TRENCHLESS TECHNOLOGY IN INDIA

There is a lot of trenchless work going on these days in India. Here, INDSTT offers its perspective on the country's infrastructure, as well the growing trenchless market.

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The rapid growth of urban population coupled with the reducing subsurface, as well as ground spaces for laying utilities, are the base catalysts for the application of trenchless techniques in India and other nations of South Asia.

Added to this, the deteriorating state of existing physical subsurface infrastructures evolves into a situation where the conventions are giving way to advancements — trenchless technologies.

In India 10 years ago, trenchless techniques was a term known only for advancements and automation and the information in subsurface construction. Even that knowledge at the time was rather bookish. During the last decade, Indian trenchless markets have seen a substantial growth in the population of drilling rigs — in fact, the population grew from non-existence to the current total of more than 400 operating units.

Similarly, lining businesses, which started with a few meters of demonstrational applications, have evolved into businesses worth millions of dollars. A recent project executed in New Delhi boasts of CIPP lining with diameters up to 1,900 mm with an approximate length of 7 km. A substantial amount of glass-fiber reinforced pipe (GRP) linings have also been executed during this period and at times, it serves as a cost-effective alternative to CIPP.

In this article, we will discuss the business of trenchless technology in India, which is the largest market of trenchless in South Asia and is poised to grow further.

State of Infrastructure

Indian subsurface infrastructure has a varied age, starting from newly laid pipes to ones that are as old as 200 years. Lengthwise, New Delhi has one of the largest subsurface pipe networks with approximately 5,000 km in length. There are functional sewers in old cities such as Benaras, Kolkata or Mumbai, with pipe ages exceeding 100 years.

In New Delhi the lines are not only silted but settlements of crown and other structural failures are rampant in some of the other locations. In some of the cities, such as Coemtore, another type of problem is the aging of the pipes where the pipe materials have completely failed.

Apart from the above problems, another difficulty dogging the Indian subsurface networks is at times the failure of proper grades for gravity lines, necessitating an all-weather round pumping due to sluggish flow. Moreover, the present state of affairs is that after an extremely long period of neglect, now the utility service providers have started feeling the pinch as to the failure of the networks, which are now leading to serious environmental disasters.

One prominent example is the of the Yamuna River. Faced with such situations all over, several utility service providing authorities have embarked upon Environmental Improvement Projects (EIPs). Some
of the examples are Rajasthan Urban Infrastructure Development Project (RUIDP), Tamil Nadu Urban Development Project-III (TNUDP-III), Kolkata Environmental Improvement Project (KEIP), etc. These are from Gurgaon, a town in the National Capital Region where the road has settled and cars fell in the ditch one after the other.

**Trenchless Market**

The projects indicated above are only the tip of iceberg. For nearly half of the 602 districts of India, such projects are needed and a large number of them are already under various stages of execution. The alternative to using trenchless technologies in these instances is utilizing open-cut methods — until now, a large portion of such projects were being done by using these methods. Space paucity (both over and under ground) and the successive failures of networks are now forcing the use of trenchless applications in a big way. The difficulty, however, is the non-availability of such service providers in sufficient numbers, which leads to the adoption of fewer trenchless activities or delays in the project executions. The monitary valuation of some of such projects can be seen by visiting the various project authorities’ Web sites. A substantial part of these project funds is expected be applied toward trenchless applications.

Application-wise, the largest need for trenchless techniques is in the water and sewer sector, where the networks are either failing badly or deteriorated to an extent where new installations are becoming a necessity. There are, however, lines where rehabilitation work can still be done and even this work is substantial.

An interesting fact to note is that although India has a large population of drilling rigs, microtunneling machines are still few and far between — despite the huge need for them. For an example, in New Delhi alone a substantial length of various diameter pipelines needs to be installed by microtunneling and pipe jacking methods, as open-cut has been completely ruled out in those cases.

The next popular application of trenchless is in the oil and the gas sectors, where the networks are not as old as the water and sewer lines and are presently under development. Naturally in this case, the new installation techniques are more applicable and some of the new drilling rigs of larger size and push/pullback capabilities have started arriving in India because of these projects.

One such job under construction is at Paradeep in Orissa. With the growth of oil and gas pipeline networks, such projects are expected to continue to increase. Although the lines for oil and gas are not that old, there are lines like HBJ, where the rehabilitation need is apparent. The Indian Society for Trenchless Technology (INDSTT) has been interacting with different project owners and service providers and has been promoting the application of trenchless techniques in all such projects.

**Conclusion**

The Indian trenchless market is now on the path of growth and expansion, with the project owners realizing that these techniques are useful and, in certain cases, they are the only way to get the projects done. Global trenchless service providers need to take notice of this market, as the magnitude of projects available in the Indian markets is substantially large. The low wage economy that is prevalent in India, however, presents a challenge for the global stakeholders but the opening markets have somewhat mitigated such risks to certain extent.

Other positive points are the stable currency and the democratic governance systems. In addition to these presence of INDSTT for the last eight years has lent substantial support to the global trenchless service providers to achieve the market presence and networking. Further, as the demands for such services are rapidly growing today, there is need for more trenchless service providers and specialists. One must therefore consider expanding in the Indian markets for a better future.

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