bid winner) wherein the developer pays upfront premium to acquire the rights to develop the asset and generate revenues from it. The developer also

EXHIBIT 4.2 | Reasons Why PPPs Struggle



Sources: World Economic Forum, BCG.
1. Planning fallacy, optimism bias and strategic misrepresentation.

EXHIBIT 4.3 | Steps to Plan a Successful Project Preparation Phase



Sources: World Economic Forum, BCG.

pays the cost for developing the asset. The period for operating the asset is fixed during which there may be a revenue sharing agreement between the developer and the government agency. This model is a low-risk model for the government agency as most of the risks such as capital risk, construction risk, management risk, and demand risk are borne by the developer, but the developer also gets to retain any revenue upside generated during the duration of the contract. Experience suggests that this model will likely succeed for high commercial viability projects.

Thus, while the risks are lower for the government agency, there is also the possibility of generating lower revenues. For the government agency, there are three means to ensure revenue maximization.

- Ensuring high bidder participation through market outreach and process simplifications to ensure higher upfront premiums
- Undertaking upfront detailed analysis of the asset and its potential including phasing
- Developing a transparent revenue audit mechanism and structuring the contract in a way that the revenue share can be altered if the revenues exceed a threshold

PPP Annuity Model

This model is suited for projects with medium commercial viability due to which the government agency needs to make guaranteed payments to the developer to make it attractive for private players.

In the PPP Annuity model, the government agency enters into a contract with the developer (bid winner) wherein the developer pays for construction of the project and the government agency guarantees a fixed annual payout to the developer for a specified period of time. This model is a medium-risk model for the government agency as the demand risk and part of the management risk are underwritten by the government agency whereas the capital risk and construction risk are borne by the developer. On the returns side, the government agency can generate higher returns if the demand picks up post construc-

tion as the developer is only paid a fixed annual fee and the government agency gets the upside.

PPP Hybrid Annuity Model

In the PPP Hybrid Annuity model, the government agency enters into a contract with the developer (bid winner) wherein the development costs are shared between the government agency and the developer and the revenues generated from the asset are also shared between the government agency and the developer. This model shares most risks and upsides between public agency and the developer. In this case the risks would include capitla risk, demand risk and maintenance risk. However, the government agency has a relatively higher share in revenues generated from the asset. The construction risk is borne by the developer but since the government agency capital is involved, the agency provides extensive assistance in minimizing construction risk.

This model has been introduced recently by the Government of India to execute stalled projects.

The applicability of these models in the context of Indian Railways stations development plan is explained in the next chapter. It is apparent that private capital will be attracted only to commercially viable project. Public agencies will have to suitably provide comfort in case the project's viability is not clear. Balanced commerical commitments, therefore, are essential to achieve early closer of projects while maximising revenues for public agency.

NOTES:
1. Some of the content written in this point has been extracted from World Economic Forum, BCG publication.

KEY IMPERATIVES FOR SUCCESS OF STATION REDEVELOPMENT PROGRAM

"There are no secrets to success. It is the result of preparation, hard work, and learning from failure."

— Colin Powell

The Indian Railways station redevelopment program is a large program and has a potential to be the benchmark for other future programs. Hence, it is important to get it right the first time. As discussed earlier, there are various models including IRSDC (PPP), Modified Swiss Challenge Model (PPP), G2G model and others through which this journey can be undertaken. Each model has its merits and can be used in different situations. However, there are few elements that need to be taken care of irrespective of any model being deployed. These elements are:

- **Timelines of the program:** Many large projects experience procedural / approval delays. These delays create uncertainty for all stakeholders reducing success rate. An appreciation of adhering to timelines and giving adequate attention to resources is, thus, helpful. A separate empowered body with well-defined responsibilities can be formed to ensure adherence to the timelines.

- **Removing uncertainties:** Uncertainties can create conflicts between stakeholders resulting in delays and cost over runs. It is important to minimize the uncertainties in projects. Technology, sophisticated modeling approaches and in-depth informative sources can be used to remove uncertainties upfront. It may also be useful to layout principles for dealing with unplanned situations and uncertainties that may crop up at a later stage.

- **Working with state governments and other stake holders:** While working with multiple stakeholders, it is important to clearly define the scope, roles, and responsibilities of each stakeholder.

- **Realistic expectation:** A mega program like station redevelopment needs to bring a lot of stakeholders to a single platform. Each stakeholder examines the project from their lens. Setting realistic expectations is important to remain grounded. This will also help in being flexible to feedbacks and changes that become inevitable.

- **Capacity constraints:** A single organization, public or private, does not have the capability or capacity to execute numerous projects that needs to be undertaken uner this program. Hence, while developing the program roadmap, capacity of all stakeholders and entities must be taken into account and an appropriate roadmap should be created that can serve this program.

In this context, the model undertaken for Surat stations is unique. In Surat, the adjoining land parcels of Railways, Gujrat State Road

Transport Corporation and Surat Municipal Corporation have been pooled together. A multi-model transport hub has been planned in this pooled and much larger area of land. This brings the core competencies of the three forms of the Government—the municipal, the state and the federal governments together to implement the project for public good. An SPV will implement this project. Railways intends to replicate this and other innovative models at many other stations.

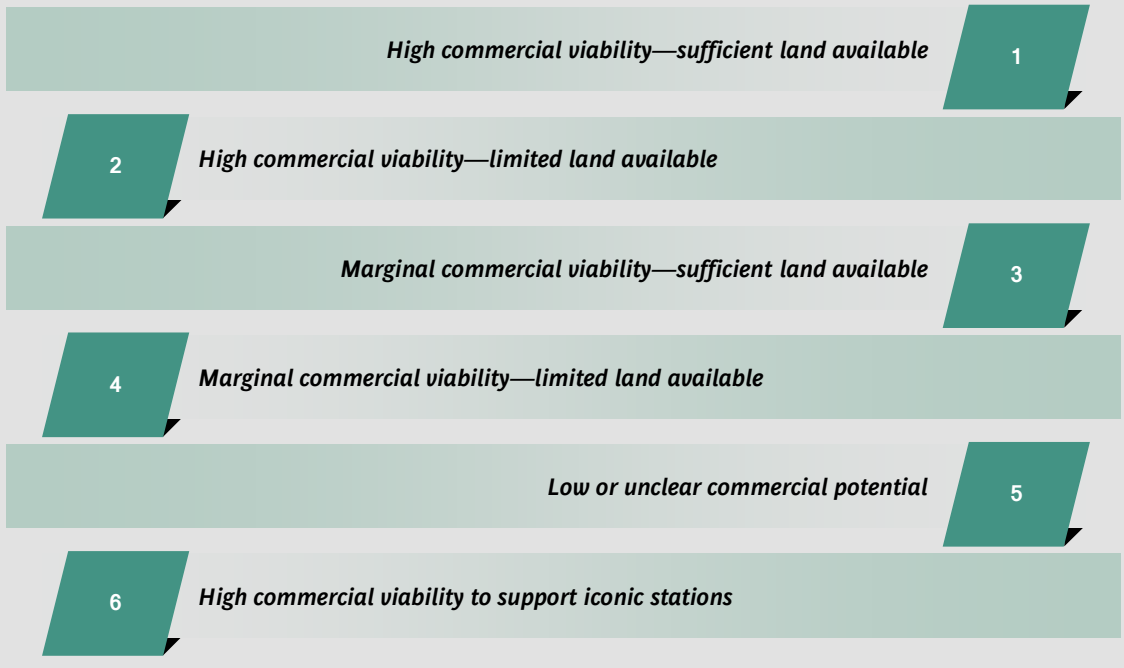
In the remaining part of the chapter, we will discuss key imperatives for success of station redevelopment program under the PPP model. Some of the key elements for PPP success in Indian Railways station redevelopment program will include selection of right projects, selection of the right PPP model, robust organization / governance structure, capability building, cost and revenue estimation, operations and maintenance after construction, funding and risks mitigation strategies.

Selecting Right Set of Projects

The Indian Railways has more than 8,000 stations in the country. The commercial potential of these stations vary due to multiple factors such as land availability, location, access to the site, land regulations (like Floor Area Ratio) and encumbrances / encroachment status. While some stations may fund their entire redevelopment journey, some stations may require additional funds for the same. This is because there is a significant variation in both the stations redevelopment cost and commercial potential of the real estate available across stations. Hence, selecting the right set of projects becomes important from funding and timing perspective.

One approach to selecting the right project can be assessing the commercial potential and land availability of stations and priortizing them as shown in Exhibit 5.1. The high commercial viability stations can be redeveloped first with PPP models and the surplus generated from these can be used in the redevelopment of low commercial viability projects. In addition to commercial viability, other elements such as state government support and other strategic considerations will determine the priortization.

Exhibit 5.1 | Prioritization of Stations Based on Commercial Viability and Land Availability



Source: BCG analysis.

Selecting the Right PPP Model

The variation in commercial viability of the stations implies applicability of different forms of PPP model (concession, annuity, hybrid annuity) to ensure maximum participation from private players and success of these projects. Below are the possible PPP execution models available for different types of stations.

- **High commercial viability stations:** High commercial viability makes the projects attractive for private players who have an appetite to take on more risks for high potential returns. Therefore, all models of execution are viable for these stations as private players are willing to take on capital, construction, maintenance and operations risk and the most preferred execution model will be dependent on the risk appetite of the government agency.

- **Medium commercial viability stations:** Medium commercial viability stations are also attractive for private players but private players are not willing to take on all the risks. Some assured payment from the government agency makes these stations attractive for private players. Therefore, PPP annuity model could be the preferred execution models for these stations.

- **Low commercial viability stations:** Low commercial viability stations are not attractive for private players given multiple risks associated with these stations. To successfully bid out these stations, the government agency would be required to make assured payments and take on the demand risk. Therefore, PPP Hybrid and annuity models are likely models for stations with low commercial viability.

Exhibit 5.2 summarizes the options for different types of stations:

It is understood that it is the intention of the Ministry of Railways to be flexible in the choice of models so that the largest possible number of stations are redeveloped.

EXHIBIT 5.2 | Execution Models for Different Types of Stations

Proposition	Public Private Partnership Models		
Commercial Viability	**Concession**	**Annuity**	**Hybrid Annuity**
High commercial viability stations	✓	✓	
Medium commercial viability stations	✓	✓	
Low commercial viability stations		✓	✓

Source: BCG analysis.

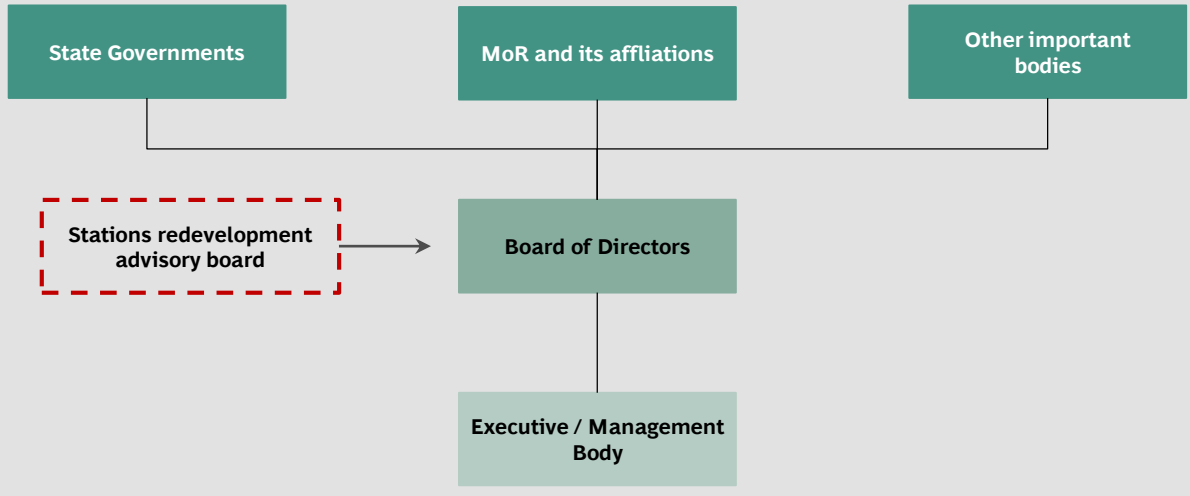
Capability Building

The success of this program requires an empowered organization structure with new skills and capabilities such as real estate, marketing, fund raising and risk management among others.

This will involve developing capabilities and capacities within the current structure along with new organization imperatives such as more cross functional teams for building knowledge and experience in the organization over a period of time. To incorporate these factors, some possible choices are presented here:

- **Largest holding by government:** Stations are a key national assets under the ownership and control of the Indian Railways. Thus, it is imperative for the government to have a primary role in the organization for stations redevelopment. However, it may also be helpful to have other stakeholders such as state governments and institutions of stature as shareholders of this body.
- **Process and governance autonomy:** To ensure timely and effective execution of the stations redevelopment program, the organization must have the autonomy to be able to define its policies, processes and governance mechanisms.
- **Access to private capabilities:** Stations redevelopment requires a wide spectrum of capabilities and expertise such as legal, contracting, real estate, marketing, fund raising and fund management. The organization structure should be such that it can tap into the private sector for bringing in the required capabilities and experience. In addition, an advisory board may be constituted primarily to bring perspectives of private developers and investors.
- **Stakeholder involvement**: The program requires coordinated efforts of multiple stakeholders such as the Railway Board, state governments, local authorities, zonal officers, divisional officers, and other government ministries. The organization structure should facilitate involvement

EXHIBIT 5.3 | The New Organization Imperatives



Source: BCG analysis.

and ownership of key stakeholders to ensure efficient functioning and execution.

In the long run, a dedicated organization, scheme of which is shown in Exhibit 5.3 would be required for stations development and management. This organisation can be later made into BU tasked with construction, operations and maintenance of Railway stations.

Station Redevelopment Cost Assessment

It is essential to understand the cost implications involved in redeveloping stations. The total cost can be split into two parts: Construction cost and amenities cost. The total construction cost can be estimated by multiplying per square feet construction cost of similar building and total square feet area to be constructed. Amenities cost can be estimated by multiplying list of amenities, volume of these amenities and cost per unit. The estimation of various elements of this approach can be done as explained below:

- **Station amenities:** As explained before, stations' profile varies significantly (for instance, some stations attract passenger traffic of over 500,000 per day whereas some stations attract passenger traffic of less than 10,000 per day. The variation exists in the station area as well: some stations have station area of less than 1,000 sq.m. whereas some stations have station area of over 1,600,000 sq.m.)

Accordingly, the amenities required would also be different for different stations. Hence, a desired list of all the amenities should be developed for all the stations. One way to do this is to segment stations according to the requirement and then identify the amenities required for each segment. Indian Railways has already developed list of amenities and is available as part of its world class station manual.

- **Unit cost of each amenity:** Once the list is prepared of amenities, unit quote of each of these amenities should be obtained. The same can be estimated based on past experiences.
- **Establishing guiding principles for determining required volume of amenities:** In order to quantify the volume / dimensions of required stations facilities, it is necessary to establish guiding principles for each amenity. For instance, concourse requirement will depend on maximum passengers handled by station at any time.These principles should be developed by the officials of the Indian Railways who have experience in identifying the drivers of amenities' requirements. Global benchmarks and any safety requirements such as disaster management norms and necessary provisions for differently abled persons should also be incorporated. It is also possible for Indian Railways to define a roadmap to move stations from one stage to next of amenities standards.

Operation and Maintenance After Construction

Once, the construction is completed, a thorough maintenance plan is required to keep the stations properly functional, clean and hygienic. For this, station facility management agreements of re-developed stations need to be signed with the concerned parties. The agreement for 'Operation and Maintenance' of Railway stations (excluding train operations) should contain clear terms and conditions of management including scope, SLAs, revenue sharing, timelines and penalties. Key elements of station facility management agreement are given below:

Payment schedule

- Details of license fees to be paid to railways i.e. revenue share or fixed fee.

Service Level Agreements

- Details of SLAs to be maintained for upkeep of station facilities
- Penalties to be levied in case of deviations

Project Management

- Appointment process of Station Facility Manager
- Roles and responsibilities of Station Facility Manager

- Governance and monitoring mechanism
- Escrow details, Insurance coverage and Termination of agreement etc.

Funding of Stations Redevelopment

The overall station portfolio consists of stations which vary in terms of their potential commercial viability from high to low. While some stations may fund their entire redevelopment journey, some stations may require additional funds for the same. It may therefore be helpful to create a station redevelopment fund.

Creation of a fund offers the following advantages:

- Pooling of funds for the entire portfolio of stations, which includes a wide spectrum of stations with varying commercial viability
- Increased participation from external entities especially foreign investors
- Increased flexibility and choice available to investors
- Easier processes for fund transfers
- Potential tax benefits / concessions

Indian Railways has been thinking of many innovations for its funding needs such as Railways Infrastructure Development Fund (RIDF). It may be appropriate to allocate limits / sub-limits within RIDF for station redevelopment program.

Key Risks, Mitigation Strategies, and Implications for Indian Railways

Based on the Indian and international experiences, there are several risk elements during the entire life cycle of PPP that need to be addressed. In addition to risks mentioned in Exhibit 4.3, following Exhibit 5.4 summarizes the key risks and proposed mitigation strategies in the Indian context.

EXHIBIT 5.4 | Key Risks, Mitigation Strategies and Implication for Indian Railways

Key Risk	Mitigation strategies
Lack of a long term infrastructure vision and plan	• Develop a long term infrastructure vision and plan and a project prioritization approach to ensure planned development of infrastructure
Lack of engagement with key stakeholders	• All key stakeholders should be identified and the government agency should lead the process to engage with other government agencies
Getting requisite approvals from the concerned authorities	• The government agency should lead or proactively support the process of getting requisite clearances and approvals from concerned authorities
Continuous change in design and sub-standard forecasting	• Design should be finalized before award of contract and robust financial and technical models should be developed and market tested. Indian Railways should develop internal capabilities or contract external expertise to ensure robust demand and financial forecasting models are developed before award of contract
Higher weightage to financial bids can lead to aggressive bidding which may not be sustainable	• Scoring criteria should include weightage to technical proposal and very aggressive financial proposals should not be accepted
Lack of consideration to local conditions and project specific details	• Detailed project information memorandum should be provided upfront to all potential bidders
Litigation and legal issues	• Contract documents should be exhaustively validated by legal experts to minimize litigation
Lack of clarity on contractual obligations	• The contract documents should be released along with the bid documents to ensure all potential bidders have a clear understanding of the contract
Cost overruns or delays due to faulty design	• Private player responsible for design should bear any risk emerging out of faulty design and should compensate the government agency
Lack of a structured Program Management Office (PMO) and critical path activities	• A structured Program Management Office should be setup to ensure timely execution and detailed timeline highlighting the critical path of activities should also be developed to ensure timely completion

Source: BCG analysis.

Views of Various Stakeholders

Stations redevelopment program encompasses multiple domains such as real estate, investment banking, equity investment, mass transportation, urban planning, architecture and heritage. Hence, views of multiple experts from all the relevant fields are required to understand various critical aspects of stations redevelopment. The views of few such experts are provided below. In interest of transparency, the views are being presented as heard.

Real Estate

- The stations redevelopment program entails over 400 stations. Many of these stations are located in the same region and thus, appropriate phasing of stations should be considered based on the level of demand that may be absorbed in each market. Phased out redevelopment will also maximize premiums to be received by Indian Railways.

- A comprehensive marketing campaign (including road shows) should be designed to reach out to regional, national and international developers. Given the station redevelopment (especially for smaller stations) has a regional focus to it, such a marketing campaign would be crucial in ensuring that all stations receive participation of the developers.

- Currently envisaged lease period of 45 years and use of land for only commercial purposes may render the stations in Tier II cities to be less attractive as there is limited commercial potential in these cities. An extended lease period and more flexible use of land (such as to include residential asset class) may be considered in order to enhance viability of all stations.

- Indian Railways may obtain the necessary approvals related to the commercial development of land (such as change in land use and obtaining NOCs) for all the stations under the program from the state and local authorities. This will help to boost the developers' confidence in the program.

- The agreement between the Indian Railways and developers should be free from any ambiguous terms and overlapping rights and responsibilities. For instance, in the current agreement, the advertising rights have been kept out of the purview of developers. However, they are entitled to receive a specified share of advertisement revenues from Indian Railways. Such clauses are potential causes for litigation and hence should be avoided.

- Going forward, Indian Railways may identify the funding partners and appropriate arrangements may be made with them for providing financing options to developers at a pre-approved interest rate. This will enable even the medium to small scale developers to participate in the program hence increasing the potential options for the program.

Investment Banking

- An area of concern is that many times, the team involved in designing the process is not involved in implementation of process. The senior officials usually involved in the designing phase are not involved during implementation and hence are unable to fast track the implementation process. The middle level officials, who are responsible for implementation, do not have the same level of authority and hence, the implementation tends to face delays. Hence, it is important to have at least a part of the design / strategy team handling the implementation as well.

- The consultation with external stakeholders in the process design stage is an important factor for incorporating all perspectives. This was done well in the first phase of the stations redevelopment program wherein developers, lawyers and strategic advisors were involved in designing the bidding process.

- Stations redevelopment is relatively a new program and hence it is important to ensure the success of first phase through multiple interventions (such as fast tracking approvals) as this will determine

future participation and hence the success of subsequent phases.

- In the long term, a central pool of funds can be created for stations development program. The fund should have a fund manager or an Asset Management Company (AMC). The fund manager should have representation from Indian Railways and the large investors. The Indian Railways' representatives may have the operational rights whereas the investors' representatives may have governance rights.

- The fund will have to ensure a minimum blended rate of return to its investors. This will provide the ability to undertake redevelopment of medium to low viability stations along with stations of high commercial viability.

Banks / Financial Institutions

- Indian Railway can factor two key factors for developer selection which are considered by the bank while approving loans to developers: fund raising capacity of developers and past history of timely delivery of infrastructure projects.

- The fund raising capacity of the developer is based on multiple aspects such as their financial strength, promoters' background and source of funds. Financial strength of the company is determined by its leverage ratio as well the group leverage ratio, free cash flows, debt service coverage ratio and balance sheet ratios. Hence, the credit history may be given due consideration while finalizing bids.

- The history of the developers across various infrastructure sectors such as roads, ports and energy is duly considered. The timely delivery of projects is the most critical factor. Bank will be willing to finance developers which are new to the stations redevelopment if they have delivered on these two fronts.

- The interest rates offered by the bank would depend on the credit history of the developer and the past relationship of the developer with the particular bank. Banks would consider offering lower interest rates to the developers if loan repayment guarantee is provided by Indian Railways.

Equity investors / Trusts

- For financing infrastructure projects, the developers would secure a mix of debt and equity funds. The proportion of equity would be about 15-20 percent. Another 15-20 percent of funds would be in the form of mezzanine loans and the remaining would be in the form of long term debt.

- The developers should have the right to create mortgage on the lease hold land. This would be critical to their ability to raise funds for the project.

- The agreement between the developers and Indian Railways should have a clear termination clause with no continuing liability of either party. There should be a well-defined dispute resolution mechanism and limited overlap of roles / responsibilities.

- One of the most significant risks seen in this project is related to Indian Railways providing an encroachment and encumbrance free land with clear land titles. In case of any land related litigation, the project will face considerable delays.

- It has been experienced that at times, there tends to be a significant gap between the first and second stage of the bidding process which is more than specified as per the process. This hampers the process and adversely impacts the developers' level of interest. It must be ensured that the timelines are adhered to throughout the process.

- Established national level developers would be looking to invest in projects with size of INR 800-1500 crore. With the ticket size lower than this range, the key players will be the regional developers.

- The development model should have

clear terms such as precise bidding parameters and revenue sharing arrangement.

- The qualification criteria for developers should be robust and include the current state of balance sheet and cash flows. It is seen in the past, that projects have been awarded solely on the basis of bidders' potential to raise funding which has led to issues later in the implementation phases.

- Government projects face significant risk of change in regulations. It is recommended that compensatory clauses should be built in, to ensure steady cash flows even in the face of policy changes, such as the recent demonetization of high value currency notes.

- Entire project return based on commercial development is seen as risky. Certain proportion of station earnings, which can be calculated based on past trends, should also be shared with the developers in order to ensure steady and sustained cash flows, which will in turn help them in securing funding.

- Mutual funds would consider investing in a central fund created for stations redevelopment. Such a fund should have a structure similar to that of an Infrastructure Investment Trust with trustees, investment manager and project manager.

CONCLUSION

The ball has been set rolling for this mega program. Success of the program will be transformational for the Indian Railways and the country as it will usher new projects and new ways of collaboration with many new stakeholders. The program intends to make the Indian Railways modern and contemporary to its clients, unlock large and tied assets for society at large and opens new revenue stream for the Indian Railways. The program will be closely watched and the success of the program will be defined by not only the number of projects that are successfully bid out but the entire process scripted to achieving the goal of successful bidding and the openness of communication and ideas to make existing or subsequent projects more meaningful.

The Indian Railways has started the Railways stations redevelopment journey with NITs announced for 23 stations. About 400 A1 and A category stations are being targeted to be offered through similar route after deep dives. These stations will be offered in subsequent phases. The Indian Railways has announced its intent and stations outside A1 and A stations are also being explored under different models. Example, letter of award for build out of Gandhinagar station was recently concluded. Many other stations such as Category C stations, catering to commuter traffic in metros, will soon be available and will be attractive opportunities. Developers and consultants interested in overall program should utilize the first available opportunity and build credentials and expertise in the area of developing Railways stations.

PPP is a complex process. For the Railways stations redevelopment projects all three, the public agency—Indian Railways, the asset—Railways stations and the methodology—modified Swiss Challenge model are new to the concept. Sufficient margins are therefore required in bidding contours; however, tight discipline is also required to convey intent and seriousness of the overall program objectives. Bidding process will require confidence building amongst all stakeholders and an atmosphere of open communication should be created. Momentum and interest built in the market should be sustained along with continuity of dialogue. For the Indian Railways that implies being responsive, timely and having a core policy towards the program. For the developers this implies picking projects of interest and then substantially investing behind those projects at pre-bidding and bidding stage to get the most out of this exercise. Construction and modernization of the Indian Railways station buildings is expected to take about 3 years after the award of project. However, that will be the start of next phase of each redevelopment journey. Operations and maintenance of these redeveloped assets, the Indian Railways stations, will be equally important and can't be relegated as second prior-

ity. Meaningful metrics and enforceable SLAs with appropriate mechanism of measurement and governance will form the bedrock of final customer experience and economic value. Since these redeveloped stations will be run by many different developers, the Indian Railways will have to devise newer ways of engagement with these partners. Framework for engagement and a fair and timely dispute resolution mechanism will be equally important. Indian Railways will need to develop specialized agency to execute the above needs. Global benchmarks suggest creation of separate SBU for development and O&M of Railways stations. A beginning has been made with IRSDC and the agency will need continuous strengthening.

This program can be a win-win not only for private parties and the Indian Railways but also for a very important constituent of the Indian Railways, their employees. Most of the important stations on the Indian Railways network have railway colonies and offices in near vicinity. These railway colonies can benefit from the redevelopment project. The redeveloped colonies will ensure that the Indian Railways provide modernized and improved housing or office space to its employees. Also wherever possible, the Railways stations redevelopment program may stand to benefit from the increased land availability and hence better economic value. Our analysis shows that doing so in high commercial viability locations can increase the surplus by over 15 percent.

Stations can be redeveloped to blend in local flavours by factoring in local culture, needs, and aspirations. By having a customized redevelopment project, the redeveloped Railways station can be positioned as a gift to the local community. Civil society including trusts, associations, colleges, students, NGOs and others should be encouraged to participate in this program through various activities such as providing feedback, and awareness campaigns among others. This will increase engagement from local populace and, hence, the local stakeholders like state governments.

While the program has been launched with some boundary conditions, it is useful to challenge them in subsequent phases. Levers to unlock more value such as higher lease periods and permission for all kind of economic activities may be considered.

The Indian Railways stations will remain a public good for the many socio-economic purposes they serve. Even, after monetizing the land available, the program may not be totally financially viable for all 8,000 stations redevelopment. Another aspect is timing. Like many public assets, these assets will take time to fully develop and realize their potential. It is therefore important to provide partial public funding and create reasonable return expectations in the market from these assets.

The Indian Railways Stations Redevelopment program is a bold move by the Indian Railways and has the potential to transform Indian Railways and create new win-win opportunities for all stakeholders.

NOTE TO THE READER

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Acknowledgements

The authors gratefully acknowledge the guidance and contribution of everyone associated with this program and in particular Shri AK Mital, Chairman Railway Board and Shri AK Mittal, Member Engineering, Shri SK Lohia, CEO, IRSDC and all officers of Station Development Directorate.

The authors deeply appreciate the contribution of Sumant Wattas, Principal, BCG, Saurabh Arora, Ankur Bansal, Antara Raychaudhury, Aditi Swarup, Akshay Raizada, Vishal Jalan, and all other team members and associates involved in the strategic advisory assignment of Indian Railways Stations redevelopment.

The authors thank Gourav Garg, for his analysis and drafting contribution to this report.

Special thanks also, to Jasmin Pithawala and Maneck Katrak for managing the marketing process, and Jamshed Daruwalla and Pradeep Hire for their contributions to the editing, designing and production of this report.

Authors acknowledge efforts of Ms. Neerja Singh and the entire team at FICCI for facilitation of this report.

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A report by World Economic Forum in collaboration with The Boston Consulting Group, May 2013

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