

## Chapter 10

# The Knowledge Vehicle (K–Yan): Sustainable Value Creation by Design

**R. C. M. Reddy**

*IL&FS Education and Technology Services Limited, India*

**Tamanna M. Shah**

*IL&FS Education and Technology Services Limited, India*

### ABSTRACT

*The world today is in a state of digital flux where the rapid spread of technology demands young people to stay au courant with new skills and approaches. India, set to become a young nation by 2030, will face the digital challenge if policies are not steered to realize the bottom-up approach to progress that clubs traditional teaching methods with technology. As a user-centered social design, K-Yan transforms a mix of products and services to a sustainable device, while still being economically successful. It captures the valorization of existing social resources/knowledge and its digitization under K-Yan. K-Yan exhibits a sustainability shift from a technological and product-related innovation to a broader techno-socio-cultural innovation. This chapter explores K-Yan as a design for social inclusion and equality that combines the triple bottom line approach with ICT to generate sustainable value.*

### INTRODUCTION

*It's not about the world of design; it's about the design of the world. – Bruce Mau*

In a world that is experiencing the ‘.0’ revolutions, it is deemed important to see how our schools and the education system are coping with the imminent pressures of the new world. ‘*School 2.0*’ is the next big thing the world is racing towards. Schools worldwide will experience a radical shift in the way our children learn and experience life skills. This would require a healthy valorisation of existing educational resources and knowledge. In the world of work, the jobs that exist now did not exist a decade ago. The big shift, therefore, requires the children and youth to be equipped with new-age skills which are essentially a blend of knowledge of work, thinking tools, digital lifestyles and research in learning.

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India has a competitive advantage of a diverse talent base, yet the threat of unemployment looms large. While the world ages, by 2022, India will be adding 89 million people to its workforce. It is expected that by the year 2020, more than 65 per cent of the Indian population would be in the working age group thereby giving India a large demographic dividend. Such a demographic dividend would contribute positively only if there are matching economic opportunities to absorb this dividend. However, while offering an economic opportunity to fast track such growth, India will have to urgently address the problems of low school completion rates, strained facilities and questionable practicality of the curriculum.

India, which is at the cusp of this paradigm shift, is thus appropriately preparing its future youth to embrace the information and communication revolution. With over a quarter of the world's population, India, now uses the internet on a regular basis and continues to record bumper growth for all things digital year after year for over a decade. The numbers are ever rising, though around 10 per cent, i.e. 1.063 billion Indians are still offline, trailing only the United States and China in the number of internet users. Coupled with the low penetration rate, the country also has a low 129<sup>th</sup> rank among 166 countries worldwide in the 2015-16 Information and Communications Technology Development Index (IDI).

Learning for vast population in India is largely limited to primary education at schools with rare opportunities for adult-learning. Large number of schools, almost 80 per cent (Jha and Jhingran, 2005), have only basic physical infrastructure with few dedicated teachers. While technology in education is making advances in certain premier schools catering to a negligible proportion of population in India, there is a huge student populace who is yet to experience the same: a fast-moving Digital Divide is indeed cutting across the social fabric of India.

Under such circumstances, it is essential to understand how the implementation of technology in education would improve learning outcomes for children, and thereby positively impact the entire education system. This chapter examines an educational technology tool called K-Yan (knowledge vehicle) which creates an ICT-based creative learning environment.

First, this chapter considers the challenges faced by the Indian schools and discusses how the implementation of ICT in the schools is an opportunity to solve some of the problems faced by the Indian school education system. Within this discussion, this chapter then provides an extensive review of other similar solutions like K-Yan and also a review of the past technologies used for this purpose.

Taking off from this conceptual examination, the chapter thereafter, within a theoretical framework, systematically analyses the impact and value of K-Yan in our education system. The chapter also examines few case studies that provide an evaluation of the utilization of K-Yan for creative learning in real life, in order to ascertain its contribution to the Indian Education. Lastly, the chapter offers an overview of the overall impact of K-Yan and the resultant sustainable value creation from multiple angles: economy, society and people.

## **BACKGROUND**

The Indian school education system is one of the largest and most complex in the world. The education system has around 1.3 million schools and more than 230 million enrolments (MHRD, 2016). "A critical aspect of the Indian school education system is its low quality. A common feature in all government schools is poor quality of education, shortage of teachers, weak infrastructure, and an inadequate pedagogic attention" (Bajpai and Goyal, 2004, p. 2). These failures of the education system are one of the many reasons for the persistent income inequality. Education is a source of nurturing and generat-

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