Making of Sampark Smart Shala™
The first step in the design thinking process is to define the problem as human centrically as possible. The Sampark Design Thinking Research Centre held a series of workshops with multiple stakeholders and conducted extensive secondary research over 5 years, which led to six key insights:

Our post-facto study of this failure pointed to six possible reasons:

1. Increased investment did not lead to better learning outcomes
   First, though the budget for elementary education in India has significantly increased over the last decade, learning outcomes have steadily declined. Thus, an increase in government expenditure alone is unlikely to improve learning outcomes. Besides, creating a non-government parallel system for these children is not only financially and logistically impractical but also not a guarantee of success. What we need is appropriate, frugal innovation – ideas that leverage what we have, rather than wish for more or different things.

2. Learning zone is not the focus
   Second, there are numerous challenges in the Indian educational system at the bottom of the pyramid such as inadequately qualified and unmotivated teachers, high absenteeism, a flawed pedagogy, multi-grade classrooms and poor infrastructure. From the long list of issues, we need to prioritize and focus on one or two that would create maximum impact.

   Learning outcomes depend on the interface of the teacher and the child in what we call the ‘learning zone’. We needed to find ideas that will ignite this learning zone and deliver better outcomes despite the challenges of the existing system. All this must be delivered using low-tech innovations that are simple to understand and execute, and optimize/reduce the teacher’s workload, rather than increase it.

3. Available solutions are not easy-to-scale
   Third, while many innovative and well-meaning educational initiatives are underway across the country, we realized that many of them, being resource intensive, could not be scaled up.
   Some ignore the ground realities surrounding children studying in public schools. The answer to the problem of scale pointed to the need for innovation in execution as a critical element in the transformation program.

4. Knee-jerk ed-tech and digital interventions
   Fourthly, ed-tech – a sunrise sector in many developing nations, with its promise of solving the problem of scale are being leveraged in a knee-jerk manner, without understanding the context and environment in which they are slated to operate. For example, much of the teacher-centric audio-visual/digital content assumes that teachers are evolved self-learners, which is actually not the case.

5. Lack of local, context-specific solutions
   Fifthly, centralized or global solutions that are being tried out in many parts of the world, including India, are missing the point or context-specificity. This standardized approach towards solving the problem of learning outcomes is not working, except in pockets of excellence.

6. No frugal solutions exist
   In the rare cases where there is a solution that fits the size and scale of the problem, its founders expect either parents or the government to pay for this solution. In other words, available solutions are not frugal and hence not affordable.
Framing The Question

Finally, we came up with a simple, nuanced problem statement: How to create impact at scale, ensuring transformational change in learning outcomes among over 20 million children by leveraging the strengths of the existing system and adding a dose of innovation to overcome its weaknesses?

We set up Sampark Design Thinking Research Centre to find the answer. Over the years, it has become a research hub for global thinkers ideating to solve development problems at scale. Using an iterative process of framing the question, gathering inspiration, generating ideas and making them tangible, testing to learn and scaling up, the foundation has been able to discover ideas that work, consistently and at scale.

There was a need to enthuse, encourage and enable the teachers to create a 10x increase in learning outcomes. This could be done by putting teachers first. There are many different approaches to solving the learning outcome problem; however, we decided to focus on the innovation at the interface of a child and the teacher by putting teachers at the heart of our plans so that they own and drive the change and claim credit for significant increase in learning outcomes.

Design Inspirations

The Indian socio-political milieu offered five inspirations that became the cornerstone of designing Sampark's education intervention:

1. Teachers First
   The FIRST inspiration came from the highly-acclaimed management book Employees First, Customers Second: Turning Conventional Management Upside Down written by Mr. Vineet Nayar, founder, Sampark Foundation. The idea of empowering employees resulted in HCL's transformation from a $0.7 billion company in 2005 to a $4.7 billion Global Technology Services Company with over 85,000 employees across 32 countries in 2013.

2. Bollywood
   The second inspiration was drawn from the world's largest movie industry, producing approximately 2,000 films yearly. Bollywood formula movies are characterised by lyrical songs, colourful costumes, dance routines, dramatic story lines, and happy endings. Time and again, we were struck by much draw the movies have, and how children could repeat the song and dance numbers from memory, regardless of whether they understood the meaning of the lyrics.

3. Mary Poppins
   The third inspiration was the 1964 musical fantasy film Mary Poppins, a movie that has upheld the values of triggering children's imaginations as a way of sparking their learning, for generations now. Besides, in a popular Hindi blockbuster, actor Vidya Balan galvanised a dormant community using just her voice on the radio. The idea was to create an imaginary teacher and use children's natural curiosity to ignite learning using audio. Audio has the power to fire a child's imagination and change mindsets, it is simple and easy to execute at scale in rural areas and helps overcome teachers’ inability to teach difficult topics.

4. Battery
   The fourth inspiration was surprising, given that the founder had been the CEO of a large IT company for nearly a decade. One would have thought that he would find a way to get computers and connectivity to villages so children could download the latest content and learn from it. Instead, we were struck by how villagers recharged their cell phones, in the absence of electricity, by a ‘dynamo’ powered by the rotating wheels of a bicycle. We thought that we should use such a mechanism to power an audio device with a big speaker that a rural teacher could take to class.

5. Teaching Learning Materials
   The final inspiration came from extensive desk research. In study after study it was revealed that students in elementary grades retained nearly 70% of what was being taught in the first 10 minutes and only 20% in the last 10 minutes of a class period. However, adding visual aids and stories increased the retention dramatically, sometimes even by 250%. There was a need to design TLMs relevant to a multi-grade classroom in rural areas that could be combined with lessons in the audio device delivered by the imaginary teachers.
5 Design Digital Choices

These inspirations and ideas were converted into the following 5 design choices to leverage DIGITAL elements to create a disruptive, inclusive innovative program.

1. Audio over Video
   Digital education is dominated by interactive video content. However, we were clear that this would not work. Public schools don’t have easy/uninterrupted access to electricity, internet connectivity and expensive digital gadgets. In comparison to video, which was expensive at the point of delivery, audio was available, affordable, needed low skills to use and most importantly, it left space for a child to imagine.

2. Offline over Online
   It is easiest and most cost-effective to push out content using the internet; however, internet connectivity is an issue for most rural locations. Even if internet connectivity is available, teachers do not want to use their data packs for downloading teaching content.

   We had to make usage and access easy for teachers – offline apps with compressed videos that do not need active internet connections seemed to be the best answer. These apps could be installed on teachers’ phones using peer sharing during face-to-face training events.

3. Smartphones over Computers
   Access to computers is not easily available in public schools in villages, Tier-2 and Tier-3 towns. If at all available, not everyone knows how to operate them. On the other hand, the penetration of low-cost smart phones is quite high, even in remote locations. So, choosing to keep the mobile phone, and not the computer, as an access point for our stakeholders made good sense.

4. Personalization over Standardization
   The unfortunate truth of our times is that teachers are not respected. They are treated as one big mass of people who are uninterested in teaching and in any change for good. Every year, a new program will be forced on them – all they are perceived to do is wait for yet another idea to show up next year.

   The foundation worked to change this. First in trainings, every teacher received a certificate of excellence signed by the founders with their names on it. Second, a BOT in the Sampark Smart ShalaTMapp that not only addresses the teachers by their first names but also uses the formal term of address ‘jee’ which, in India, denotes respect.

   For teachers, our digital reach denotes both a sense of importance as well as seriousness, something that the standardized approaches – including apps meant for teachers – lack. The teachers responded to such personalization initiatives with 10x higher enthusiasm than we expected.

5. Multimedia workbooks over dead textbooks
   Despite the high quality of textbooks, they continue to be dull and boring, with too much content and no creativity. The Sampark Smart Shala™ books that we introduced in the program are multimedia workbooks equipped with QR codes. Learners can scan the code on their low-cost smartphone to see a lesson come to life via an animation or video. This feature adds excitement to learning at home and in class.
5 Disruptive Inclusive Innovations

And finally Sampark came up with its five innovations that are core to the Sampark Smart Shala. These innovations are transforming the classroom transactions in 76,000 schools in six states in India.

1. **Sound Box**
   The sound box is a rechargeable audio device that uses a voice mascot, ‘Sampark Didi’ and 112 carefully researched lessons with songs, music and games. The sound box is an essential listening and speaking catalyst for first-time English learners to teach English using LSRW (Listening, Speaking, Reading Writing) and a ‘whole language’ approach.

2. **3-D teaching and learning materials**
   These are specially researched to work in rural classroom conditions, help explain concepts in linear steps: from simple to complex and from concrete to abstract. This makes learning easier.

3. **Board games**
   With 7 levels of complexity these are specially designed games to enable learning even when a teacher is not around.

4. **Multimedia workbooks**
   Workbooks allow a child to practice what he/she has learned. Besides, these provide real-time access to online and offline video lessons by scanning the QR codes embedded at the end of each topic thereby improve learning outcomes.

5. **Sampark Smart Shala™ App**
   This is a free BOT-enabled mobile app, that works without the internet and is customised for teachers to teach children effectively. Loaded with animated videos, games, puzzles and worksheets, it interacts with the users to give them a personalized experience of learning. There are over 200,000 teachers on its platform today.

**The Sampark Smart Shala Program™**

Instructive strategies are governed by the pupil’s background knowledge and experience, situation, and environment, as well as learning goals set by the student and teacher. The program is offered in the form of mock classrooms wherein teachers can see a lesson plan as it should be explained in class. This helps teachers, who are first-time learners of the concept themselves, learn in a safe and non-judgemental environment.

Based on inputs from teachers, observations of classroom practices, a study of textbooks from various States, adoption of the NCF (National Curriculum Framework) guidelines, as well as some of the internationally accepted proven teaching programs, the Sampark Smart Shala™ is today a proven pedagogy that drives significant improvement in learning outcomes and follows 4 key themes:
1. Concrete before abstract
Teach in concrete form using TLMs (Teaching learning materials) before teaching the abstract concepts (using workbooks).

2. In the right sequence
Teach in the right sequence (using the Sampark Smart Shala™ App) then engage children in activities (using board games) before practicing (using the workbooks).

3. LSRW
Teach Listening and Speaking (using the audio box) before Reading and Writing (using the workbooks).

4. Known to unknown
Teach by setting local context (using the Sampark Smart Shala™ App), from known to unknown (using the audio device) and simple to complex (using the workbooks).

A. English Foundation Program
- The English Kit comprises concrete material to introduce the concepts of primary English syllabus. It also includes an audio device, flash cards, theme calendar, letters, progress charts and posters.

- The audio device is an aid to the teacher and helps to deliver the lessons with an emphasis on listening, speaking, reading and writing. The focus is on listening and speaking through the rhymes, stories, and activities that are rooted in the local context and takes into consideration the classroom environment.

- The TLM box has additional aids and activity tools such as flash cards, theme calendars, letters cards etc.

- The teacher’s reference booklet has class-by-class lesson plans to cover the entire syllabus using the LSRW approach. It also has ideas of assessing the children at the end of each conceptual module.

- The Sampark Smart Shala App Videos: Each reference video explains the concepts to the teachers through an offline app that can be accessed by them on their handheld devices, in an offline mode.

- The Sampark Smart Shala™ Workbooks are specifically designed to provide ample opportunity for listening and speaking by the students after which they read and write the same in the workbook. This is enabled with QR Codes that lead to the videos of the concepts.

Students build a strong foundation in English using their mother language as a base. This bilingual approach also builds the capacity of the teachers who are not well-versed in English, as is the case in most primary schools.
We have adopted the approach of Listening-Speaking-Reading-Writing (LSRW) which has been emphasized by NCERT and suggested in NCF 2005 guideline. The process of learning is defined in following 4 stages:

**Stage 1**
The first stage for the student is aural-oral. The primary effort is to expose children to spoken English so that they can soak in the sounds of the language and the structures without the interference of grammar rules. This means that the teacher has to speak in English in the class. There is no textbook – students learn through ‘teacher talk’. Basic phonics sounds and letter recognitions are introduced to children. Firstly, starting with a story and rhyme followed by activities, it builds the learner’s vocabulary beginning with familiar words in Hindi and understanding them in English. For doing this, a thematic approach is adopted through which the vocabulary is increased. Second come the alphabets that are introduced along with the themes and students learn to identify the alphabets in the text shown and are able to recognize them.

**Stage 2**
As comprehension increases and some confidence develops, students will respond in a single word or in a phrase. Workbooks provide opportunities to start on the writing readiness skills. Along with alphabet recognition, the phonics sound of the alphabet is introduced – this aids the understanding and use of alphabet sounds in words. Students learn to form words using the sounds of the alphabet and are thus able to create new words, adding to the vocabulary.

**Stage 3**
Reading skills follow, with an emphasis on easily decodable words, in familiar contexts, and with picture clues. Sufficient exposure is ensured for high frequency sight words. Using these, students learn to form simple sentences and by reading them aloud the understanding is developed.

**Stage 4**
Student-driven reading and writing activity – ideally, by the time a student is in 4th std.

**B. Math Foundational Program**
As per the NCF 2005 guidelines, we have developed the following Math Kit for the program:

- The Math Kit contains teaching learning materials wherein concrete materials can be used to introduce the concepts of primary Math syllabus. The kits have counters, play money, place value strips, work mats, line numbers, posters, board games and progress charts for a standard sized class.

- Teacher’s reference booklet: Class-by-class lesson plans to cover the entire syllabus using the concrete to abstract approach. It also has ideas of assessing the children at the end of each conceptual module.

- Sampark Smart Shala™ Workbooks: are specifically designed to provide ample practice and opportunity to do activities based on the ‘concrete and abstract’ methodology. The workbooks are aligned with the state syllabus.

- The Sampark Smart Shala™ Math Videos: Offline videos are available on teachers’ mobile phones, to enable them to access and understand concepts after the trainings.