



The Vivekananda Secondary Education & Skills development Megaproject

(Skill development + Secondary schools)

A Hybrid scheme

Acknowledgements



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5. Late. Mr. RL Kumar (Chief Project Architect ... Concept of elegant, low cost architecture within 30,000 hub schools)
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25. Dr. Arvind Panagariya (Former Vice Chairman, NITI Aayog) ... Published article on Farmer distress
26. Prof. Sugata Mitra, Self Organized Learning Environment (SOLE) Project ... published ideas

Project Designer Details



Ashish Puntambekar has over 27 years of experience working with some of the finest talent globally in the Energy and Infrastructure sectors and specifically in the area of large Infrastructure project design and strategic design where he is a specialist.

He has been lead designer for the Defence Industrial Corridor (DIC) project which has received an investment commitment of Rs 40,000 Crores from the Govt of India in the Feb, 2018 union budget. The Prime Minister personally launched this defence equipment manufacturing project and two large DICs will now to be built at Bundelkhand in Uttar Pradesh and along the Chennai – Bangalore route in project mode. Likely commissioning date of both DIC's is Jan ' 2027.

Before setting up as a private consultant, Ashish served as head of strategic planning for the technology group at Reliance industries. He has been the convener of the company's International Advisory Board (IAB) with Harvard Economists, Former G – 7 Finance Ministers, Foreign Ambassadors and Defence Analysts as members. His expertise in the Geopolitics of Petroleum, his deep understanding of Middle East history and politics and his knowledge of technology shifts in the Energy Industry have earned him a name in the energy analyst community internationally. He is an expert invitee at the Asian Development Bank (ADB) where his work on Urban Equity Withdrawal based financing has been presented. He has also been an invitee speaker on TEDx to talk about ideas that can triple the size of the Indian economy by 2030-32. Apart from this he has written articles on Geopolitics, Energy Security & Military - Industrial strategy for the Indian Defence Review magazine.

Ashish has worked in a number of diverse roles. He started his career as a project engineer working in a large petrochemical complex and then moved on to various increasingly senior engineering, business and senior management positions on assignments involving Power plants , Ports, LNG Terminals , Oil Refineries and Pipelines. He has also worked as an Energy Derivatives Trader for a period of 5 years where he has traded crude oil flat price and petroleum product derivatives on all major commodity exchanges and OTC Markets / Investment banks around the world.

Over the years, he has designed several multi billion dollar projects which are under active consideration by the Indian Government :

1. The Defence Industrial Corridor Project
2. The Indian East Coast Energy Corridor Project
3. The Vivekanand Secondary Education & Skills Development Megaproject
4. The Mumbai Megaproject – Eastern Waterfront and Artificial Islands

Ashish is the initiator of the Construct India Mission which has received official sponsorship from the Ministry of Commerce, Govt. of India. The Construct India Mission together with its financing plan now form the backbone of the Rs. 100 Lakh crore National Infrastructure Pipeline (NIP) plan of the Govt. of India. The NIP has been designed with the objective of creating 45 Million New Jobs in the construction sector in India by 2027.

Of all the projects he has designed, the Vivekanand Secondary education and skill development project is his flagship and favourite project. This is the project that can transform not just India, but the whole of South Asia through its broad and expansively tolerant philosophy which comes from Swami Vivekanand.

Ashish has a bachelors degree in Mechanical Engineering and a Masters degree in International Business.



- Executive Summary
- Overarching ideas ... Vivekanand Education Megaproject
- Urgent Need For Project
- Vivekanand secondary education & skills development megaproject ... as a Solution
 - ✓ [Which problems does the Vivekanand megaproject solve ?](#)
- Megaproject (Part 1) ... Solving the immediate operational problem of fund flow delays to 8,00,000 + schools
- Megaproject (Part 2) ... Reducing the massive gap in secondary education & skill capacity ([Blueprint](#))
- Megaproject (Part 3) ... Additional facilities for children with Special Needs
- Megaproject (Part 4) ... 3,000 schools in Bangladesh
- Megaproject (Part 5) ... Creating 30,000 medium + 6,21,805 small and dense forests
- Innovatively designed financing scheme
 - ✓ Capex financing plan
 - ✓ Opex financing plan
- Fast tracking the Vivekananda project ... Large projects office under the PMO
- Tentative project schedule
- What will success look like ?
- Support required from government
- Thank you



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Vivekanand Secondary Education & Skills development Megaproject

Executive Summary

What are the Major problems in India's School system ?



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1. Money is reaching Schools 6 -7 months late

- ❑ This delays in Funds arrival in schools is lowering the productivity of 200 Million students and 5.23 Million teachers across India

2. Very High Dropout Rates

- ❑ India currently has a shortage of **6,21,805** Secondary schools
- ❑ About **39 %** of children drop out of school after class V. Another **50 % +** drop out by class VIII.
- ❑ In all upto **89 %** of children drop out of school before Class IX as there are not enough Secondary schools to go to

3. Poor Teacher Quality

- ❑ 2007 NUEPA* data states that 46 % of India's teachers have not studied beyond class XII and 25 % have not studied beyond class X

These are official estimates.
Actual shortages are much higher

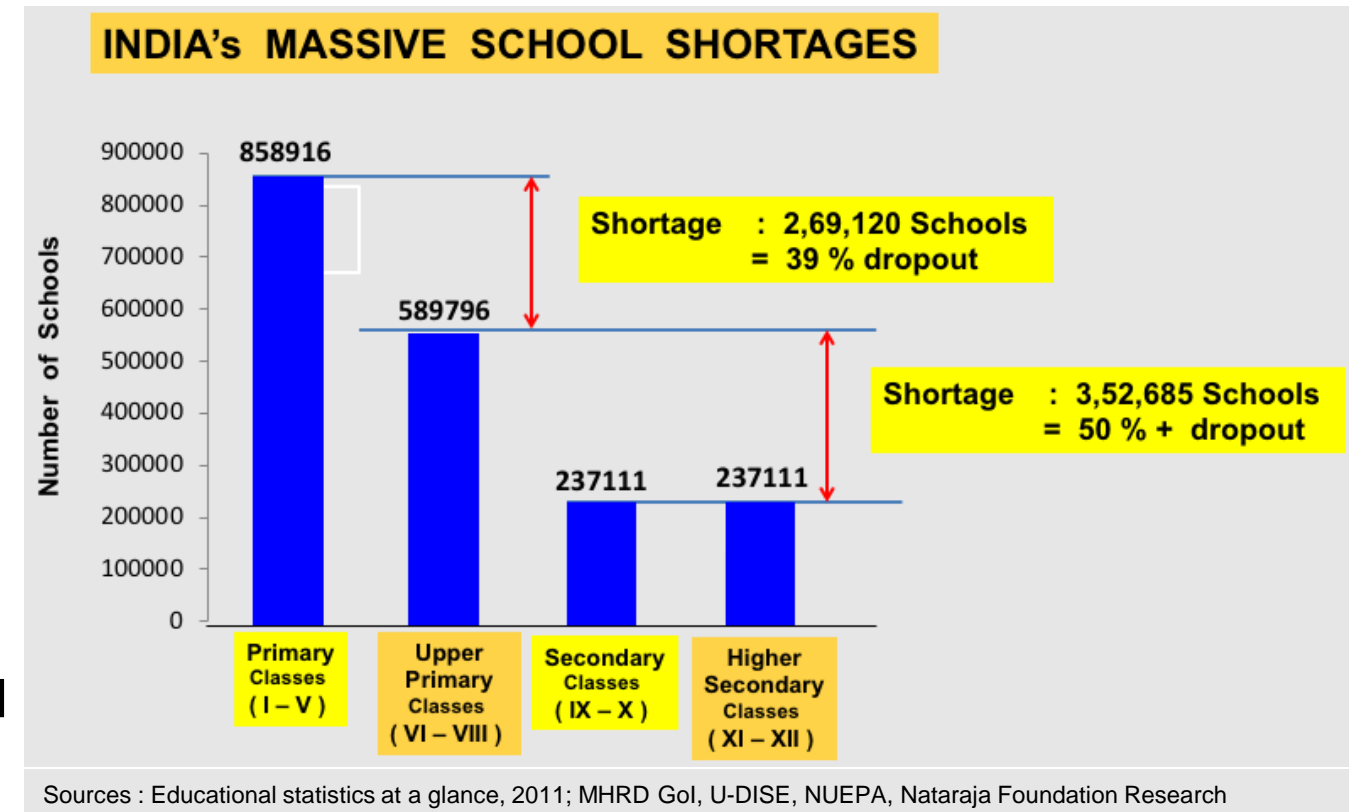
4. Huge shortage of qualified teachers :

According to official estimates India has a huge shortage of qualified teachers :

- Primary School (Teacher Shortage) : **9,07,585**
- Secondary school (Teacher Shortage) : **1,06,905**

5. Creation of low quality teachers ... leading to Women's safety issues

- ❑ Teacher shortages are leading to the recruitment of Poor quality people, This is adversely affecting Students Moral Standards
- ❑ Neglect of Teachers over the last 50 years ... Is resulting in rise in violent crimes against women in India



*. NUEPA 2007 by Arun C Mehta . The number of teachers then was 4.7 Million. Today in 2018 India has 5.23 Million teachers

6. Lack of Focus on Secondary Education & Skills development

- ❑ Lack of Focus has resulted in a huge shortage of **119** million Skilled people across various industries

Proposed Solution ... The Vivekanand Secondary Education & Skills development Megaproject



Vivekananda Secondary Education & Skill Development Megaproject

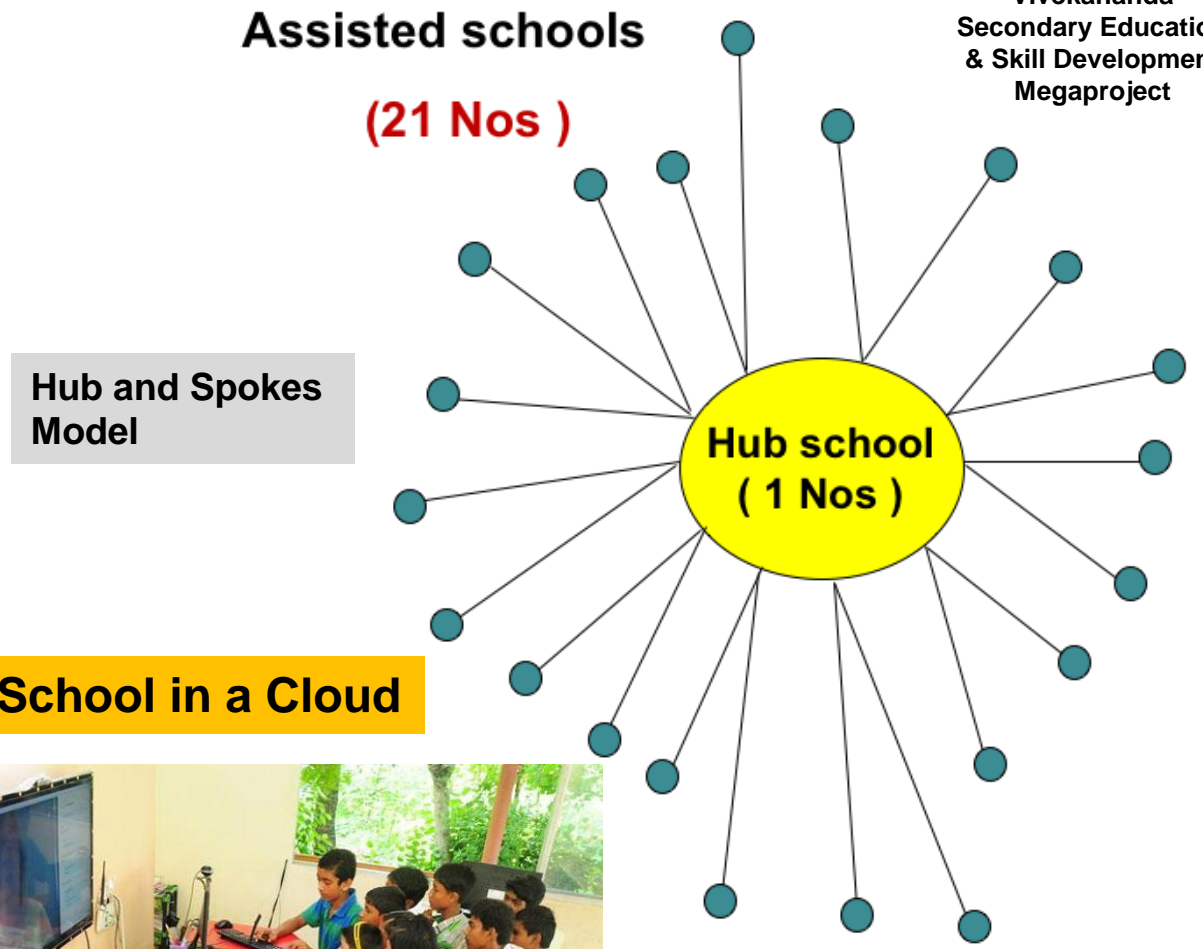
Project is designed to Solve several problems simultaneously

Short Term Solutions :

- 1. **Six month to Six Seconds Project** ... Direct fund transfer & Automatic Budget approval system improves learning outcomes in 8,58,916 schools
- 2. **Vivekanand School in a Cloud**
 - ❑ Project will connect **6,21,805** Existing schools that lack Upper Primary & Secondary education facilities using 4 G / 5 G Telecom Technologies ... within 3 years

Medium Term Solutions :

- 3. **Construction of 30,000 New Secondary Schools ... to Reduce Dropout rates**
 - ❑ Project will construct **30,000** New Secondary Schools & Skills development centers ... as Hub Schools
 - ❑ Each school will share its resources with **21** existing schools that lack facilities. **30,000** New Hub schools will therefore cover ... **6,21,805** additional locations
 - ❑ Entire system will run on Digital Vouchers ... to provide Free education to over **150** Million children. Poorest children will be preferred for admission
- 4. **New Schools to have “ Teacher Centric ” design**
 - ❑ New Schools will recruit **2.2** Million additional Teachers & Skills instructors
 - ❑ Teacher centric design ... World class facilities to be built for Teachers
 - ❑ Teacher centric design will attract the best minds back to education
- 5. **Combining Secondary Education with Skills development**
 - ❑ Skills Training (2000 Courses) will be introduced after class VIII to create Job ready candidates after class XII like they do in Canada



Vivekanand Project will provide high quality education totally free of cost to over 150 million children .

Digital Vouchers will ensure that the Poorest children are preferred for admission

Project Socio - Economic benefits ... and Investment Multipliers



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1. Project will lift **300** Million people out of poverty over the next 15 years
2. It increases the efficiency of 192 Million children and 5.23 Million teachers within 8,58,916 existing schools
3. It uses 4G / 5G Telecom technologies to connect 6,21,805 schools which today do not have secondary education facilities
4. It will prevent 150 Million children from dropping out of School
5. It will produce 400 Million Skilled workers by 2032 ... as Schools will also be Skilling hubs
6. It creates **2.2** Million New Teachers jobs and another **4** Million New jobs in industries supporting the education sector
7. It will earn US \$ **6.8** Billion each year in Foreign Exchange after 2032
8. It will fundamentally improve Construction quality & create a New Trillion dollar construction industry in **6,00,000** villages across India in low cost, elegant Vernacular architecture

Vivekanand Project will have an investment Multiplier impact of US \$ 615 Billion on the Indian Economy while adding over US \$ 3 Trillion to GDP over the next 15 years



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Where is the money ... to build 30,000 New Schools ?

Education Megaproject requires **14.95** Lakh crores over the next **10** years.

12 – 14 different Sources of finance have been identified to potentially raise Rs **100.55** lakh crores :

Financing Sources for Construction of 30,000 New Schools + Infrastructure to assist 6,21,805 existing Schools

A. Non Tax Based Financing

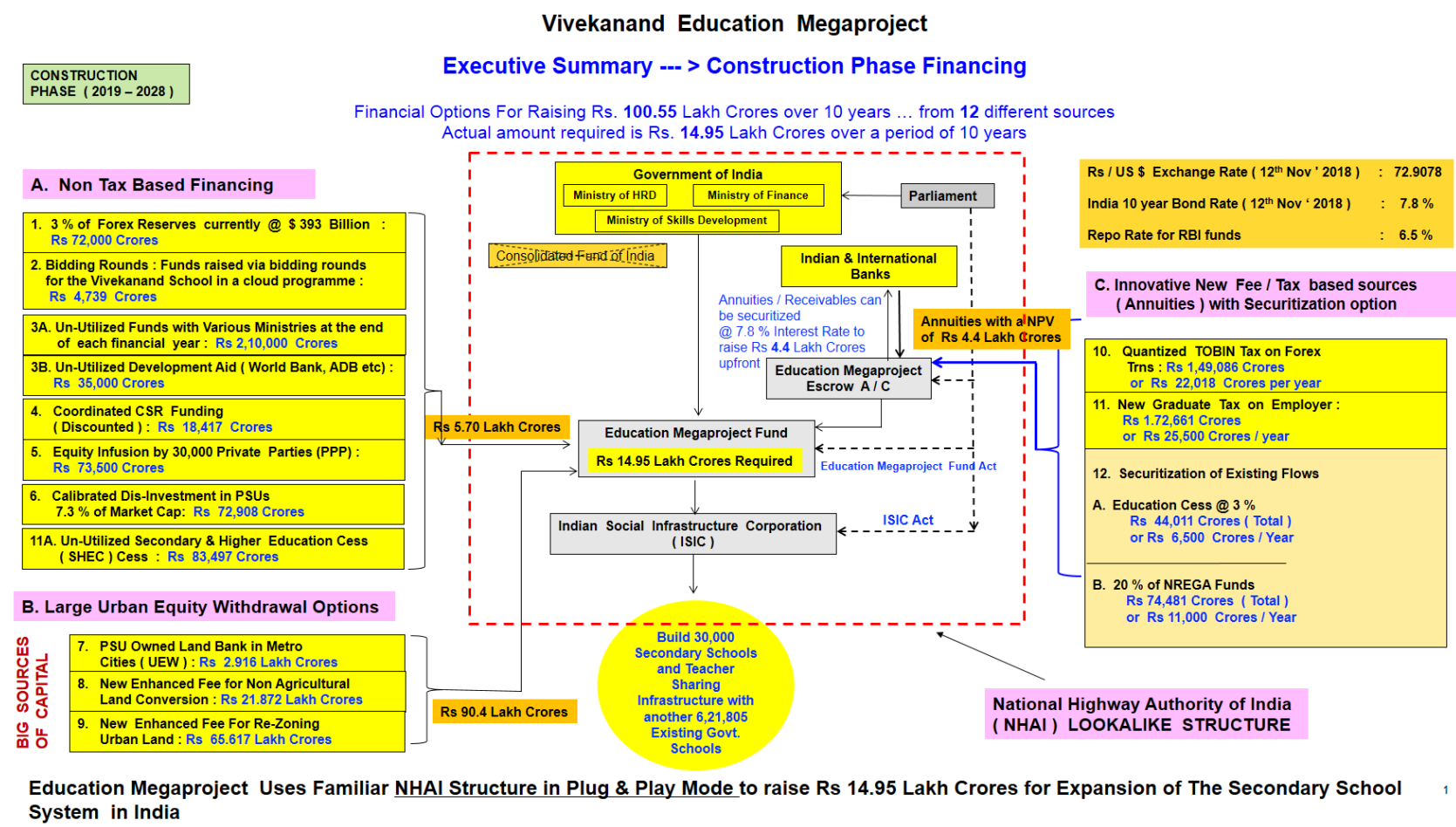
- ✓ 3 % of Forex Reserves
- ✓ Bidding Rounds for School in a cloud
- ✓ Un-Utilized Funds with Various Ministries
- ✓ Un-Utilized Development Aid (World Bank, ADB etc) :
- ✓ Coordinated CSR Funding (Securizaion facility)
- ✓ Equity Infusion by 30,000 Private Parties in PPP bidding rounds
- ✓ Calibrated 7.3 % dis-investment in PSUs
- ✓ Un-Utilized Secondary & Higher Education Cess

B. Large Urban Equity Withdrawal Options

- ✓ Sale / Long lease of PSU owned land bank in Metro cities
- ✓ New Enhanced Fee for Non Agricultural Land Conversion
- ✓ New Enhanced Fee For Re-Zoning urban Land

C. Innovative New Fee / Tax based sources

- ✓ Quantized TOBIN Tax on Forex transactions
- ✓ New Graduate Tax on Employers
- ✓ Securitization of Existing Flows for Rural schools ... Education Cess and 20 % NREGA funds



Reference :
Please refer **16** page Capex financing note for detailed description of financial sources and structuring options

Adequate financing exists. 10 year planning horizon provides huge flexibility for Financial innovation

Where is the money... to Operate 30,000 New Schools ?



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Financing Sources for Operation of 30,000 New Schools + Sharing Teachers with 6,21,805 Existing Schools

7- 8 innovative Opex financing pools have been identified to potentially raise Rs 2.21 lakh crores each year

A. Non Tax Based Financing

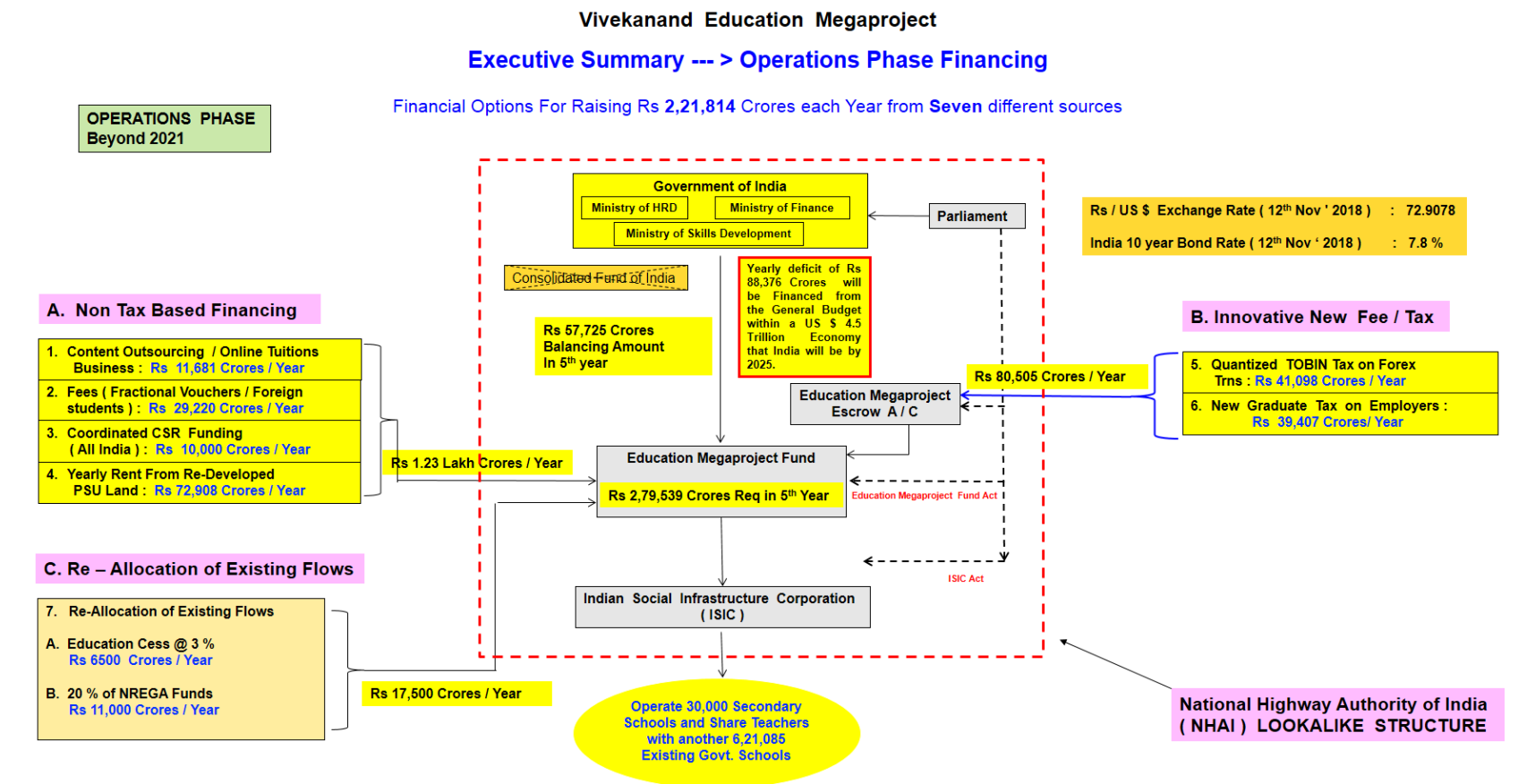
- ✓ Content outsourcing / Online Tutions ... Businesses run by teachers
- ✓ Fees from Fractional Vouchers / Foreign students on 150 % vouchers
- ✓ Coordinated CSR Funding (All India) on yearly contribution basis ... Starting in 2029
- ✓ Yearly rent from Re-developed and leased PSU land banks

B. Innovative New Fee / Tax

- ✓ Quantized Tobin Tax on foreign transactions each year ... Starting in 2029
- ✓ Graduate Tax on Employers each year ... Starting in 2029

A. Re-Allocation of Existing Flows

- ✓ 3 % Education Cess each year ... Starting in 2029
- ✓ 20 % NREGA funds for Rural schools each year ... Starting in 2029



Education Megaproject uses familiar NHA Structure in plug & play mode to raise Rs 2.218 Lakh crores from 7 innovative sources each year. Balancing amount required is small within a US \$ 4.5 Trillion Economy that India will be in 2025

Reference :

Please refer 9 page Operations financing note for detailed description of financial sources and structuring options

Operating funds will not be a problem in a US \$ 4.5 Trillion economy that India will be by 2025.

Project Structure & PPP scheme ...



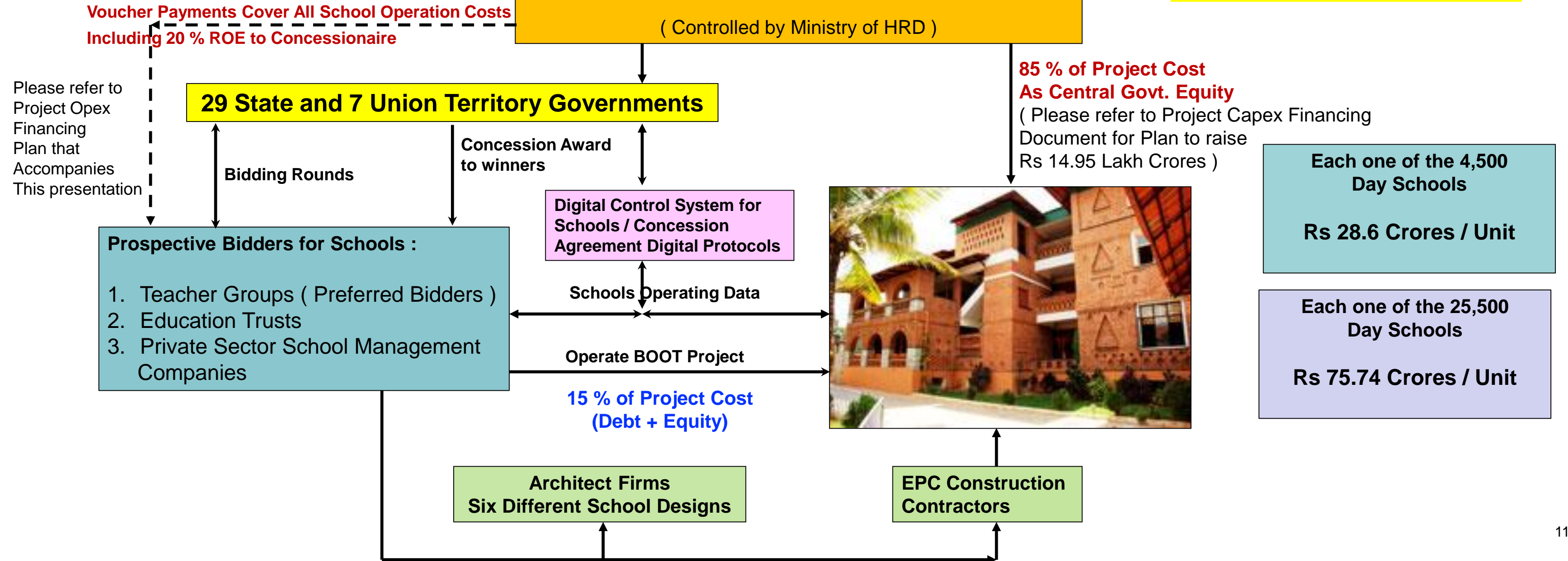
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Megaproject's innovative financing mechanism
Provides 85 % of Capex Financing and in addition
provides 70 % of Operating Costs by means of
Voucher payments to School Concession Winners.

After construction, Operational control is handed
over to State Governments. State Govts conduct
the bidding rounds and award concessions.

Central Govt remains project owner

PPP Scheme is designed to allow
Teacher Groups to Bid for Schools
At Minimum Upfront Capex



What will Success Look Like ?



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Success means ... Achieving the following Strategic objectives :

1. Improved learning outcomes in 8,58,916 schools ... As money reaches schools SIX months earlier
2. Connecting 6,21,805 schools with 4G / 5G Telecom Networks by 2023 ... For providing Secondary education
3. Increasing Annual investment in Secondary Education from Rs **4,215** Crores ... to Rs **1,45,000** Crores
4. Maintaining these Capex levels at Rs **1,45,000** Crores levels each year ... for **10** years starting in 2019
5. Combining Secondary Education + Skills development after Class VIII
6. Producing Job ready students after Class XII
7. Making the Teaching profession attractive ... for qualified people
8. Reduced levels of violent crime against women ... Through improved Teacher quality
9. Adding **3 Trillion US Dollars** to Indian GDP (2043) ... by Constructing 30,000 Secondary Hub schools by 2028

Vivekanand Education Megaproject ... Look and Feel (2028)



- ❑ Low cost, elegant designs @ Rs **1750** / Sq ft to be executed at 30,000 New School locations across 29 states & 7 Union territories
- ❑ Assisted schools at 6,21,805 existing locations to get similar architecture as part the Vivekanand school in a cloud
- ❑ All materials to be sourced locally ... Low carbon footprint
- ❑ Project to take elegant Architecture to over **6,00,000** villages ... to improve construction quality in rural India
- ❑ Project will provide stimulus to New Vernacular construction Industry ... to create a Trillion dollar business in Low cost housing
- ❑ Vernacular construction business will create **15 Million** New construction Jobs by **2025**



Projects by Architect : Late Mr. RL Kumar
Pictures Courtesy : Centre of Vernacular Architecture Trust , Bangalore
www.vernarch.com

Project will Define & Popularize a New, Low Cost & Elegant Vernacular Architecture Across India



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Detailed Project Presentation



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Overarching ideas

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Next Gen Education ... Thinking in terms of a US \$ 7.5 Trillion economy by 2030-32



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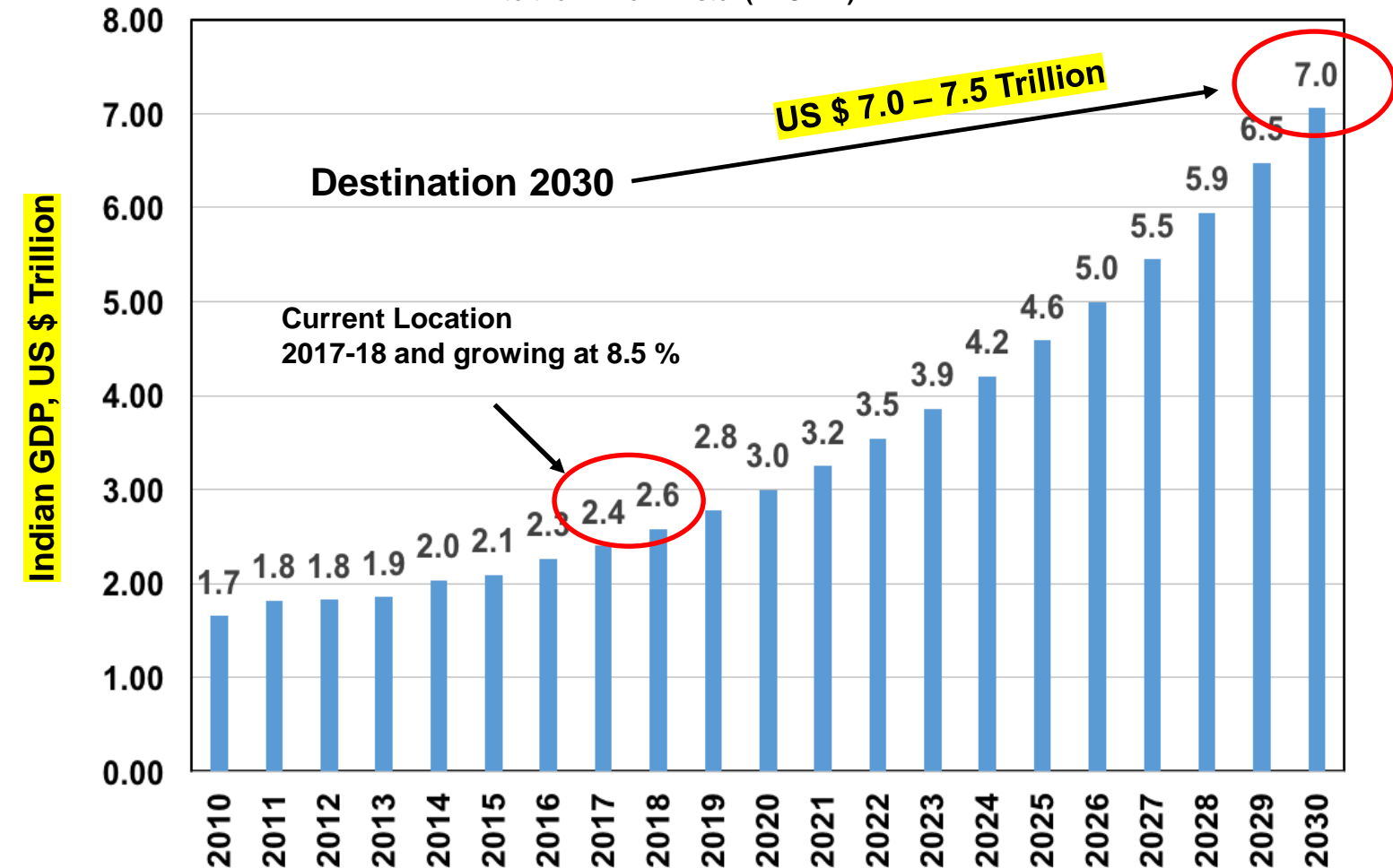
US \$ 2.5
Trillion (2018)

US \$ 7.5 Trillion
(2032)



“ India is expected to be a USD 6.5-7 trillion economy by 2030, and at the current exchange rate it would touch USD 10 trillion by 2035-40.

Dr. Bibek Debroy
Chairman of the Economic Advisory Council
to the Prime Minister (EAC-PM)



The Indian Economy is forecast to expand from a US \$ 2.5 Trillion Economy in 2018 ... to a US \$ 7.5 Trillion economy by 2032

Fundamentals

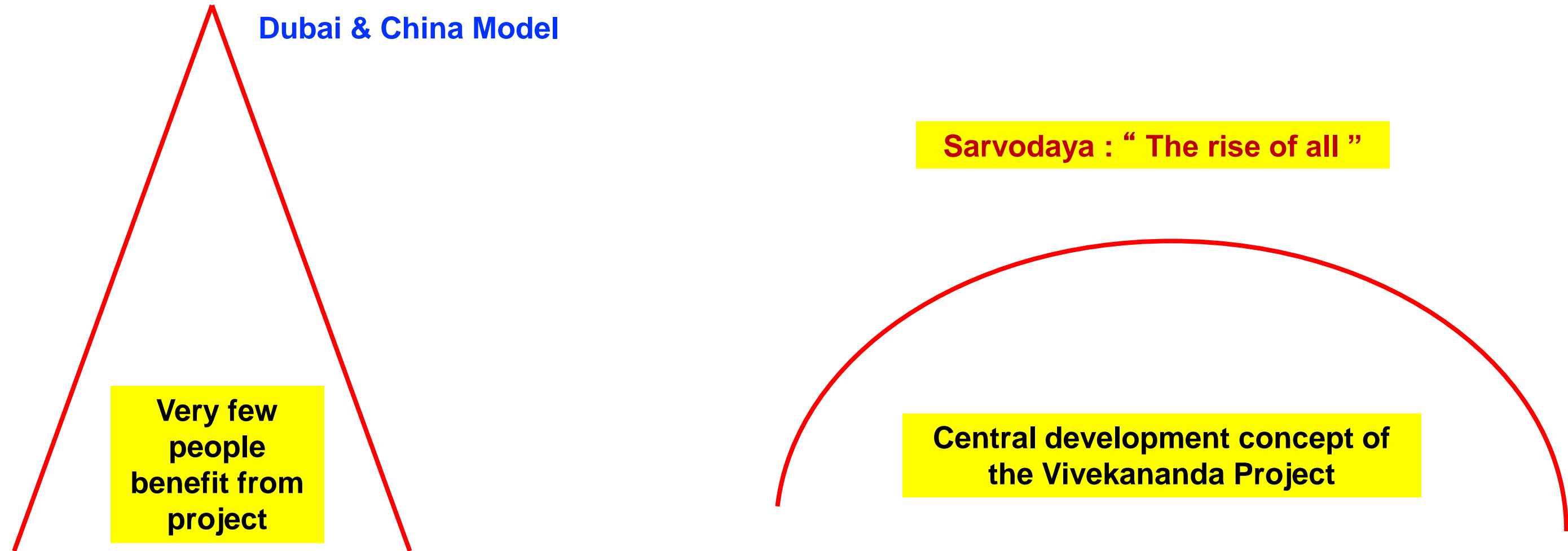
- India's Population : 1.35 billion people
- India is likely to expand from a US \$ 2.5 Trillion economy (2018) to a US \$ 7.5 Trillion economy by 2030-32
- If we think in terms of a US \$ 7.5 Trillion economy by 2032, it becomes easy to take decisions to pre-invest in large Education & Healthcare schemes which are the building blocks needed to sustain an economy of that size

India needs to move to a 15 year planning horizon where huge financial flexibility exists

Final objective “ Sarvodaya ” ... The rise of all



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Ultimate objective is to maximize mass social upliftment ... by including the excluded

Central project philosophy ...

“ Education is the manifestation of the perfection already in man ”

“ knowledge is inherent in man, no knowledge comes from outside; it is all inside ”

Concept Implications :

1. All knowledge is within ... to regain its ancient stature as leader of the world India must change its approach to literacy



Swami Vivekananda's extremely sophisticated and timeless ideas have been adopted as the Education megaproject's design basis document

The Vivekanand education megaproject aims to fundamentally change India's approach to literacy, learning and the teaching profession ... by re-installing the Teacher “ Economically and Socially “ to the top of our social fabric



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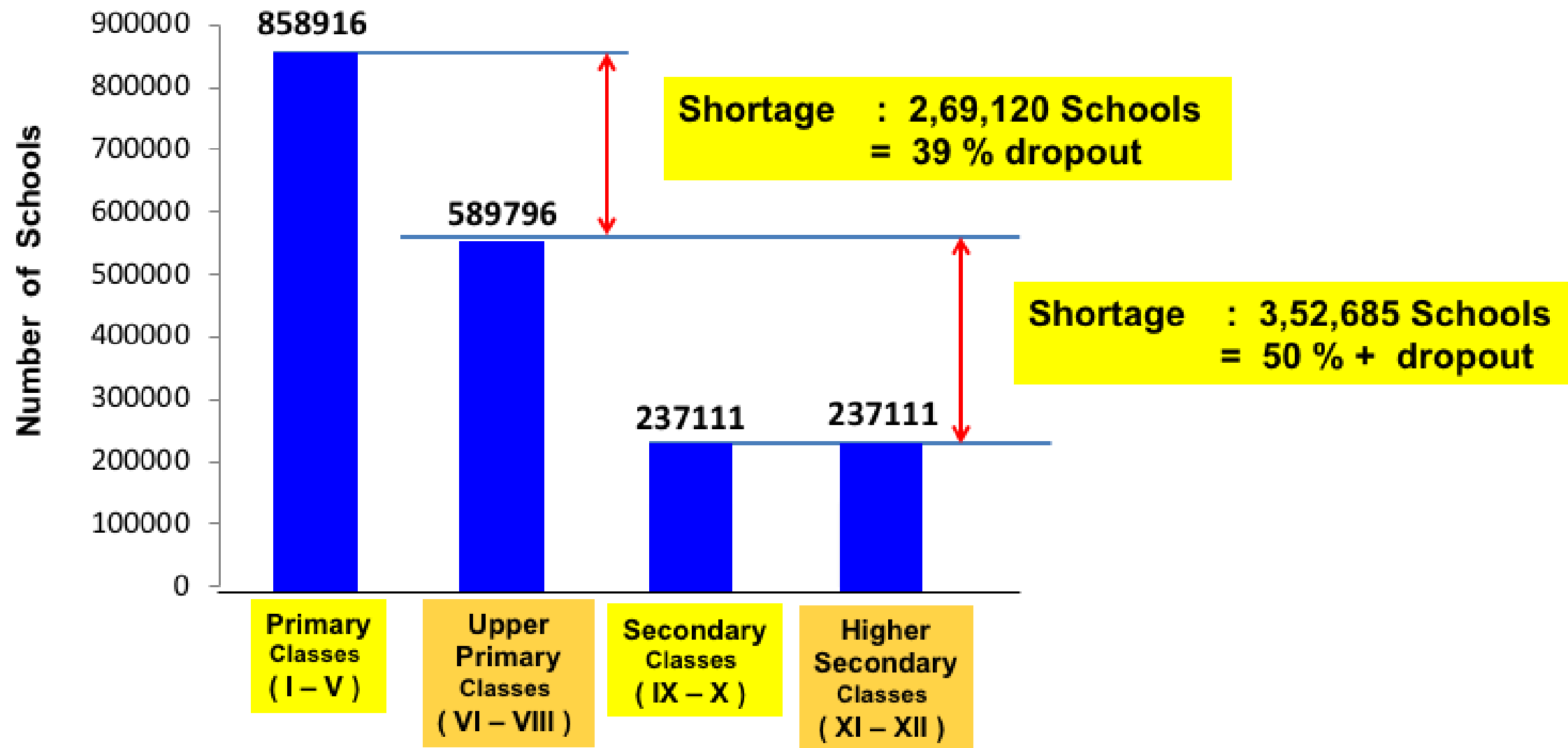
Urgent Need For Project

Huge shortage of secondary schools ... across India



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INDIA'S MASSIVE SCHOOL SHORTAGES



- ❑ India is short of **2,69,120** upper primary and **3,52,685** secondary schools
- ❑ As a result over **150** million children have dropped out of school after class V, over the last 10 – 15 years because there have not been enough secondary schools to go to
- ❑ Of the students who do attend school ... **75 %** go to schools with Rock bottom quality
- ❑ Despite this , there is NO Plan and No specific capex allocation to increase secondary school capacity on the scale required

Sources : Educational statistics at a glance, 2011; MHRD GoI, U-DISE, NUEPA, Nataraja Foundation Research

India has a HUGE secondary school shortage problem. Vivekanand Education Megaproject solves this problem

Low financial & operational efficacy ... within the existing SSA school system



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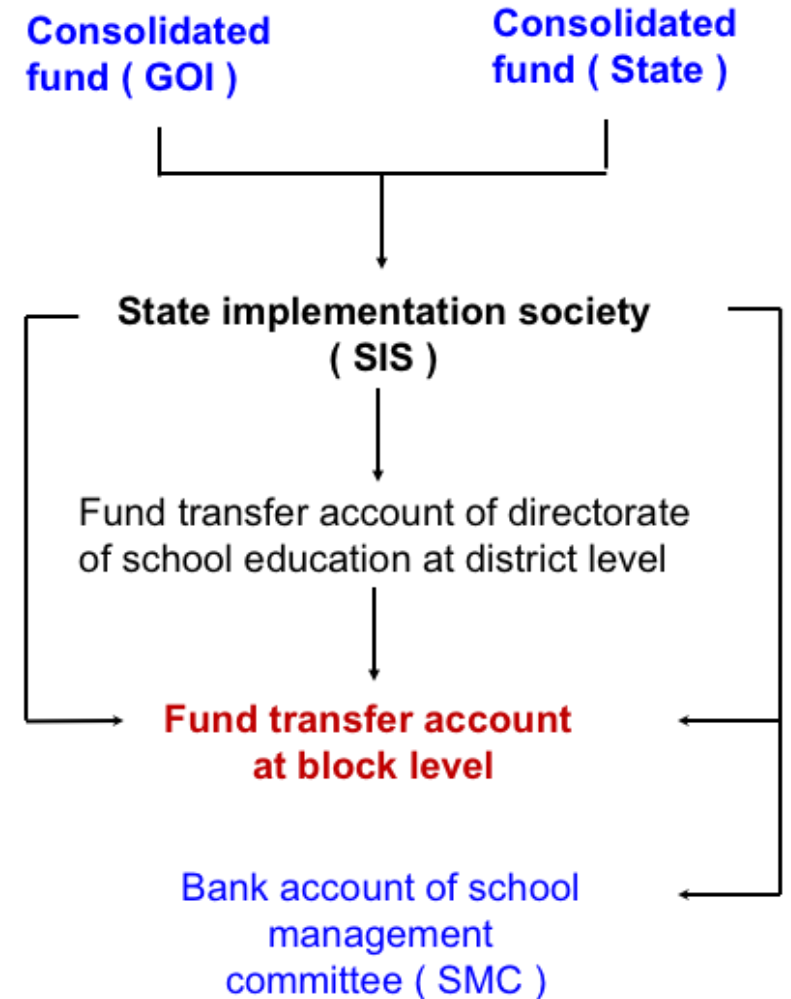
Time consuming
top - down
4 layer approval process

How money flows to Government run and Assisted schools in India

Timeline

- April - Release of 1st instalment by Gol to state implementation society (SIS)
- May - Release of 1st instalment by state Gov. to SIS
- May – June release by SIS to district / block / SMC
- June - Release by district
- September - Release of 2nd instalment by Gol to SIS
- October – November release by SIS to district / block / SMC
- November - Release by district

Funds transfer



It takes 6 – 7 months for Money released in New Delhi to reach Village schools across India.

Teachers salaries are getting delayed for months

Source : Ms. Yamini Aiyar (2011) from the right to schooling to the right to learning ... Towards a new frontier for governing elementary education finances in India

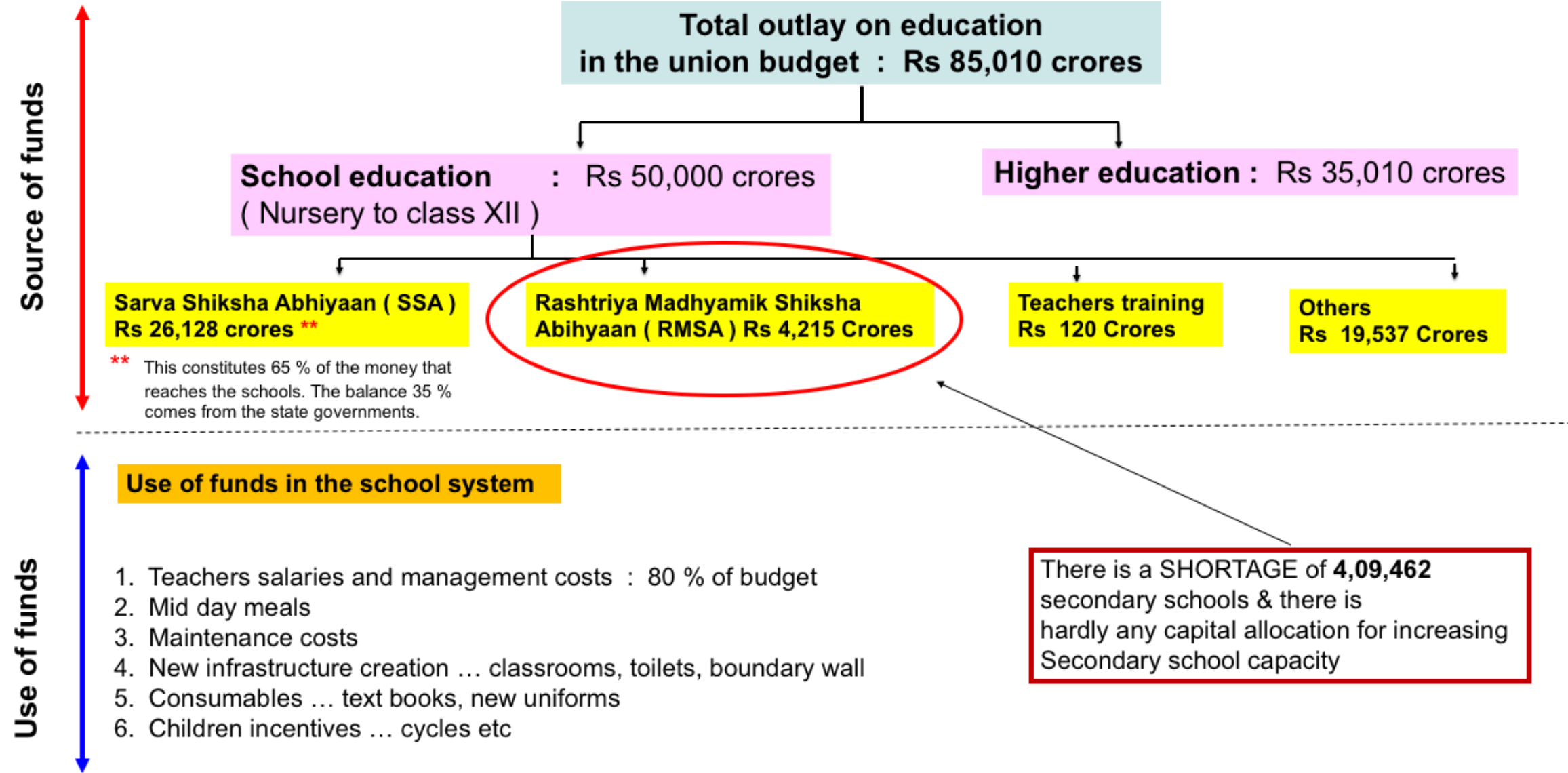
Education budget allocations (2018) ... Lack of strategic approach to secondary education



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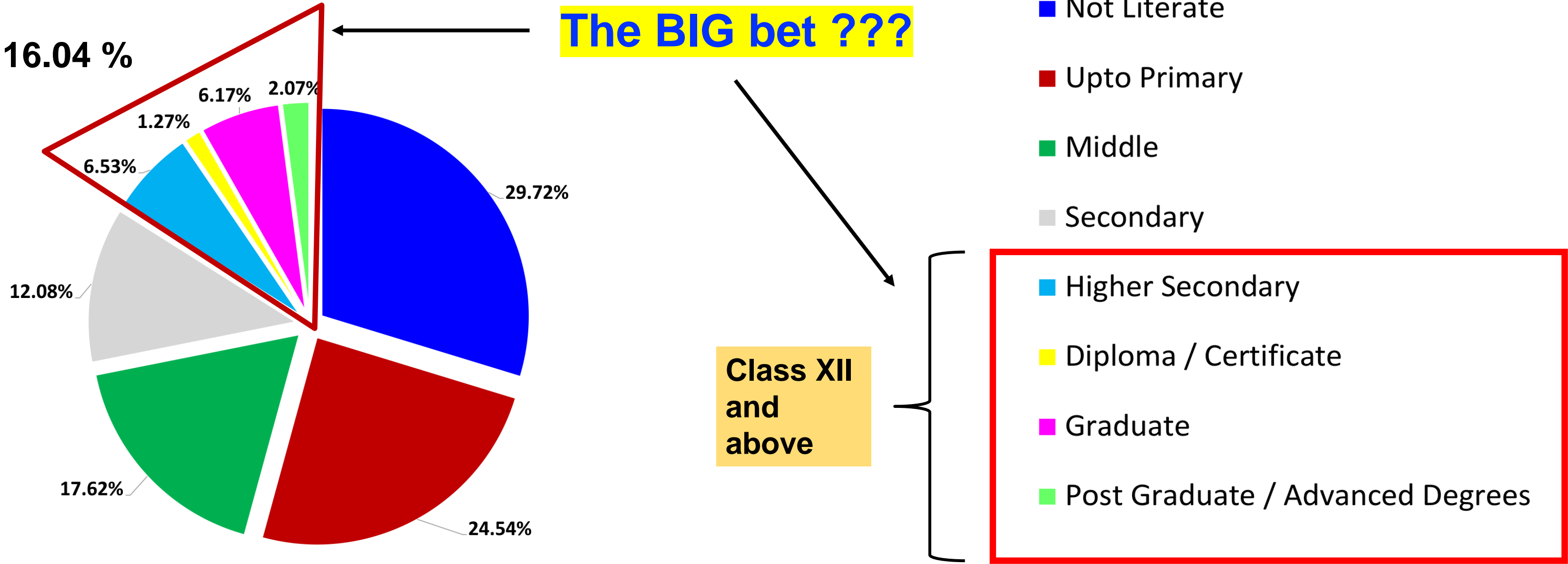
Central Government budget allocations for Education (2018)

There is hardly any money allocated for Secondary schools in the **2018** Budget and any budget before that



Vivekanand Megaproject solves the money problem , by Raising Rs 14.95 Lakh Crores through Innovative Financing ... to provide Secondary Education & Skills inputs at over 6,21,805 + locations ... across India

India education levels snapshot (2018) ... Need for large scale policy change



India is essentially betting that just 16 % of the Population ... will lift the balance 84 % into the Future

Problems due to poor teacher quality / shortage of skills instructors & skilled workers



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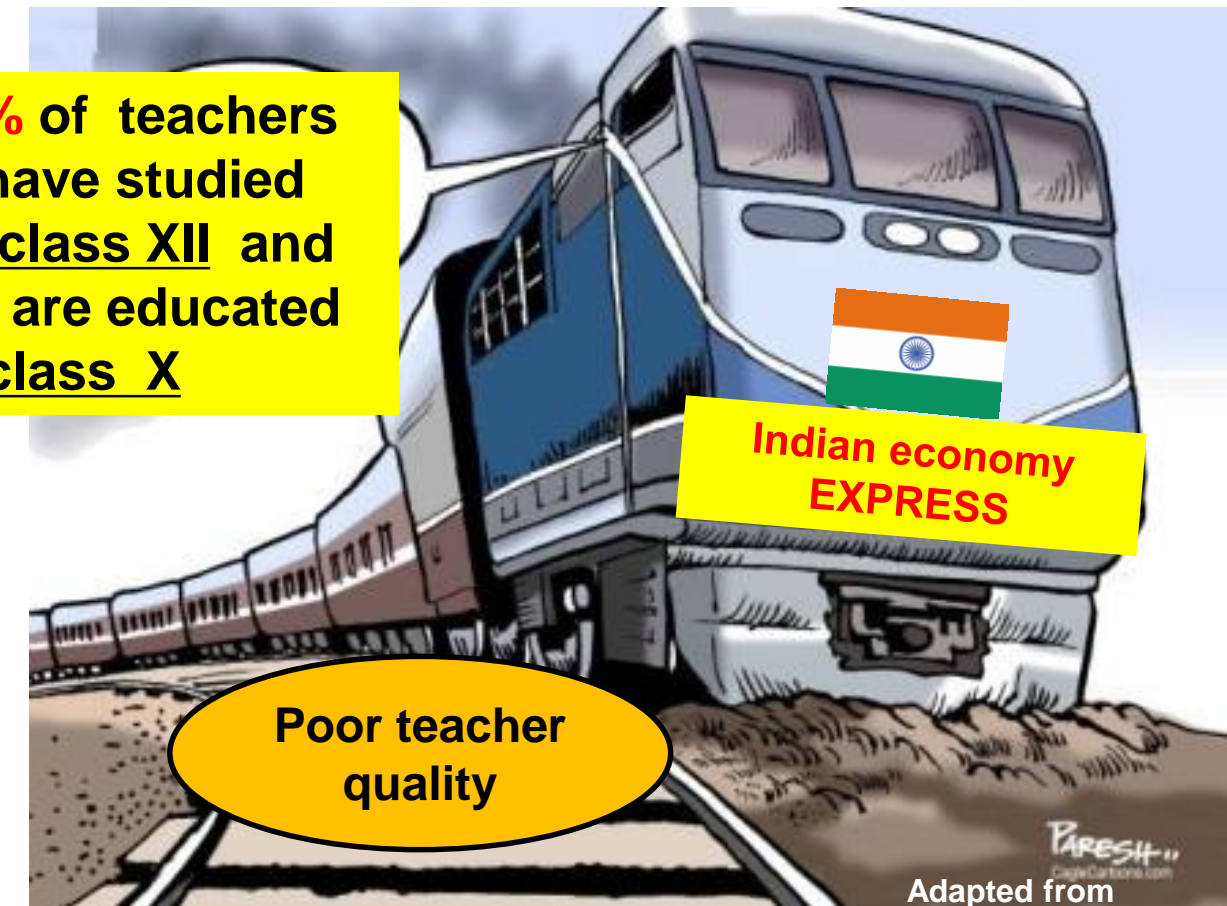
Huge shortage : Skilled workforce required by 2022 (Additional)

Sector	Additional skilled workers required (in millions)
Construction & real estate	31.13
Retail	17.30
Transportation & logistics	11.66
Beauty & wellness	10.09
Furniture & furnishing	7.18
Tourism	6.48
Handlooms & handicraft	6.14
Auto & auto components	3.90
Media and entertainment	0.90
Miscellaneous	25.12
TOTAL	119

Adapted from

Indian economy target of US \$ 4.5 trillion by 2025 and US \$ 7.5 trillion by 2030-32

Just 46 % of teachers in India have studied beyond class XII and 25 % not are educated beyond class X



Adapted from

Shortage of skilled instructors could de-rail the Indian economy

Source : <https://economictimes.indiatimes.com/jobs/india-will-need-119-million-more-skilled-workers-by-2022/articleshow/46873280.cms>

Poor teacher & skills instructor quality in India ... is biggest risk to India's economic growth



Need to repair a damaged National value system ... to prevent violent crime against Women

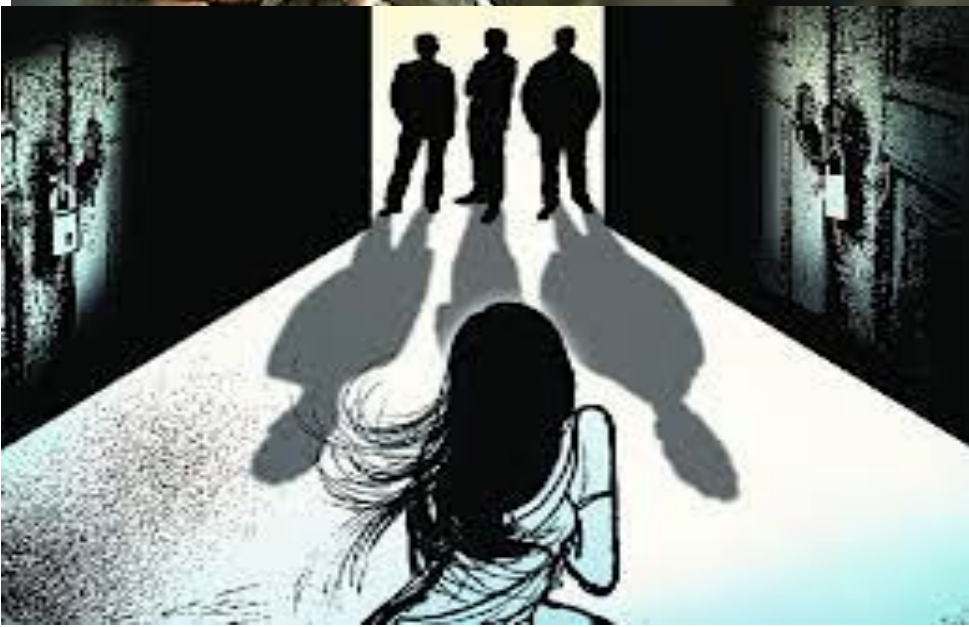
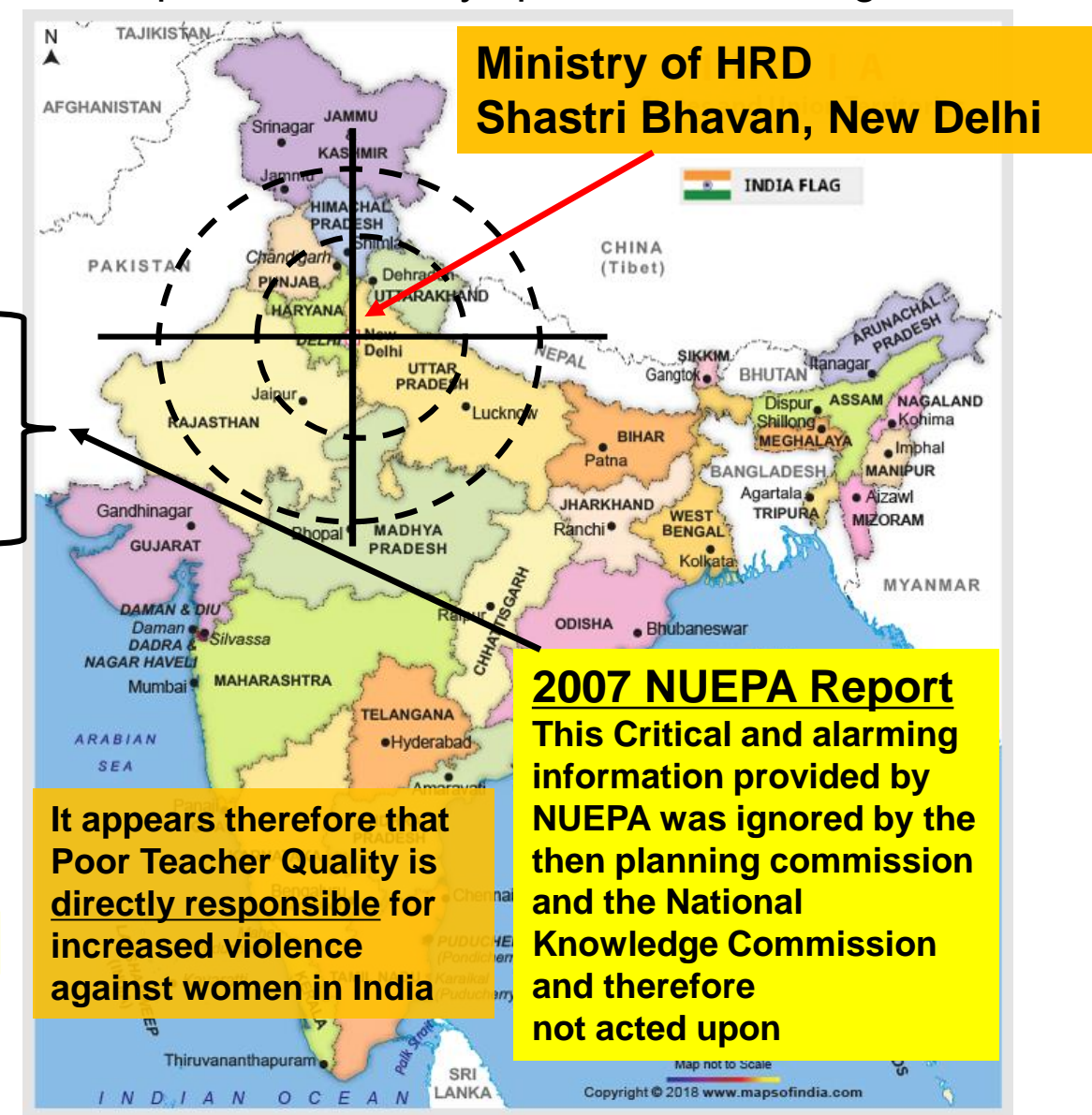
- India's teachers (for the last 70 years) have been amongst the lowest paid employees when compared to any other vocation with similar qualification
- This policy neglect of the teaching profession has skewed the economic choices young people make ... and resulted in the worst qualified people becoming teachers in very large numbers
- 2007 data states that just **46 %** of India's **5.63 million elementary teachers** have studied beyond class XII and **25 %** have not studied beyond class X (Source : 2007, NUEPA, Arun C Mehta)
- In 2008, this information provided by NUEPA was ignored by the then planning commission in the NKC report to the then prime minister

It needs to be noted that all Six rapists in the Dec ' 2012 Delhi rape came from areas where just **21 % of teachers had studied beyond class X**

Ministry of HRD

Needs to be "EPICENTER" of any solution aimed at improving womens safety in India

Policy neglect of the teaching profession since independence has resulted in extremely serious Consequences in every sphere ... including social



Ministry of HRD has a Key role in Repairing our National value system. Over the last 40 years the worst qualified have entered the teaching profession ... Putting the whole country into a reinforced negative values vortex . It will therefore take another 30 years to undo the massive damage that has been done to Indian society due to due to flawed HRD Policies by previous governments



Therefore ... What is the need of the hour ?

- ✓ More Secondary schools and skills development capacity
- ✓ Better teacher & skills instructor quality ... for social repair and womens safety



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... As a solution

What problems does the Vivekananda education megaproject solve ?



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The Vivekananda education megaproject has been conceived to solve the following problems :

1. Immediate Operational problems :

- Low financial & operational efficacy ... within the existing SSA school system

2. Major systemic challenges :

- Approx. **89** % children drop out of school by class IX
- Shortage of **2,69,120** upper primary & **3,52,685** secondary schools
- Resulting in ... Large shortage of skilled manpower in India
- Shortage of funds ... to build this large scale capacity
- Repairing of the National system of Values to prevent violent crimes against women ... **BIG** problem



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A project in two parts



Part 1

Solving the immediate operational problem of fund flow delays to 8,58,916 + schools

The Six months to Six seconds project

Blueprint

Understanding the problem (1) ... Delays in fund flows to schools across India & its impacts



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Recent news reports (2016 – 18)

delhi-teachers-salaries-municipal-corporation-schools-aap-bjp-arvind-kejriwal-5086075/

<https://www.financialexpress.com/education-2/no-textbooks-for-civic-schools-in-delhi-about-6-lakh-students-suffer/1232036/>

<https://www.financialexpress.com/india-news/delhi-school-shocker-classroom-shortage-no-benches-books-study-materials-teachers-blame-fund-crisis/1195118/>

<https://www.hindustantimes.com/punjab/why-doesn-t-govt-care-to-fix-our-school-s-windows-and-toilets-ask-ludhiana-govt-school-students/story-nXQYNfsnXBfuOzow4UXOeM.html>

<https://swachhindia.ndtv.com/one-in-four-toilets-constructed-in-rural-elementary-schools-are-dysfunctional-report-10181/>

http://www.idfc.com/pdf/report/2012/Chapter_6.pdf

<https://indianexpress.com/article/education/schools-without-toilets-take-action-within-a-month-hrd-ministry-tells-states-5146716/>

<http://www.thehansindia.com/posts/index/Telangana/2016-03-04/Wait-for-salary-gets-longer/211263>

<https://kashmirreader.com/2018/03/01/pending-salaries-of-ssa-teachers-to-be-resolved-within-days-dir-edu/>

<https://www.timesnownews.com/mirror-now/society/article/in-december-government-teachers-in-punjab-receive-half-of-their-salary-due-for-august/140284>

<https://www.telegraphindia.com/states/bihar/pu-teachers-worried-over-salary-from-govt-220624>

Money is not reaching schools on time ... Across 29 states and 7 union territories

Understanding the problem (2) ... Top 5 issues



1. Money reaches schools 6 – 7 months late and when it does arrive school managements have no clear idea whether the money is to be used for books, uniforms, toilets or cycles

2. Tens of thousands of school teachers across India are not receiving their salaries on time .

In many cases teacher salaries are getting delayed by **3 – 6 months**.

Contract teachers are treated terribly. This is a national shame.

3. Current planning is top – down with little regard to the actual needs of individual schools.

According to the PAISA 2012 survey, in Rajasthan for instance, schools were ordered to spend their SDG grants on furniture.

Some of the schools had no need for New furniture ... so could not use the money for things they actually needed.

In Bihar schools across a district were forced to buy fire safety equipment though many had yet to receive their school building grant.

Absence of discretionary powers :

As school managements have very little discretionary authority, it creates a complete disconnect between school articulated needs (actual needs) and actual expenditures.

4. Current centralized system of financing concentrates decisions at higher levels with most decisions taken as state, district and block levels .

School management committees have very little say in decisions.

RTE was meant to de-centralize decision making, but this has not happened in practice

5. State financing of education / schools is separate from the union government system in accordance with the devolution of powers under the constitution.

From an operations standpoint however the state financial contributions for schools should have the same IT platform, protocols, dashboards and alerts system which the central Govt. uses

Source : Ms. Yamini Aiyar (2011) From the Right to Schooling to the Right to learning ... Towards a New Frontier for governing Elementary Education Finances in India , PAISA National Survey (Accountability initiative 2012) ; Nataraja Foundation (Mumbai) inputs

These problems experienced in 8,58,916 + schools across India are causing billions of dollars of productivity losses each year ... adversely affecting the work of 192 million children and 5.23 million elementary school teachers

Understanding the problem (3) ... Quantifying the economic loss due to fund flow delays



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- Assumptions (conservative) :
1. Approx. that **60** % of Indian Govt. schools get their funding Seven months late
 2. Children spending 7 months of unproductive time in school learn and ... therefore earn 40 % less than children going to good schools (100 % uptime)

Working days/year : 180 days

India per capita GDP (2018) : \$ 1974 per year

Average working life of people : 25 years

Indian school system has **192** million children studying under **5.23** million teachers.

We assume that **60** % of this vast system is affected by fund flow delays , reducing the students future earning capacity by almost **40** %.

Loss of income over the next **25** years (For students) : $((192 \times 10^6) * 0.6 * (1974 * 25 * 0.4))$

Calculation based on Stanford University paper " How much is a good teacher worth " by Prof. Eric A Hanushek

Quantified loss of productive capacity = US \$ 2.274 trillion over next 25 years working lives of students

To do list ... Solving the “ Money flow ” problem within India’s school system



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1. De-centralize school budget decision making to the individual school level.

All schools must upload their budgets into the system by the 1st of march (one full month before the next financial year) after discussing it with the block development officer

Govt. only to provide guidance with broad thumb rules ... to help school managements with cost estimation

2. Teachers salaries payments to be given First priority to ensure that teachers are paid on the 1st of every month ... without fail.

4. Bring predictability to fund flows & enable public access to system to ensure transparency

3. Train all **5.23** million elementary school teachers across India to prepare school budgets.

Financial literacy and digitization of school finances is critical.

5. Build a real time management information system that tracks school expenditures.

6. Simplify the transfer system and distribute grants to schools on a per-child basis

7. Providing un-tied block grants to school management committees

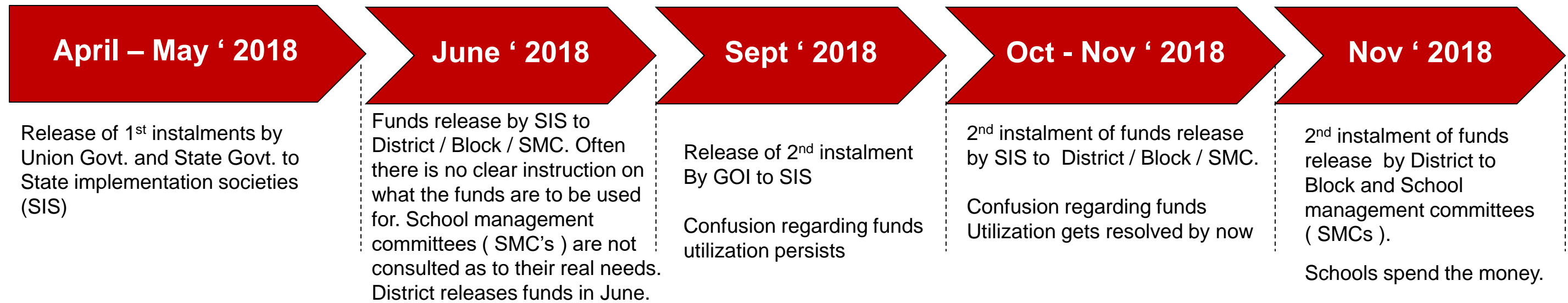
Turn school budgeting into a bottom up exercise ... Let us trust our teachers more. We have already trusted them with our most priceless assets ... Our children



Increasing Fund flow velocity to schools ... Current situation Vs. Proposed solution

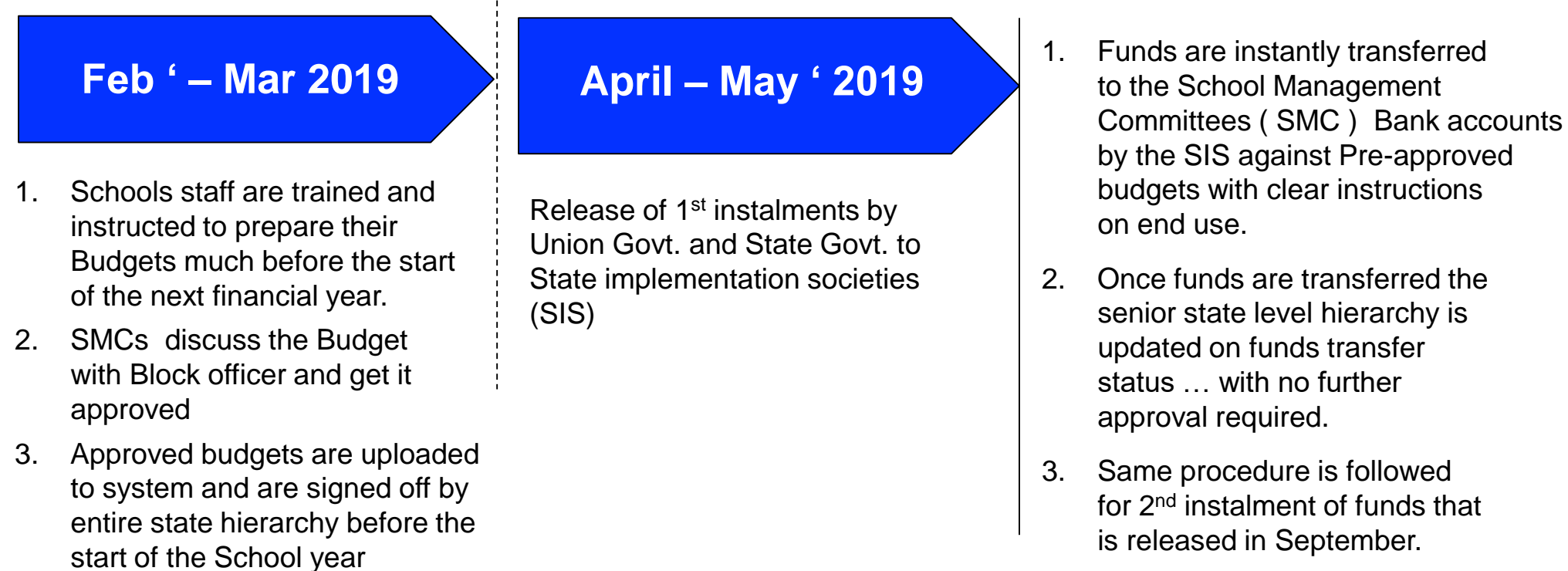
Situation today (2018) ... Six to Seven month delays

1st April ' 2018



Proposed solution 2019 and beyond ... The Six second solution

1st April ' 2019



Shortened Six second process , focuses its efforts On timely budgeting (before start of the financial year) and Pre-approvals for critical items including teachers salaries

Execution schematic ... System architecture and workflow (Six seconds loop)



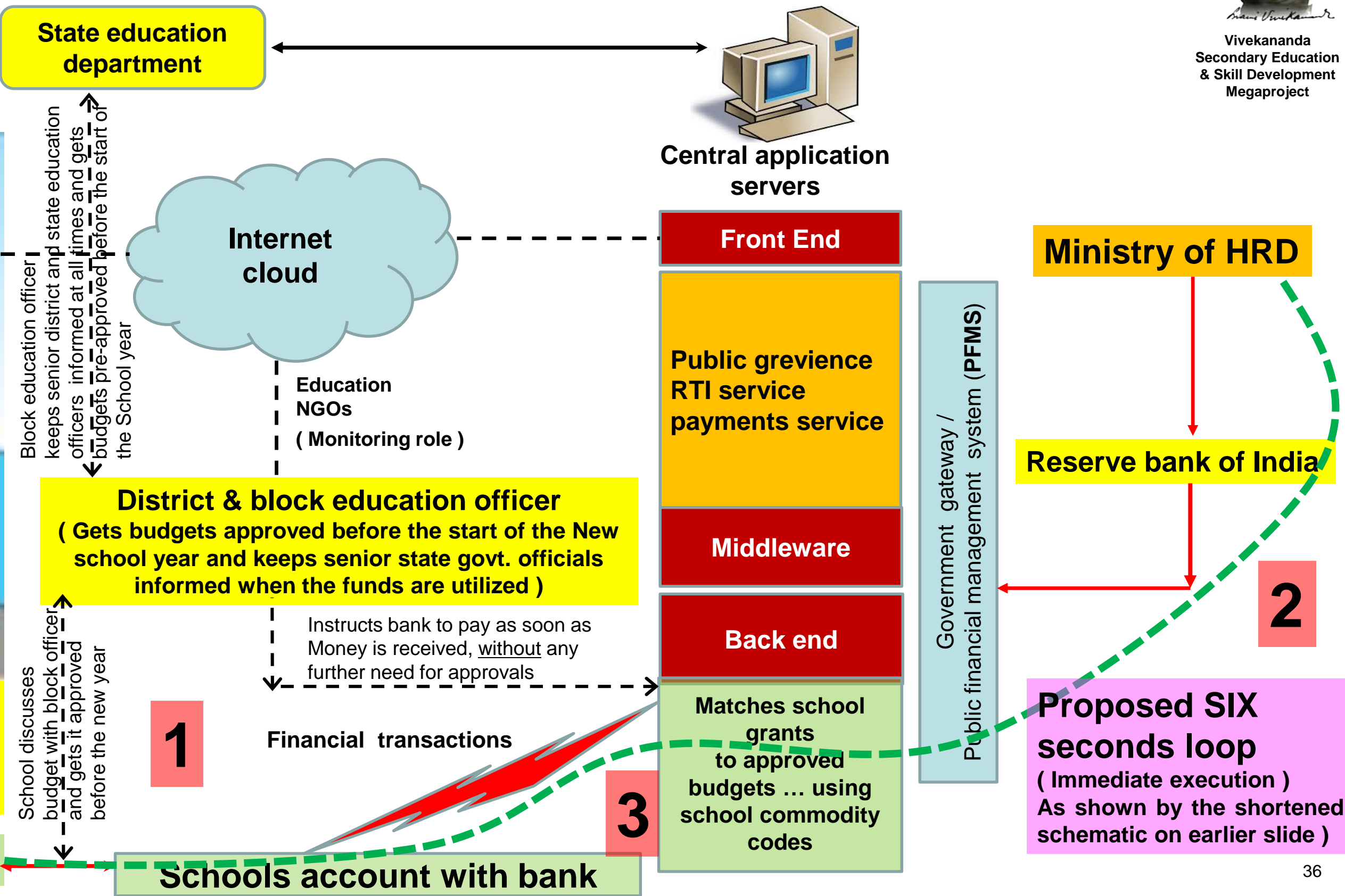
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Creating an integrated eco-system



School management committee manages school & prepares next years budget in Feb - Mar

Mobile phone / Laptop access



Six Months to Six Seconds Project ... What will success look like ?



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- ✓ Teachers get paid on time ... every time
- ✓ Over **192** million children and over **5.23** million teachers see improved productivity as money reaches **8,58,916** schools across India ... on time
- ✓ Improved school productivity will add US \$ **2.274** Trillion to earnings of **192** million children over their next **25** years working lives

Ballpark Project cost = Rs 4 crores



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Part 2

Reducing the massive gap in secondary education & skills capacity in India

The Vivekanand Secondary Education & Skills development megaproject

Blueprint

Understanding the problem (1)

What has caused a shortage of 6,21,805 upper primary + secondary schools ?

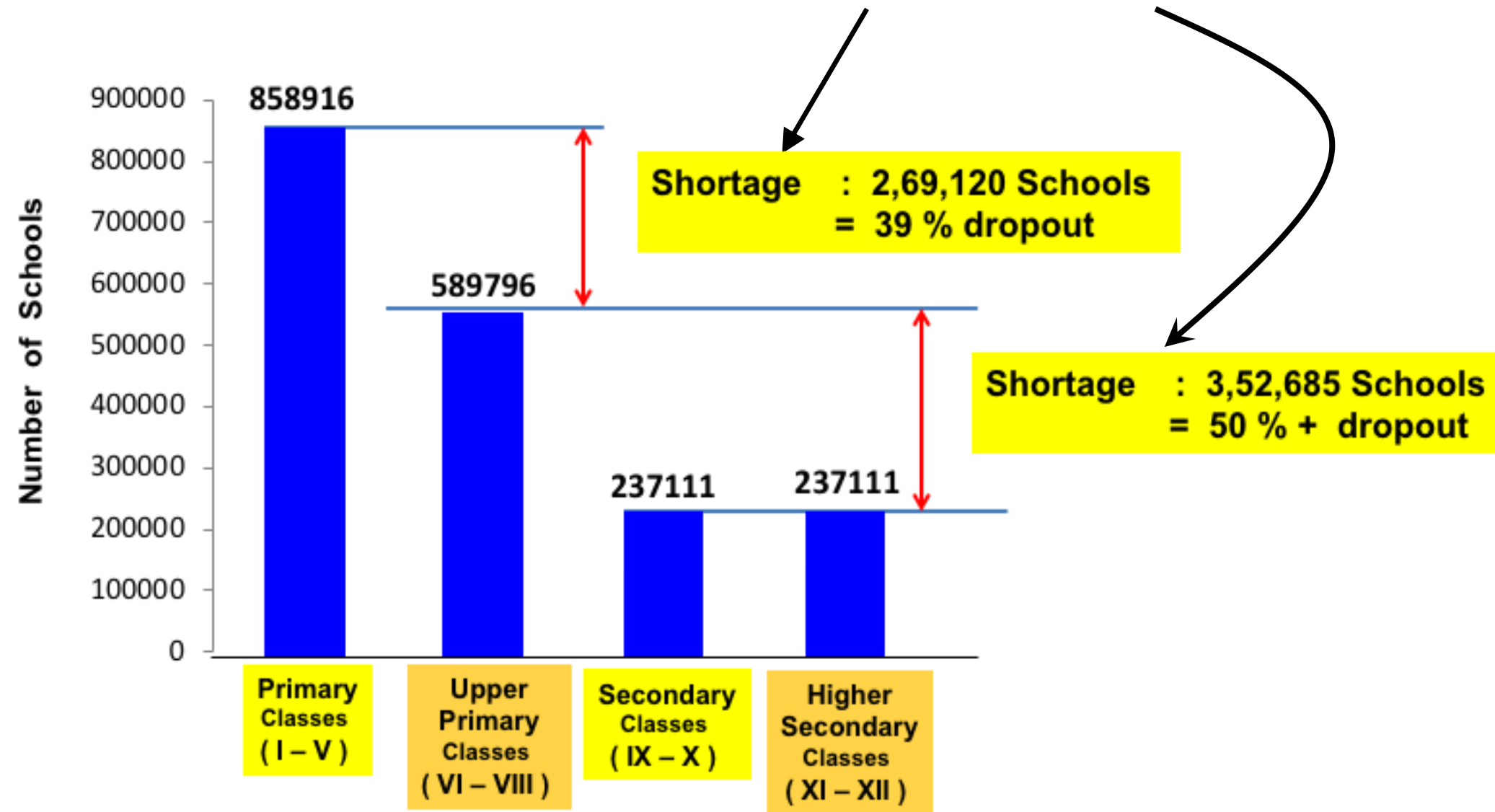


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Reason for massive shortage of secondary school capacity

1. Govt. of India decision to totally focus on Universal elementary education ... led to neglect of Secondary education & Skills development
2. Too much focus on increasing literacy ... For far too long ... without thinking about the larger societal impact or the needs of an expanding economy

Disastrous impact of a " Literacy Centric " education system



Sources : Educational statistics at a glance, 2011; MHRD GoI, U-DISE, NUEPA, Nataraja Foundation Research

Literacy centric policies of the ministry of HRD over the last 40 – 50 years have created other structural & social problems as well ... **As we are just about to see**

Understanding the problem (2) ... Current plight of teachers in India



Teacher begging on a local train in Mumbai ... to raise Money for his school

Kerala teacher reduced to beggary



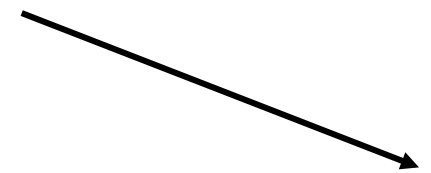
Do we need to change Govt. policies that are reducing our teachers to beggary ?

Understanding the problem (3) ... Working conditions of teachers in India



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Teachers not getting salaries on time



Tens of thousands of school teachers across India are not receiving their salaries on time . In many cases salaries are getting delayed by 3 – 6 months.

This is a national shame.



- 1. No furniture in schools
- 2. Improper lighting



No furniture in schools

Teachers are receiving their salaries 3 – 6 months late

Most of India's 5.23 million elementary teachers are working with 192 million children ... Under very difficult conditions



1. In excess of **7.72** million teachers (Primary + Secondary) now teach in India's **8,58,916** schools ... the 2007 NUEPA report is an Eye Opener
2. It is quite obvious that badly designed HRD policy and poor working conditions of teachers has affected the economic choices young people make
3. Stanford university paper by Prof. Eric A Hanushek “ How much is a good teacher worth ? ” ... indicates that the Poor teacher quality is costing India Trillions of US Dollars in lost GDP

Teacher quality in India

- ❑ 2007 NUEPA data states that Approx **46 %** of India's **5.63** million elementary teachers have studied beyond class XII and **25 %** have not studied beyond class X

(Source : 2007, NUEPA, Arun C Mehta)

Stanford University Paper

- ❑ Teacher quality impact on student earning capacity in future ... and GDP

<http://hanushek.stanford.edu/sites/default/files/publications/Hanushek%202011%20EdNext%2011%283%29.pdf>

India is losing Trillions of US Dollars in terms of lost GDP , due to Poor teacher quality

Understanding the problem (5) ... Asking the right questions



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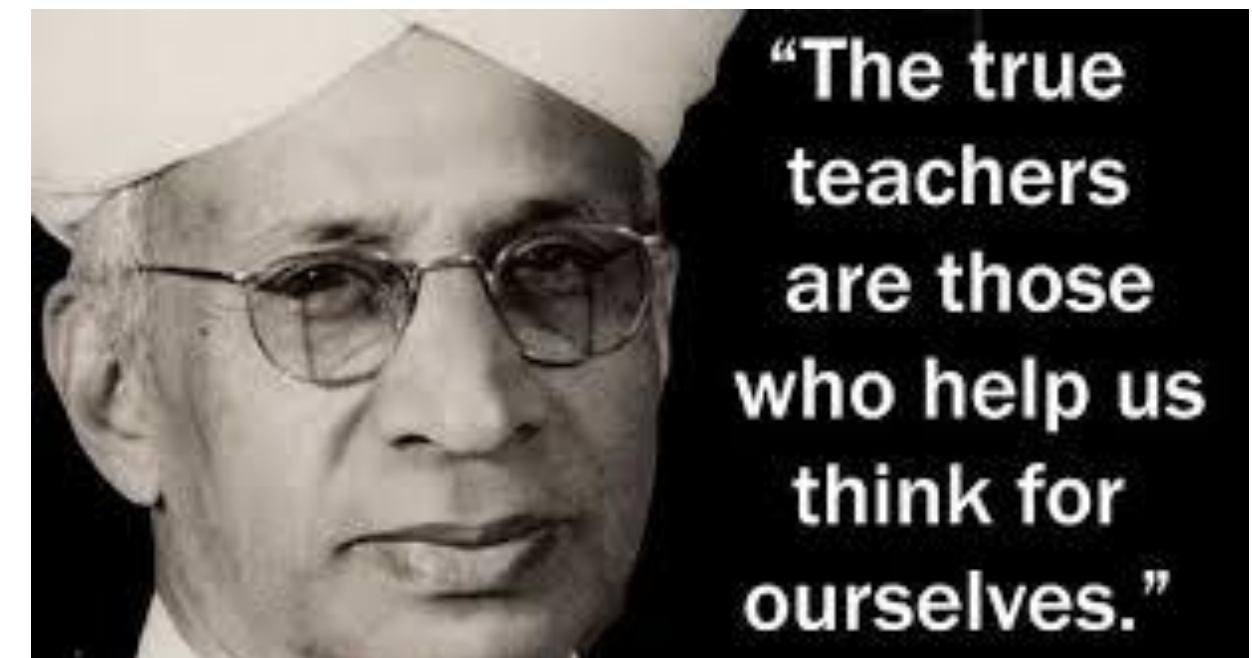
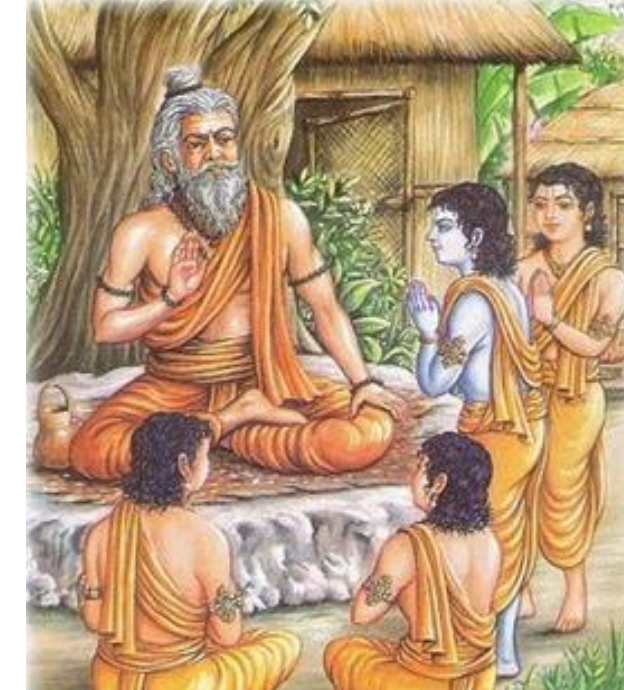
- Why are **89 %** of our Children dropping out of school before class IX ?
- Why are the worst qualified people becoming teachers ?
- Why are our teachers being reduced to beggary ?
- How do we solve the Digital divide problem in Urban Vs. Rural schools at minimum cost ?
- How much **GDP** is India losing due to Poor Teacher quality ?
- By insisting on English, are we making students useless in their local economies ?
- Is poor teacher quality affecting Womens safety in India and resulting in rising crime and brutality against women ?

Understanding the problem (6) ... What went wrong over the last 80 years ?



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- ❑ India was doing extremely well until a **1000** years ago when teachers had the highest status in Society.
- ❑ When the best minds took up careers in education ... literacy & education for all ... followed by itself
- ❑ However ... Over the last **80** years, low priority accorded to the teaching profession with low salaries ... has weakened the teachers status in a materialistic society
- ❑ This skewed policy has resulted in the least qualified taking up the most important of jobs in the country ... Teaching India's future generations
- ❑ **Current Situation** : Today Approx. **46 %** of India's **5.23** Million elementary teachers have studied beyond class XII and **25 %** have not studied beyond class X



There is a clear need for a policy or a project which once again attracts the best minds to careers in teaching



Vivekanand secondary education & skills development megaproject

In Five steps

Repairing the massive damage done by “ Literacy Centric ” education policies

over the last 80 years

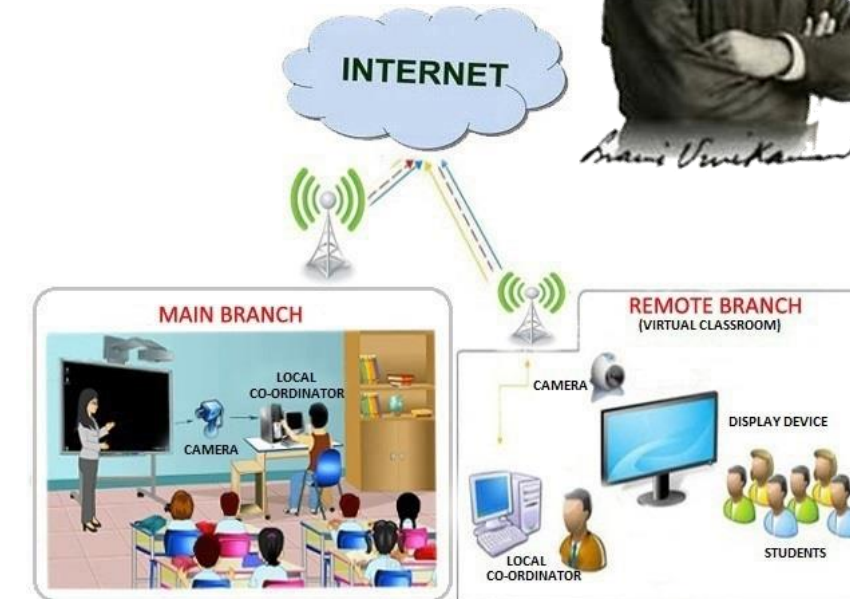
Step 1 ... Quick & massive “ Vivekanand school in a cloud ” programme



- ❑ Basic idea borrowed directly from Prof. Sugata Mitra’s work on the self organized learning environment (SOLE) project
- ❑ Vivekanand education megaproject will operate the worlds largest “ school in a cloud ” programme ... on low unit cost 4G / 5G advanced data networks
- ❑ Project differs from the SOLE in that it will also include secondary education + skills instructors who will create and deliver a joint course and visit all locations
- ❑ There will be special attention on moral principles including most importantly respect for Women
- ❑ Leadership training / the creation of a strategic culture across India’s population will also be an important area of focus within the programme. Teaching students history is critical to strategic leadership training
- ❑ Over **6,21,805** locations across 29 states & 7 union territories will be part of the Vivekanand “ School in a cloud ” by **2023**



Sugata Mitra’s school in the cloud, Korakati, Sunderbans (West Bengal)



VIRTUAL CLASSROOM SYSTEM

Live Online Teaching from any where at any time at any device

Picture courtesy : www.ibizztech.com



The Vivekananda “ school in a cloud “ will rapidly add secondary education and skills development capacity . Companies can contribute with their CSR programmes



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Step 1 (Contd.) ... “ Vivekanand school in a cloud ” Ballpark cost of 6,21,805 locations

Ballpark Capex cost of School in a Cloud
To connect **6,21,805** School locations across
29 states and 7 union territories :

= Rs **2,99,057** * Crores

* Bulk orders for this massive project can reduce Capital cost by over 25 %

** A group of 20 schools will be serviced by one IT service center

*** Management incentive of Rs 10,000 / month will be paid to the Telecom operator + EPC Contractor Consortium to Operate the School in the Cloud. This and other charges will be increased by 3 % each year to account for inflation.

This guaranteed Management incentive of Rs 10,000 / month will form the basis of the Bid which will be securitized and Paid upfront by the Contractor to win the right to run the network across 6,21,805 schools

Cost of single standalone Cloud based school

Sl. No.	Item	Approx. cost (Rs)
	<u>Capex items (Electronics) :</u>	
1	Three laptop computers @ Rs 30,000 / unit	1,50,000
2	One 64 “ TV screen (heavy duty)	1,50,000
3	Three dongles @ Rs 1500 / unit	4,500
4	Receiver and Router	25,000
5	Camera and Mikes	35,000
6	Installation and Misc	50,000
7	Warranties	20,000
8	Subtotal (Electronic items)	4,34,500
9	Building & civil works (2500 sq ft @ Rs 1750 / Sqft)	43,75,000
	Total ballpark Capex *	48,09,500
	<u>Opex Items :</u>	
10	Video Conferencing App Rental charges per month	5000
11	Data charges per month from Telecom carrier	3000
12	Salaries for two teachers / instructors @ Rs 20,000 per month	40,000
13	Monthly Maintenance/IT support@ 12.5 % of Capex (4,34,500) **	4,526
14	Management Incentive @ Rs 10,000 / month ***	10,000
15	Total ballpark Opex	62,526

Vivekanand School in a Cloud will have a large investment Multiplier ... adding over a Trillion Dollars to GDP over the next decade

Step 2 ... Building new secondary education & skill development capacity



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Cost basis for single stand alone Greenfield schools and teacher / skills instructor training institutes

A. New School Capacity Addition

Design Basis :

1. Day schools for **300** children X **2** shifts
2. Fully residential schools designed for **600** students
3. Accommodation for all **75** teachers ... to enable sharing teachers with **22** other schools
Located within a 50 km radius. Accommodation for all teachers will be provided in both types of schools
4. Low cost Vernacular Architecture technique by Laurie Baker / RL Kumar used to build the facilities

Costs calculated from the project excel sheet :

Day school capital cost / unit : Rs **28.60** Crores

Fully residential school capital cost / unit : Rs **75.74** Crores

B. Teacher & Skill instructor training institutes

Design Basis :

1. Day schools for **300** Teachers / Skills instructors
2. Number of such centers : 36 immediately and 36 repeat (in 29 states and 7 Union T)
3. Fully residential facility
4. Accommodation for all **300** trainee Teachers / Skills instructors
4. Low cost Vernacular Architecture technique by Laurie Baker / RL Kumar used to build the facilities

- | | | | |
|------|---|---|----------------|
| i. | 20 acres of land @ Rs 10 Lakh / acre | : | Rs 2.0 crores |
| ii. | 15,000 sq ft training center @ Rs 2000 / sq ft | : | Rs 3.0 crores |
| iii. | 10,000 sq ft training Shed @ Rs 2000 / sq ft | : | Rs 2.0 crores |
| iv. | Residential accommodation for 300 | : | Rs 25.0 crores |
| | 100 rooms @ 25 lakhs / room ... for 3 people / room | | |
| iv. | Infra (Road, Water, Power) | : | Rs 10.0 crores |

TOTAL COST / Unit

Rs 42.0 crores

Step 2 (Contd.) ... Building new secondary education & skill development capacity



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Phase	Number of new “Vivekananda cloud schools”. using technology to create new secondary school capacity	Number of new teacher & skills instructors training centers and Masons training centers	Number of new Vivekananda hub schools	Additional Skills development infrastructure at the Assisted schools	Approx. Capital expenditure (Rs Crores)	Tentative commissioning schedule
Phase 1	36	36		-	1533	Q1 2019 – Q4 2019
Phase 2	6,21,769	564	6000	-	5,36,733	2020 – 2023
Phase 3		900	9000	-	3,58,807	2024 – 2027
Phase 4		1500	15,000	-	5,98,012	2028 – 2031
Phase 5 (additional Hub schools ?)			To be decided			2032 - 2037
TOTAL capacity added	6,21,805	3000^{1&6}	30,000²	-¹	14.95	Lakhs of crores of rupees

Notes :

1. For every **10** Hub schools there will be **1** Skills instructor / Teacher training center and a including Masons training center for Vernacular / Laurie Baker low cost architecture at a convenient location
2. A total of 30,000 Hub schools (25,500 day schools + 4,500 fully residential schools) will be built. If there is a need, additional Hub schools will be built

3. Every 1000 new Hub schools will have 850 day schools and 150 fully residential schools
4. For each Teacher / Skills instructor training center, Capex = Rs **42** Crores
5. After phase 1, another (3000 – 36 = **2964**) Teacher & Skills instructor training institutes will be started up within the constructed New hub schools
6. O & M costs + salaries for Teacher & Skills training institutes = 0.12 % of Capex

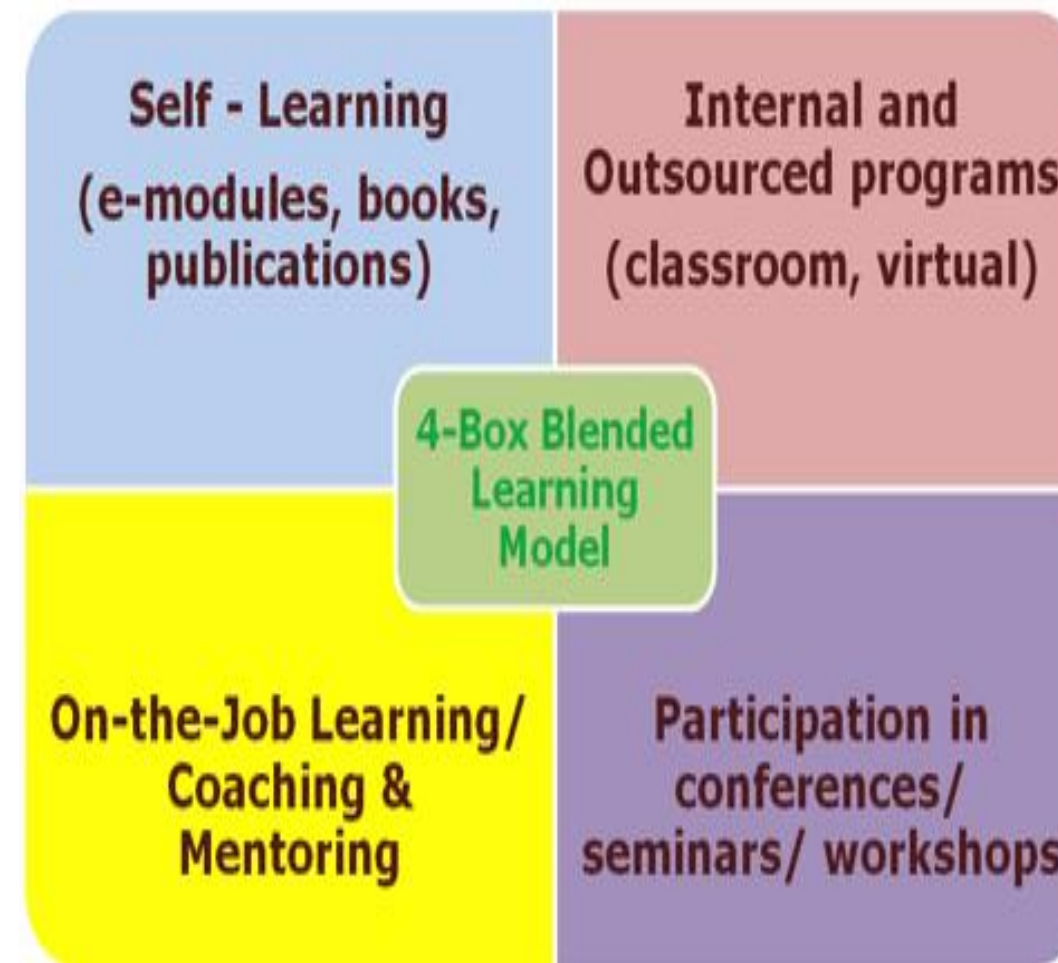
Step 3 ... Creating a “ Locally relevant ” Vocational training system at the secondary school level



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- ❑ Vivekanand Skill development mission will cover over **6,00,000** + locations across 29 states & 7 union territories
- ❑ All students from class VIII onwards will receive Vocational training in an area of their choice
- ❑ In Canada students can choose from 6000 different electives while in India we currently have only 200 electives. Project will adopt the Canadian model.
- ❑ Instruction will be in the local language and targeted at Local opportunities so that people can find employment and boost GDP
- ❑ We do not want to train everyone in English alone and make them useless in their local rural economies

Four-Box Blended Learning Model



- **Self-learning**
 - E_module to enable people to learn at their desk with on-line validation tests
 - Physical / on-line library & KM system
 - Books & Publications
- **Internal and outsourced program**
 - Learning centers for in-house training / workshops and labs
 - Higher education programs at reputed institutions as per PDPs
 - Simulations and Immersive Virtual Reality
- **On-The-Job learning**
 - Monitored learning through assignments
 - Mentoring/ coaching at the work place
 - Special project tasks
 - Professional experience
- **Conferences/ Seminars/ Workshops**
 - External seminars/ conferences as identified by Learning Academies

Research has shown that learning is most effective when performed in the context of actual work.

In addition, many organizations report that 85-90% of a person's job knowledge is learned on the job and only 10-15% is learned in formal training events.

For best results ... Vocational / Skills development training should start in class VIII. Needs Joint sponsorship from Ministry of Skills development & Ministry of HRD

Step 3 (Contd.) ... Creating a “ Locally relevant ” Vocational training system at the secondary school level

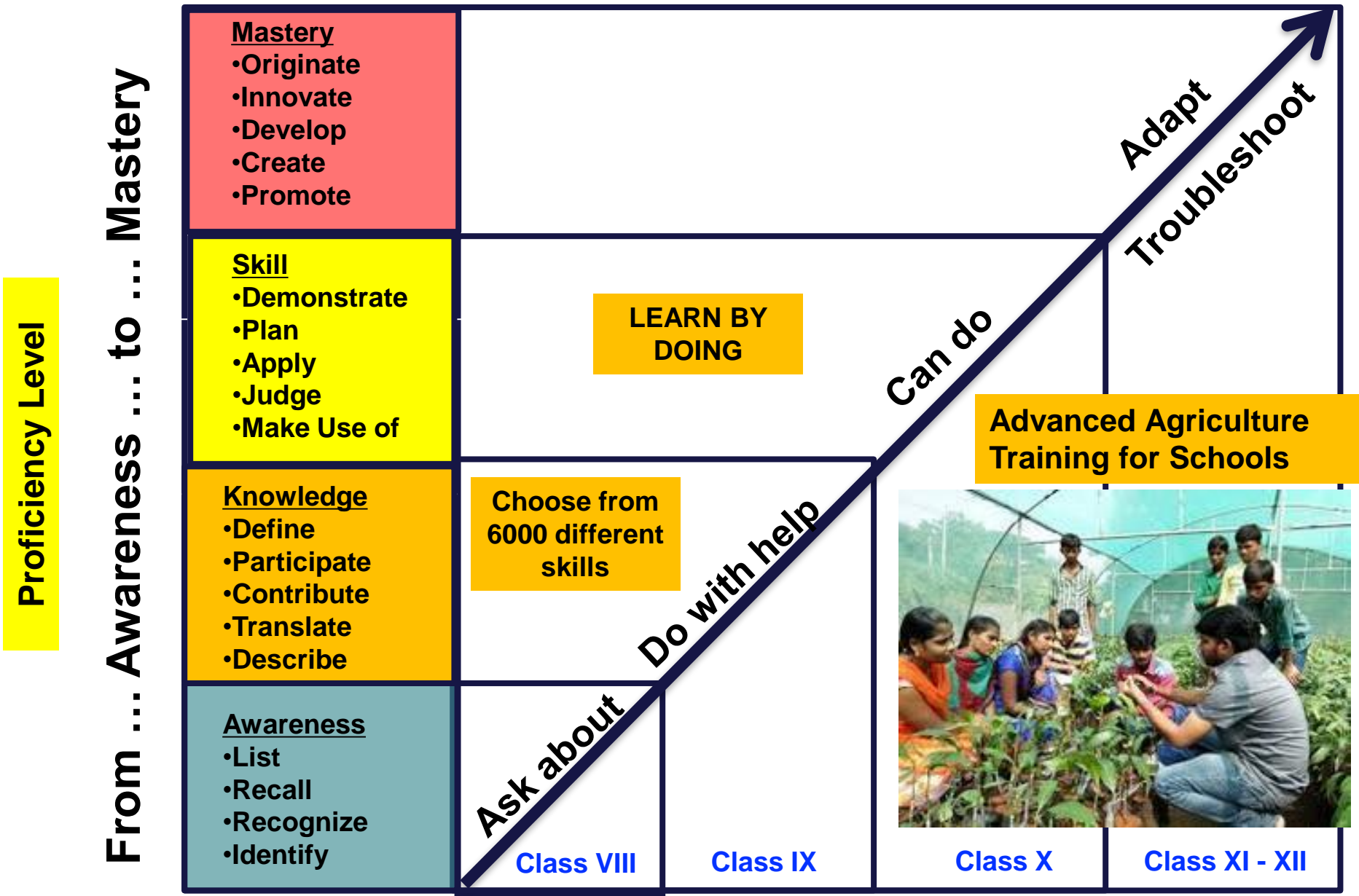


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- ❑ Vivekanand project will provide Next Gen. Skills training at the secondary level in the latest knowledge areas
- ❑ A total of 6,000 vocational courses will be introduced as they have in Canada ... instead of the 200 we have today
- ❑ Each student will undergo five years of training to move through four stages :
 1. Awareness ... Class VIII
 2. Knowledge ... Class IX
 3. Skill ... Class X
 4. Mastery. ... Class XI - XII



Competence Proficiency Levels-New



Understand Internalize Apply Exploit

Goal is to Maximize the local economy by creating Job ready students by class XII

Step 4 ... Reviving the pursuit of Excellence



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- Can students explain what they are doing in class & why it is important ?

- Do teachers why they teach and explain to students the practical applications / end use of the lessons they teach ?

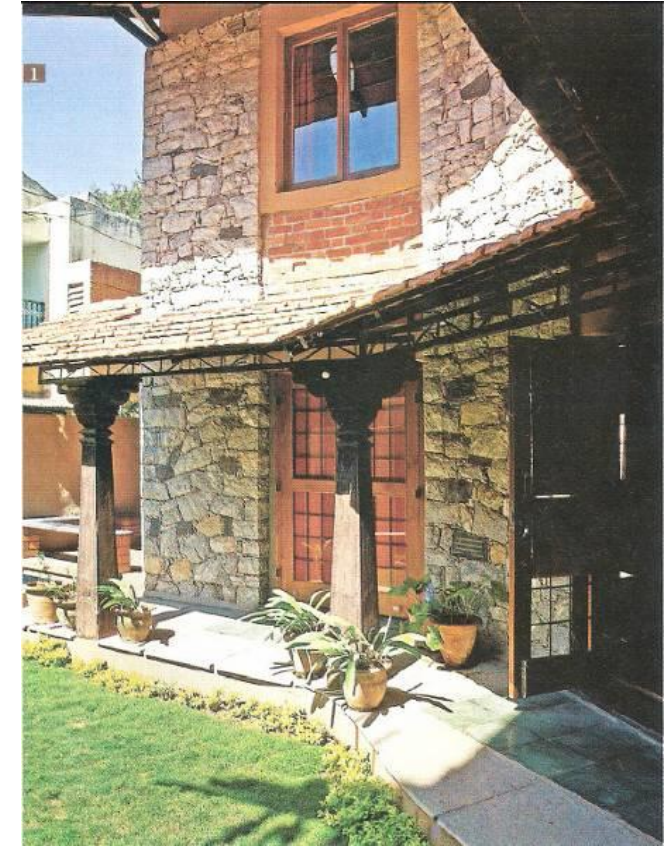
- Is there a zest for learning among teachers and students ?

- Are students expected to meet high academic standards ?

Step 5 ... Increasing the attractiveness of the teaching profession



- ❑ There is a need to completely overhaul teacher salaries and benefits in India
- ❑ Tripling of economy to US \$ 7.5 trillion by 2032 indicates that the nation can afford to considerably increase teacher salaries
- ❑ **Vivekananda megaproject...Proposed teacher salary / benefits**
 - ✓ Free housing
 - Free house on retirement for all teachers
 - House size depending on the grading
 - Max house size = **1000** Sq ft (Carpet area)
 - Houses on special Govt. land
 - ✓ Financial assistance for setting up schools
 - Teachers will get low cost loans for setting up schools
 - ✓ Free Healthcare
 - Free healthcare for Teachers and spouses even after retirement
 - ✓ Regularization & Upskilling of Contract teachers
 - All contract teachers will be regularized and special training will be imparted to Upskill them
 - ✓ Teachers pension fund
 - Central Govt. to set up a teachers pension fund for all teachers





Step 5 (Contd.) ... Increasing the attractiveness of the teaching profession

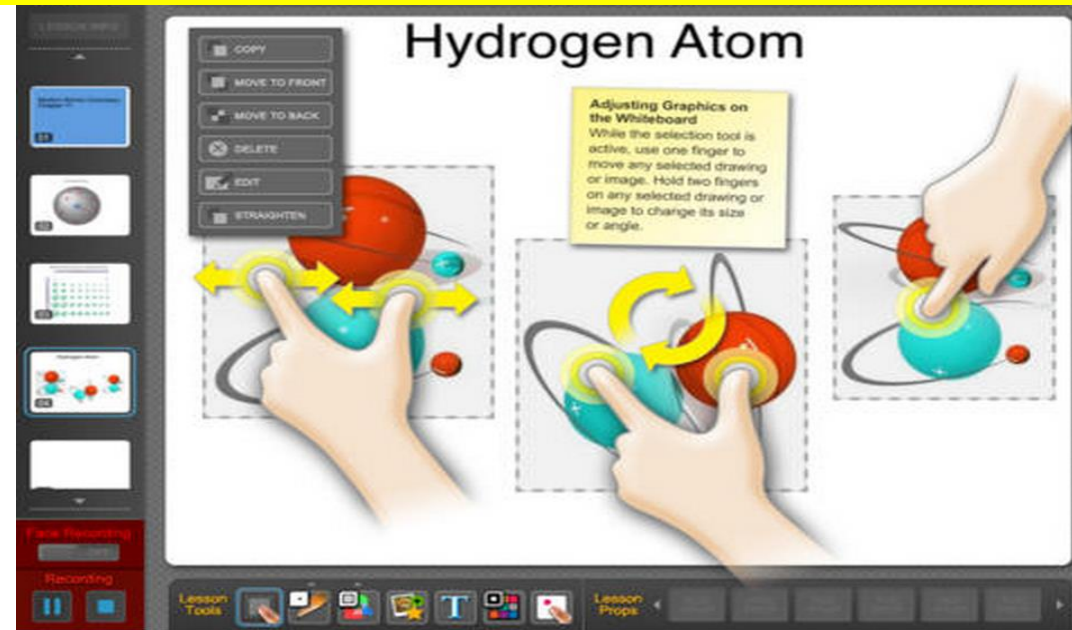
- ❑ Currently teachers in India work in a very restrictive environment, especially in Govt. schools
- ❑ The Vivekananda project will enable its **2.2 million** teachers to use their free time to grow their careers
- ❑ **Vivekanand Project New plan for Teachers :**
 1. Small groups of teachers will be assisted in setting up Education content creation companies ... for creating Educational content for a global market
 2. Foreign assignments : Up to 5% of the 2.2 million teachers or **1,10,000** teachers will be either receiving Training abroad (As in the case of Delhi) or Teaching abroad on rotation at any given time on assignments ranging from **3-6** months
 3. In return, the teacher run organizations will share **40 %** of their earnings with the Govt. Balance earnings will be tax free.



Indian teachers to set up small companies To create Content for the Global market



Indian teacher teaches Foreign Students



The Vivekanand project , by creating New opportunities for teachers will attract the best minds back to careers in Education

Step 6 ...Breakthrough education reforms ...Triggered by asking straight questions



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Massive teacher shortages

India currently has a shortage of 1 million school teachers.

1. Why should only B. Ed degree holders be eligible to become school teachers ? At least till std. VIII.
2. Given this massive shortage and resulting teacher / pupil ratios of **68 : 1** in some states, why cannot we employ retired professionals and qualified people from other professions as teachers ?
3. If we do this ... Teacher shortages will instantly be a thing of the past

Minimum attendance requirement

Why should attendance in school be required ... Can work / assignments be submitted instead ?

1. Focus needs to be on understanding concepts ... Not on passive attendance
2. Students should be allowed to learn from online resources ... to suit each child's pace and interest.
3. Focus on results ... not attendance

How can we exponentially increase secondary education coverage by 300 % ?

Can the Right to education act (RTE) provisions be tweaked in a creative manner using technology ?

1. **300+900 Concept** : Can schools be allowed to contribute to exponentially increasing secondary education coverage ... by creatively tweaking RTE Act commitments by using "Vivekanand school in a cloud" technology.
2. For each student schools enroll, they could cover 3 students in rural India ... over a 4 G / 5G telecom network



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Operating model

30,000 New hub schools + 6,21,805 assisted schools

&

Education voucher system

Operating model for 30,000 New hub schools + 6,21,805 * assisted schools



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Hub & spokes operating model

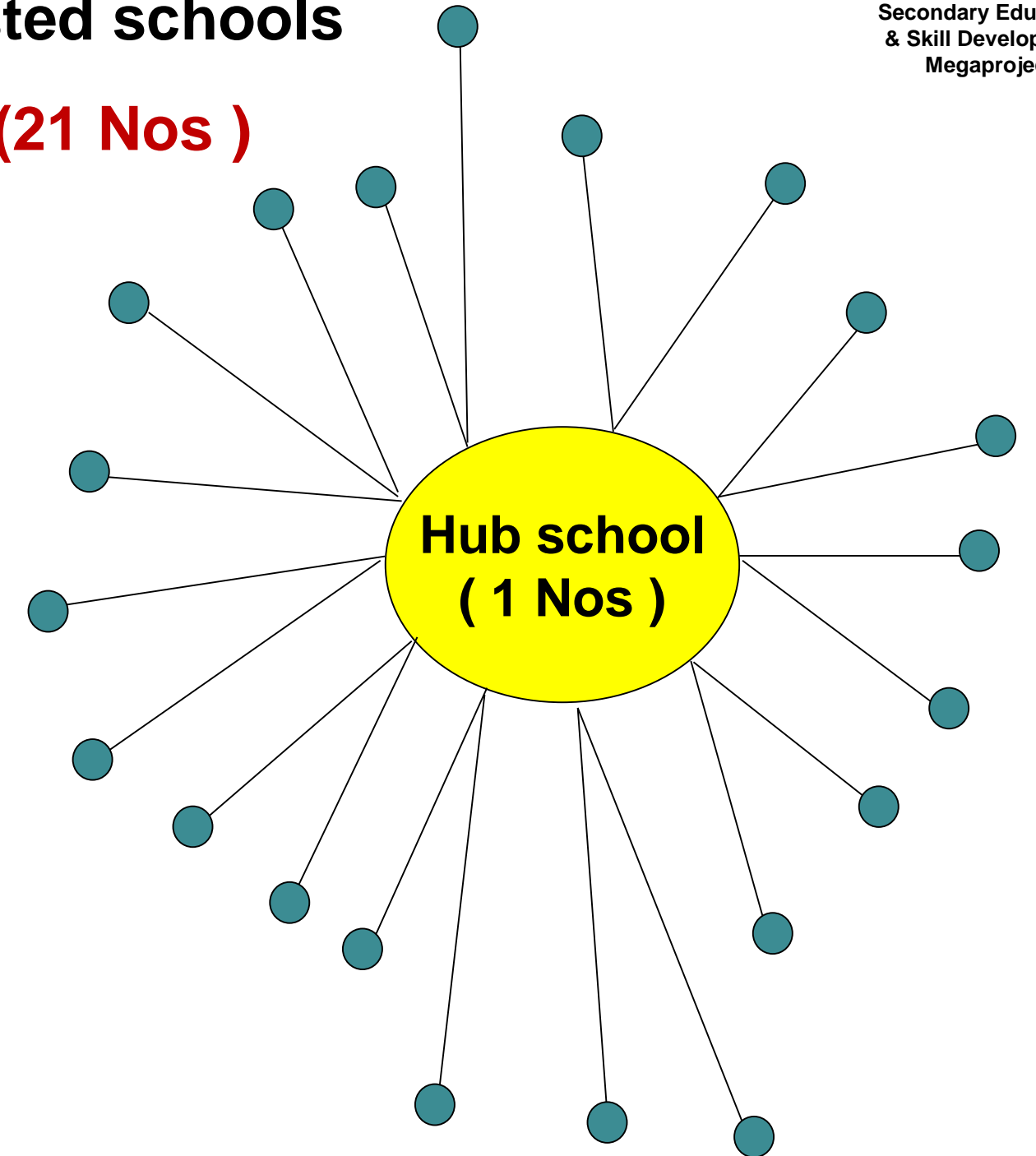
- ❑ Vivekanand project will have a hub and spokes operating model ... to increase Secondary education availability per 100 Sq Km by 600 % in states like Uttar pradesh & Madhya pradesh
- ❑ **80 %** of the hub schools will be located in talukas in rural India ... Serving the poorest families

Education vouchers based control system

- ❑ Entire system of 30,000 hub schools will run based on a sophisticated voucher based IT platform
- ❑ Vouchers will be awarded based on Merit ... but will be tweaked to favour the poorest families
- ❑ Each voucher will pay for the education of **22** children
- ❑ Vouchers will control education quality ... If more children opt to leave a School ... it will trigger a management change procedure

Assisted schools

(21 Nos)



* We are assuming that of the 8,58,916 schools in India 2,37,111 do not need assistance

The Educational voucher system ... Strategic concepts



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Vivekanand Project will deploy the Education voucher system to achieve the following Strategic objectives

- ❑ Ensuring social justice ... Providing free education and opportunity to the poorest sections of society
- ❑ Ensuring access to Opportunity and Jobs ... irrespective of Caste / Religion
- ❑ By enabling access to Economic Opportunity for all sections ... make Caste based job reservations un-necessary within **15** years
- ❑ The vouchers create a means to measure the school managements performance ... and ensure Quality
- ❑ The voucher is possibly the best means to reimburse Schools for covering **21** assisted schools (Single point ... bullet payment)

Central idea behind the Education Voucher system
Sarvodaya : “ The rise of all ”

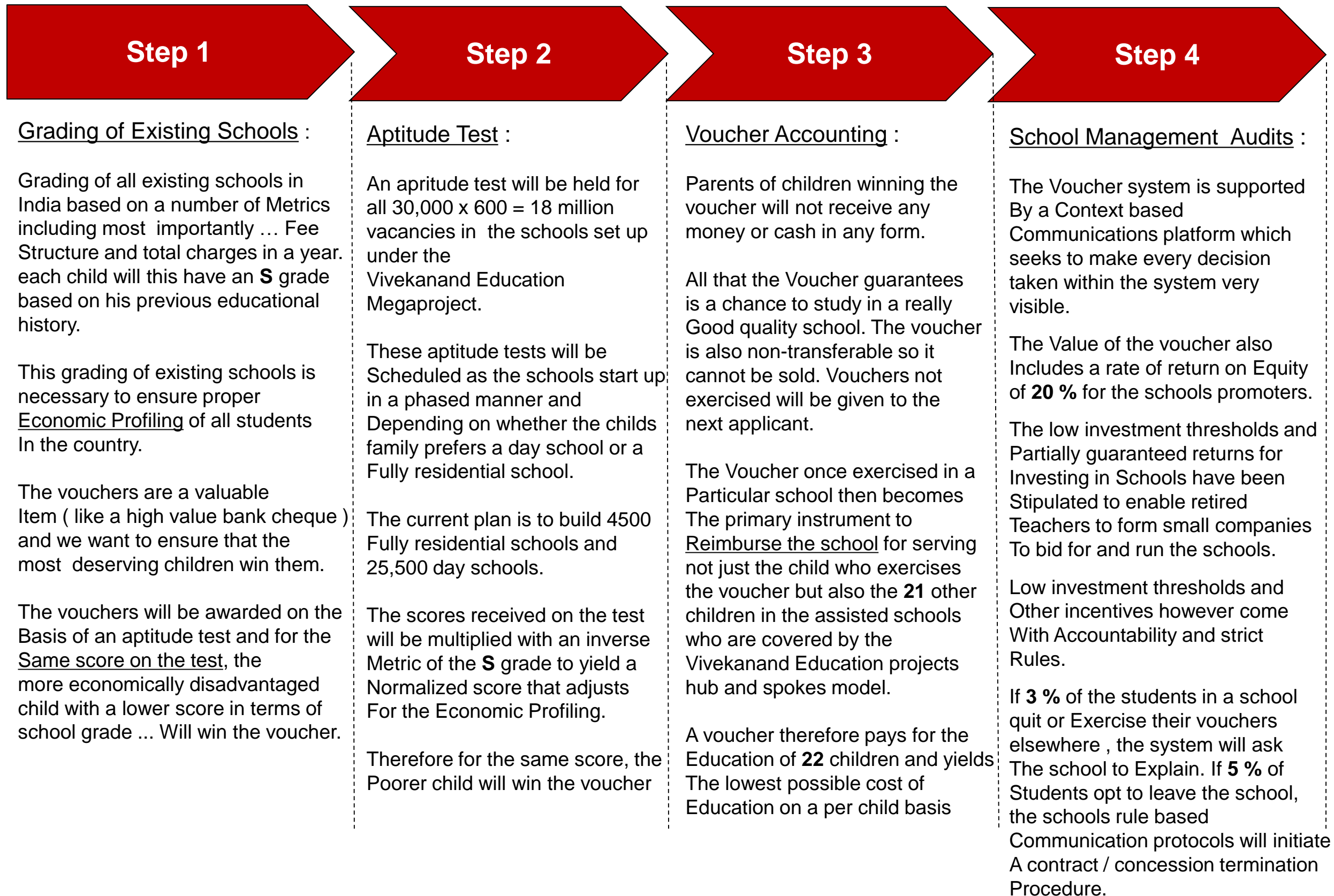
Maximize benefits to the masses by using innovative non – budgetary financing sources and technology to execute large education projects ... to provide world class education to the poorest children

By enabling access to Large Economic opportunity for all sections of society ... The Education Voucher system will create a More Equal society and make job reservations in India un-necessary by 2030 – 32



Vivekananda

Educational voucher system workflows ... and voucher types



Type of Voucher	Student type
1. Normal Voucher	Open for all. However the protocol is set to select the more economically disadvantaged student for the same score on the test
2. Fractional Voucher	Open for all. Mostly will be used by the Middle Class to claim a 2/3rd or 66 % reduction in fees
3. Double Voucher	This voucher if for NRI children, International students or children from Friendly countries that want to study in a unique Indian school. These will Most probably be used by those seeking admission to the fully residential schools. They will have a face value of 200 % that of a normal voucher and still be competitive with high quality education globally.

The Educational voucher system ...



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- ❑ A total of **18** million Education vouchers will be issued after an aptitude test . All children in India will be eligible to take the test
- ❑ Education voucher face values ... in the first year of operations
 - Rs **161,023** (Day schools)
 - Rs **262,390** (Fully residential schools)

} Vouchers will be Re-priced each year indexed to inflation
- ❑ Vouchers will fully finance the teacher sharing programme to cover 6,21,805 additional SSA schools
- ❑ Each voucher will actually educate approx. **22** children. Coverage cost per student ...lowest
- ❑ Voucher Award Criteria
 - Will be based on a simple aptitude test for each age level .
 - The score on the aptitude test will be multiplied with an inverse metric of the students past educational history to yield a total score.
 - The use of an inverse metric will ensure that only the poorest students win. Higher income groups will be on fractional vouchers.
- ❑ Vouchers will bring unprecedented accountability to the school system :
 - If more than **3 %** of students leave a school , the communications system will issue a show cause notice to a schools management
 - If **5 %** of students leave, the system will initiate termination of PPP proceedings
 - Voucher Value will be paid directly to schools ... No money to parents / students

Megaproject' s Education voucher system will be self regulating & foolproof



Educational voucher system ... Cost of education per child

- ❑ Education voucher face values
 - Rs **1,61,023** (Day schools)
 - Rs **2,62,390** (Fully residential schools)

- ❑ Each Education voucher actually pays for the education of **22** Children :
 - 1 child in the Hub school
+ 1 child in each of the 21 assisted schools = **22** children

- ❑ Therefore cost per child is :
 - Rs **7,319** (for day schools)
 - Rs **11,927** (when hub school is fully residential and assisted schools are day schools)

Sl. No.	Type of Voucher	Who will get	Cost of Voucher in Hub schools in Rupees
1	Full Voucher	Totally free education for children from Poorest families	Day schools : Rs 1,61,023 Residential schools : Rs 2,62,390
2	2/3 rd Voucher	Indian children from Middle class families	Day schools : Rs 1,06,275 Residential schools : Rs 1,73,177
3	150 % Voucher	Indian children from rich families, SAARC country children	Day schools : Rs 2,41,535 Residential schools : Rs 3,93,585

Vivekanand Education Megaprojects “ Voucher system ” has lowest cost of Education per child ... Compared to anywhere else in the world

Education Megaproject ... Communication platform & Digital control system



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□ Project deploys state of the art Digital communications platform

➤ Phase I : Re - configure SSA information system... to cut cycle time from 6 months to 6 seconds

- ✓ Create dynamic protocols & budget codes to broadcast information to individual schools ...
- ✓ Send out SMS' s to individual school principals ... Bypass all state machinery to take fund flow entitlement information directly to SSA schools & NGO' s
- ✓ Map Information Flow ... Identify who is holding up decisions ... Govt Officials to be identified by name ... Information to be published to NGO' s & Schools
- ✓ School in a Cloud : Create economic incentives for 4G/5G Telecom players to help spread secondary education and Skills development courses
- ✓ Install base system to report on teacher Absenteeism ... link with NGO' s across India for building database on teacher attendance

➤ Phase II ... Roll out of Megaproject information infrastructure

- ✓ Install context based communications platform to reduce construction costs & crash construction schedules
- ✓ Link communications system with Education Voucher protocols for total control
- ✓ Link SSA system with 6,00,000 Km of Gigabit fibre optic networks
- ✓ Use **4G** and **5G** wireless technologies to reach Secondary education and Skills development to over **6,21,805** schools

Worlds largest & most advanced IT system for schools ... System seamlessly migrates from construction into operations phase

Education Megaproject ... Public - private partnership (PPP) framework



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- ❑ A total of **30,000** New schools ... offered under **3** bidding rounds starting in 2019. BOT framework to be deployed
- ❑ Very significant lowering of entry barriers for genuine educators
 - Rs **2.02** crores ... for a Rs **28.6** crores day school
 - Rs **5.0** crores ... for a Rs **75.74** crores residential school
- ❑ Very easy to set up a school : Winners will receive Govt / acquired land and all recognitions along with advice packets
- ❑ However very strict and transparent performance criteria :
 - All 30,000 private operators specifically required to publish all their cost and pricing data on a common / open database.
 - Operators deviating by more than **5 %** from benchmarks... will be required to explain deviations
 - Violation of certain provisions of the PPP will invoke termination of concessions across geographies.
 - Thorough screening of applicants led by Tata Institute of Social Sciences
- ❑ Incentives for good operators ... More schools to run
- ❑ NGO' s to monitor school PPP' s by rotation ... will receive a fee for this service
- ❑ Indian Social Infrastructure Corporation (ISIC) Will Be Regulator ...ISIC Decision Is Final

Minimum capital catalyses massive investment using unique financing

Very strict , rule based , PPP framework is critical for clean system

Teachers / Skills instructors recruitment strategy ...



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❑ Education megaproject requires a total of 2.22 Million new teachers & Skills instructors

- 9,00,000 Teachers ... for the 30,000 New hub schools
- 1,300,000 Teachers ... Teacher sharing programme
- 1,10,000 Teachers on international assignments (5 % of 2.2 million teachers) ... Rotational basis

Dedicated India based teacher strength
at all times for **6,21,805** Schools

❑ Since 2.2 Million teachers are not readily available in India, megaproject will poach and train qualified people from other professions to be teachers

❑ Recruitment Strategy

- Large advertising campaign to attract potential teachers
 - ✓ Ad campaign will create a lifestyle around the teaching profession
 - Teacher / Skills instructor lifestyles (handsome campuses, excellent housing etc)
 - Job content (Teaching in countryside , Un-polluted work environment)
 - Extra earning opportunities (Foreign travel , Global content generation business)
- Employ 10,000 HR search consultants on incentive basis ... To shortlist **4.2** Million potential candidates with skill sets and right mindset for teaching
 - ✓ Recruit & train **2.2** Million of these candidates in phases for deployment

Attracting qualified retired people and people from other professions is only option left ... Effort will be on a war footing

Megaproject (Part 3) ... Additional facilities for children with Special Needs



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Defining the Challenge

- ❑ Of India's total population of 135 Crore population 2.7 – 3 crore people have a disability of some kind
- ❑ Of this 3 crore disabled people, 35 % or 1.05 crore are children

Vivekanand Megaproject plan

- ❑ All the 1.05 crore children with Special needs will be engaged with the Megaproject
- ❑ Children with special needs will be provided with special facilities within the 30,000 Hub schools and network of assisted schools
- ❑ After completion of their tenure / training the children will be assisted in leading normal lives
- ❑ The Megaproject will also employ some of these students and help / encourage them in various ways

Extreme focus will be at the Pre-primary and Primary stages for children with special needs





Megaproject (Part 4) ... Strategic leadership training in all Hub & Assisted schools

- ❑ The Vivekanand project seeks to Create leaders and independent thinkers in every field within its **30,000** Hub schools + over **6** lakh Assisted schools
- ❑ Security Aspect : Given the fact that India has seen more Terrorist attacks than the US, Europe and several other countries (put together) ... There is a need to create awareness and a Strategic culture within young people. NCC has been unable to expand from its **1.7** million strength due to fund and officer shortages. Megaproject will solve this problem



Winning an Educational voucher will also carry a responsibility to undergo basic leadership training. The Leaders contact program will expose children to inspirational leaders and new ideas. So it will be interesting and enjoyable as well.

- ❑ Vivekanand project plan at Two levels :
 - ✓ Class VI to Class VIII ... NCC type of Training
 - Homeland Security / Civil defence / first aid
 - Basic governance structures and civics
 - ✓ Class XI to Class XII ... Strategic training
 - Homeland Security / Civil defence / first aid
 - Basic governance structures and civics
 - Basic Vigilance skills / Anti terror procedures
 - Military history, Geopolitics and Military strategy



- ❑ Megaproject will engage **30,000** Retired military officers and **90,000** JCO's from the Indian armed forces to provide this leadership training



Vivekananda

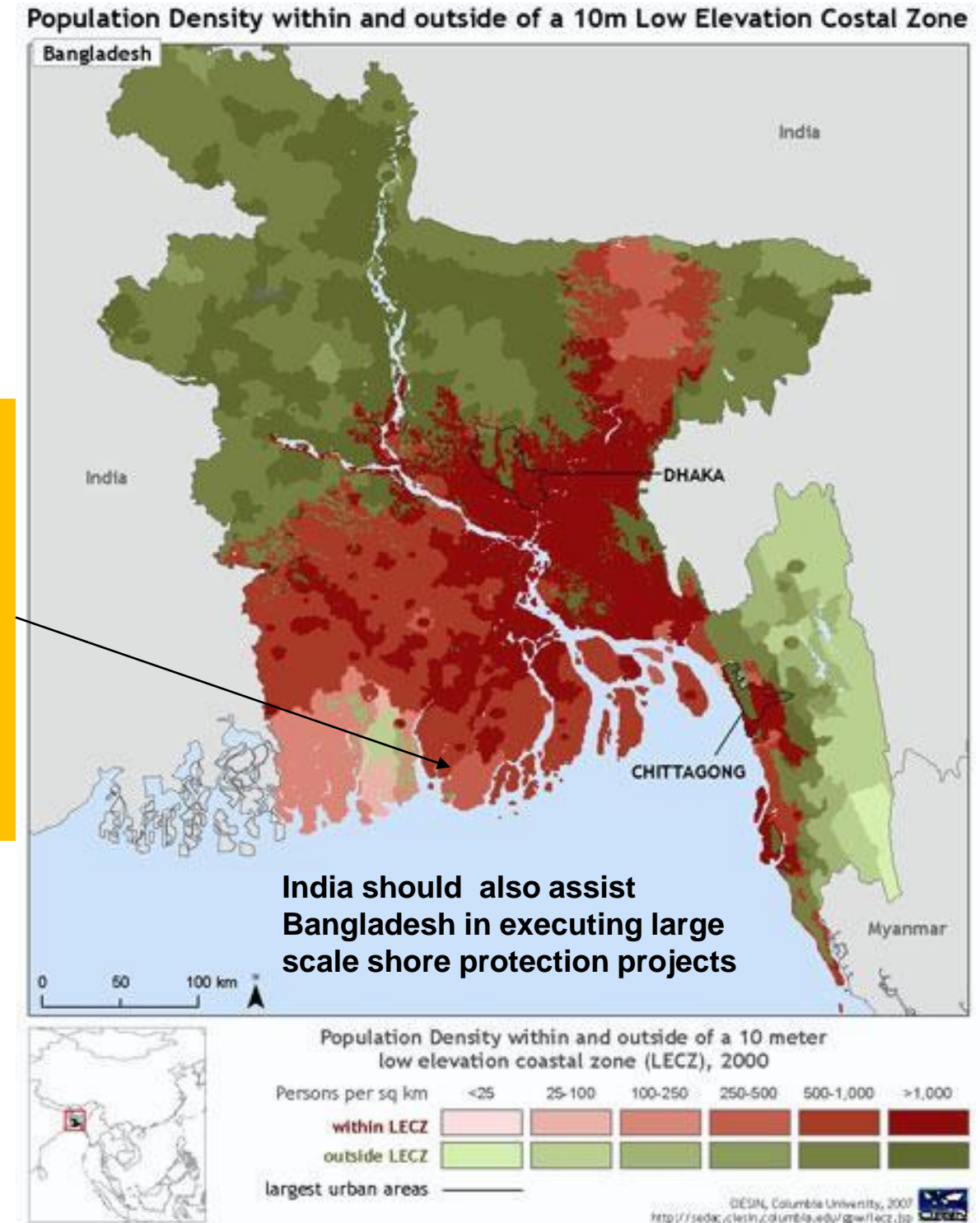
Megaproject (Part 4) ... **3,000** schools in Bangladesh (**In later phases**)

- ❑ As the Indian economy expands from US \$ **2.5** Trillion to US \$ **7.5** trillion by 2032 ... Bangladesh will be losing land due to rising oceans
- ❑ This rise in sea levels will push even more refugees into India as land is lost in Bangladesh
- ❑ This will pose serious security & demographic risks for India

Sustainable solution to the Bangladeshi refugee problem

- ❑ Indian planners hence forth will need to plan for the sustainable development of the sub-continent ... not just India
- ❑ The cheapest way to do this is to invest in large education and healthcare projects ... in Bangladesh
- ❑ Vivekanand megaproject proposes to build **3,000** K 12 schools in Bangladesh by 2032 ... **In later phases**
- ❑ This outreach must however be based on the condition that all refugees in India will be accepted back by Bangladesh

In excess of **10 %** of Bangladesh's landmass will be lost to the sea as ocean temperatures rise by **2 %**



Besides education & healthcare projects, India should enter into an agreement with Bangladesh ... to possibly double its GDP by 2032

Megaproject (Part 5) ... Creating **30,000** medium + **6,21,805** small and dense forests

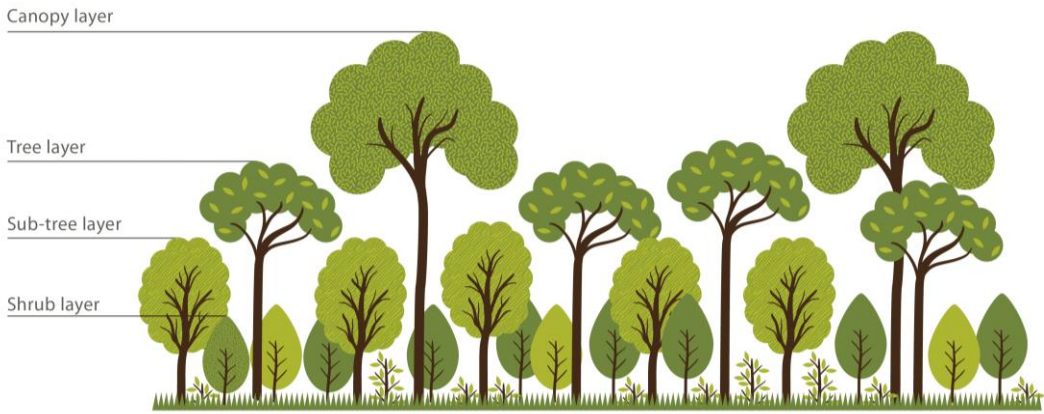


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Each of the 30,000 New hub schools to be set up under the Vivekanand project will create a 3 - 4 acre dense forest



Students within each assisted school will plant a 1 acre dense forest



Therefore a total of **30,000** New 3-4 acre dense forests and **6,21,805** + one acre forests will be planted under the Vivekanand Education megaproject



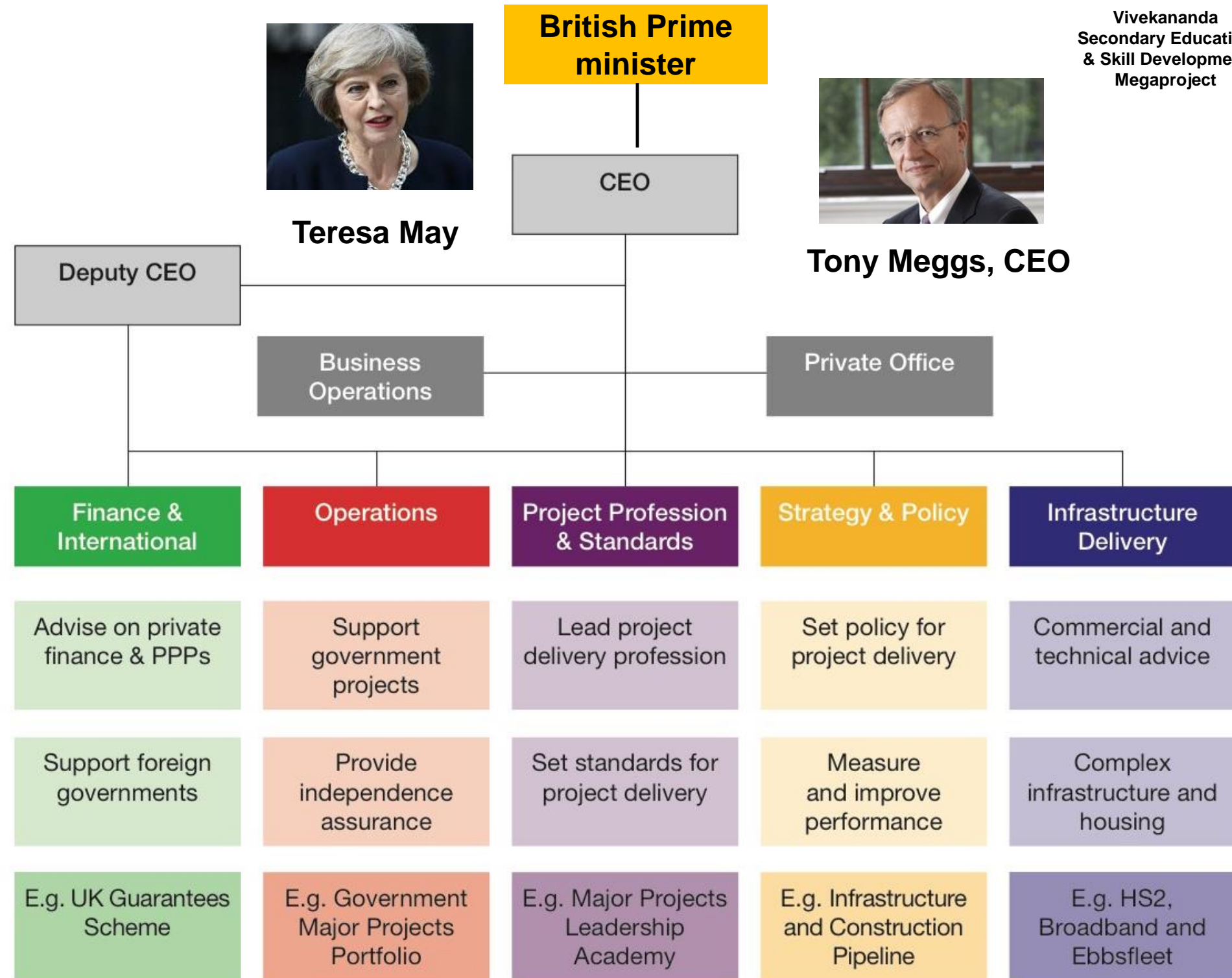
We will teach every child in India how to create new forests

Fast tracking the Vivekananda project ... Large projects office under the PMO



Vivekananda Secondary Education & Skill Development Megaproject

- ❑ India can use the already successful British Govt. model to execute large projects
- ❑ Indian large project office will have bandwidth of manage **200 large projects** with a total life cycle cost of **500 billion dollars**
- ❑ Large projects office in New Delhi to be staffed with over 200 project execution experts, finance & commercial specialists from the private sector



- ❑ **Vivekananda education megaproject**
- ✓ Since Education is a state subject ... The central Govt. will build the **30,000** schools and skills development centers ... and hand them over to the concession owners operating under the state govt.
- ✓ Similar offices will be set up in each state directly reporting to the chief ministers

Source : <https://www.gov.uk/government/organisations/infrastructure-and-projects-authority>

Vivekanand education project (Parts 1-3) ... Proposed execution schedule



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Megaproject

1. Six months to Six seconds project

Project Scope : Provide proof of concept by demonstrating Efficiency gains within village schools as Cash moves within 6 seconds to Village School accounts from the Ministry of HRD while simultaneously informing everyone within the State Govt's Education Departments hierarchy and in accordance with Schools approved budget.

Tie up with willing NGO's, Telecom companies, banks and collaborate with Central and State Govt's education departments ... to increase Educational outcomes by moving money faster. Pilot project in each state will be followed by state wide execution.

2. School in a Cloud Megaproject (Pilot Project)

Project Scope : Basic Pilot project already executed by Prof. Sugata Mitra at 7 locations across India.

The Vivekananda Megaprojects pilot will be slightly different as it will in addition test New 4G / 5 G technologies . In addition the tests will be with secondary school curriculum and skills development.

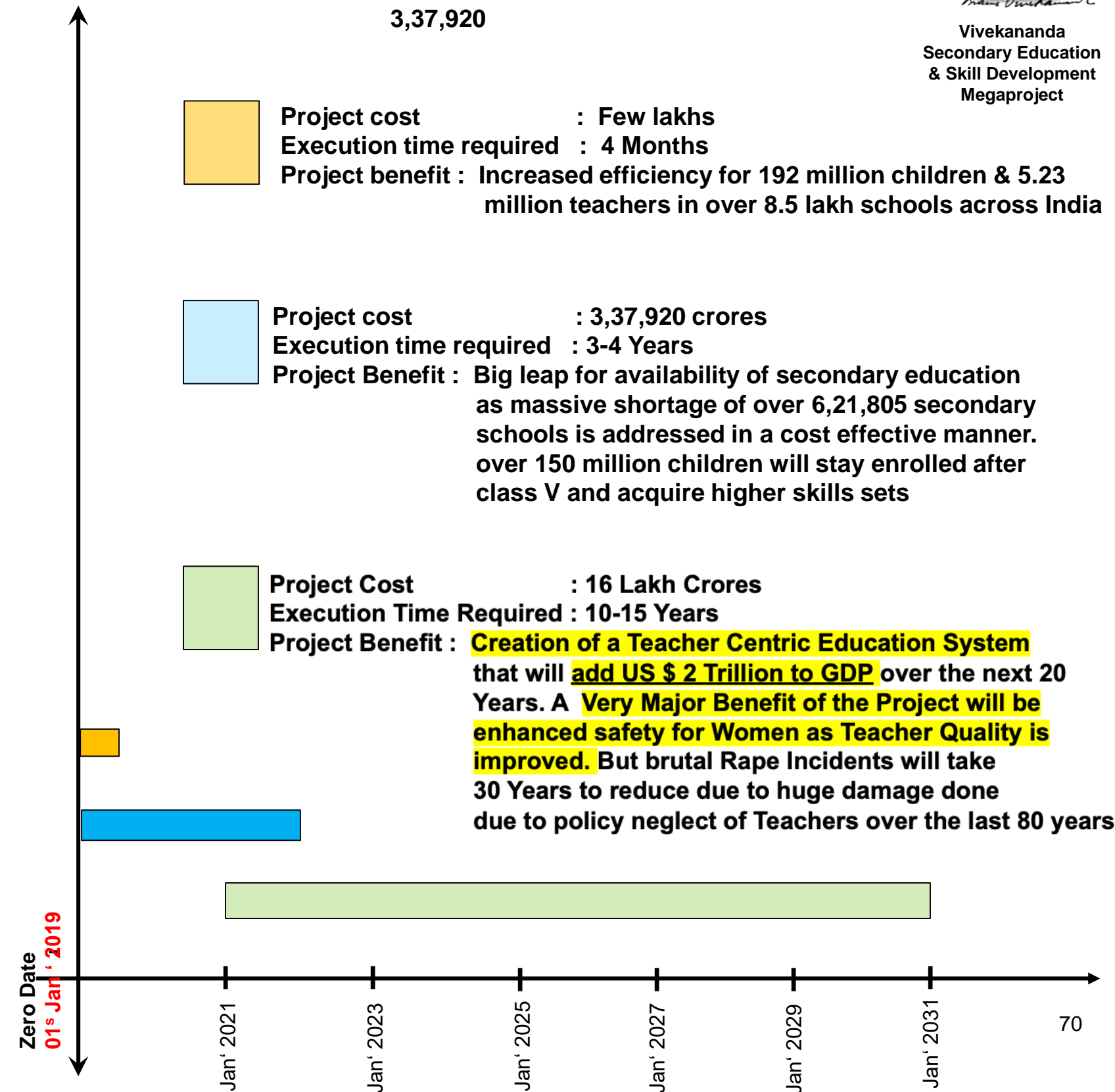
Once piloted the project is proposed for execution nationwide at over 6,21,805 locations using CSR funds ... to be completed in 3 – 4 years.

Tie up with willing NGO's, telecom companies, banks and collaborate with central and state Govt's education departments ... National skills development corporation, teachers training institutions etc.

3. Vivekanand secondary education & skills development megaproject

Construction of 30,000 New Secondary Schools and Skills development centers ... across 29 States and 7 Union Territories

One Pilot project will be constructed in Nashik and another at Parli in Maharashtra to test project concepts, simultaneously with National Rollout in Six Phases





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Innovatively designed financing scheme

Capex financing plan



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Vivekanand Education Megaproject

Executive Summary --- > Construction Phase Financing

CONSTRUCTION
PHASE (2019 – 2028)

Financial Options For Raising Rs. 100.55 Lakh Crores over 10 years ... from 12 different sources
Actual amount required is Rs. 14.95 Lakh Crores over a period of 10 years

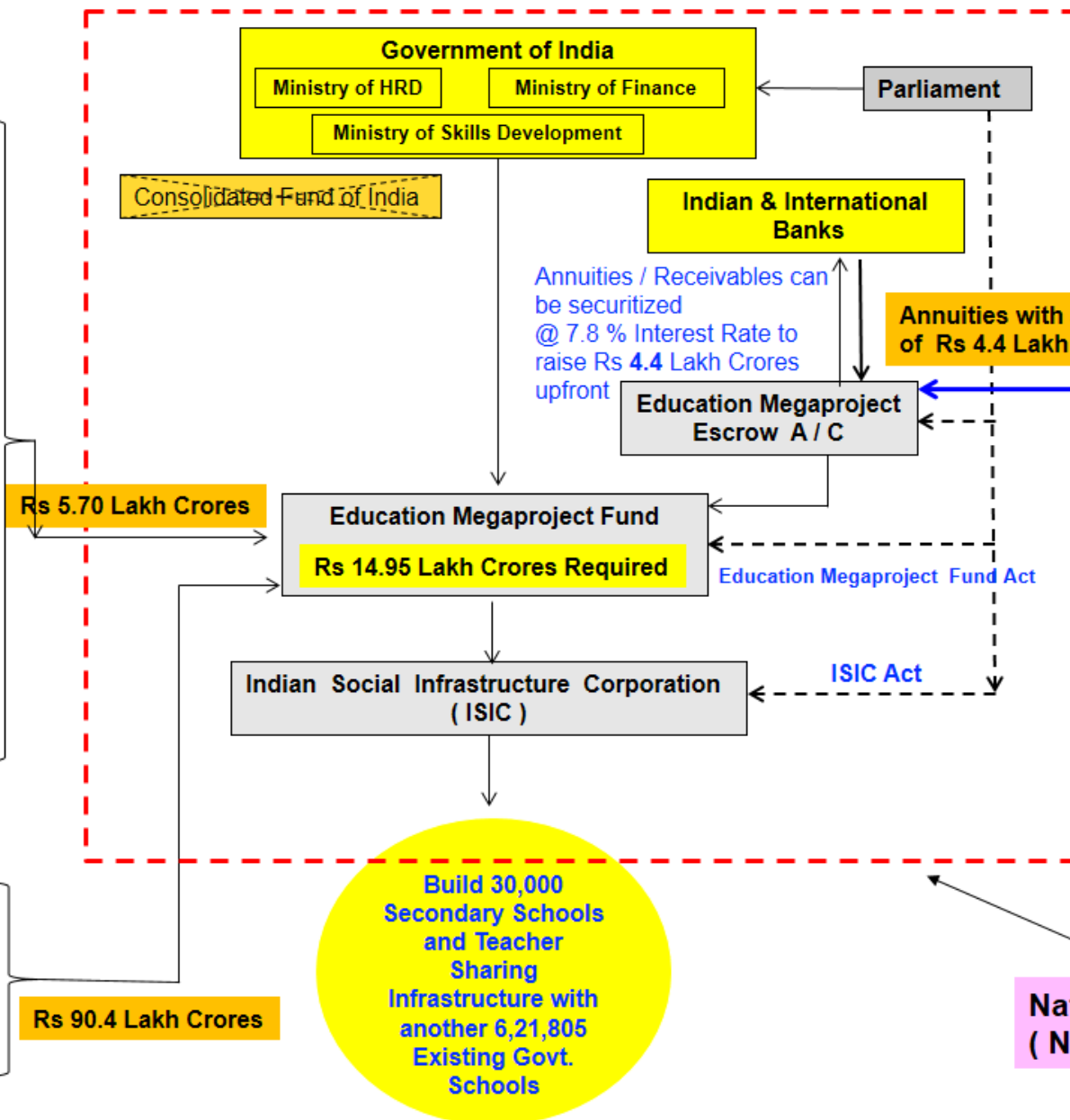
A. Non Tax Based Financing

1. 3 % of Forex Reserves currently @ \$ 393 Billion :
Rs 72,000 Crores
2. Bidding Rounds : Funds raised via bidding rounds for the Vivekanand School in a cloud programme :
Rs 4,739 Crores
- 3A. Un-Utilized Funds with Various Ministries at the end of each financial year : Rs 2,10,000 Crores
- 3B. Un-Utilized Development Aid (World Bank, ADB etc) :
Rs 35,000 Crores
4. Coordinated CSR Funding (Discounted) : Rs 18,417 Crores
5. Equity Infusion by 30,000 Private Parties (PPP) :
Rs 73,500 Crores
6. Calibrated Dis-Investment in PSUs
7.3 % of Market Cap: Rs 72,908 Crores
- 11A. Un-Utilized Secondary & Higher Education Cess (SHEC) Cess : Rs 83,497 Crores

B. Large Urban Equity Withdrawal Options

BIG SOURCES
OF CAPITAL

7. PSU Owned Land Bank in Metro Cities (UEW) : Rs 2.916 Lakh Crores
8. New Enhanced Fee for Non Agricultural Land Conversion : Rs 21.872 Lakh Crores
9. New Enhanced Fee For Re-Zoning Urban Land : Rs 65.617 Lakh Crores



Rs / US \$ Exchange Rate (12th Nov ' 2018) : 72.9078
India 10 year Bond Rate (12th Nov ' 2018) : 7.8 %
Repo Rate for RBI funds : 6.5 %

C. Innovative New Fee / Tax based sources (Annuities) with Securitization option

10. Quantized TOBIN Tax on Forex
Trns : Rs 1,49,086 Crores
or Rs 22,018 Crores per year
11. New Graduate Tax on Employer :
Rs 1.72,661 Crores
or Rs 25,500 Crores / year
12. Securitization of Existing Flows
 - A. Education Cess @ 3 %
Rs 44,011 Crores (Total)
or Rs 6,500 Crores / Year
 - B. 20 % of NREGA Funds
Rs 74,481 Crores (Total)
or Rs 11,000 Crores / Year

National Highway Authority of India (NHA) LOOKALIKE STRUCTURE

Education Megaproject Uses Familiar NHA Structure in Plug & Play Mode to raise Rs 14.95 Lakh Crores for Expansion of The Secondary School System in India

Opex financing plan

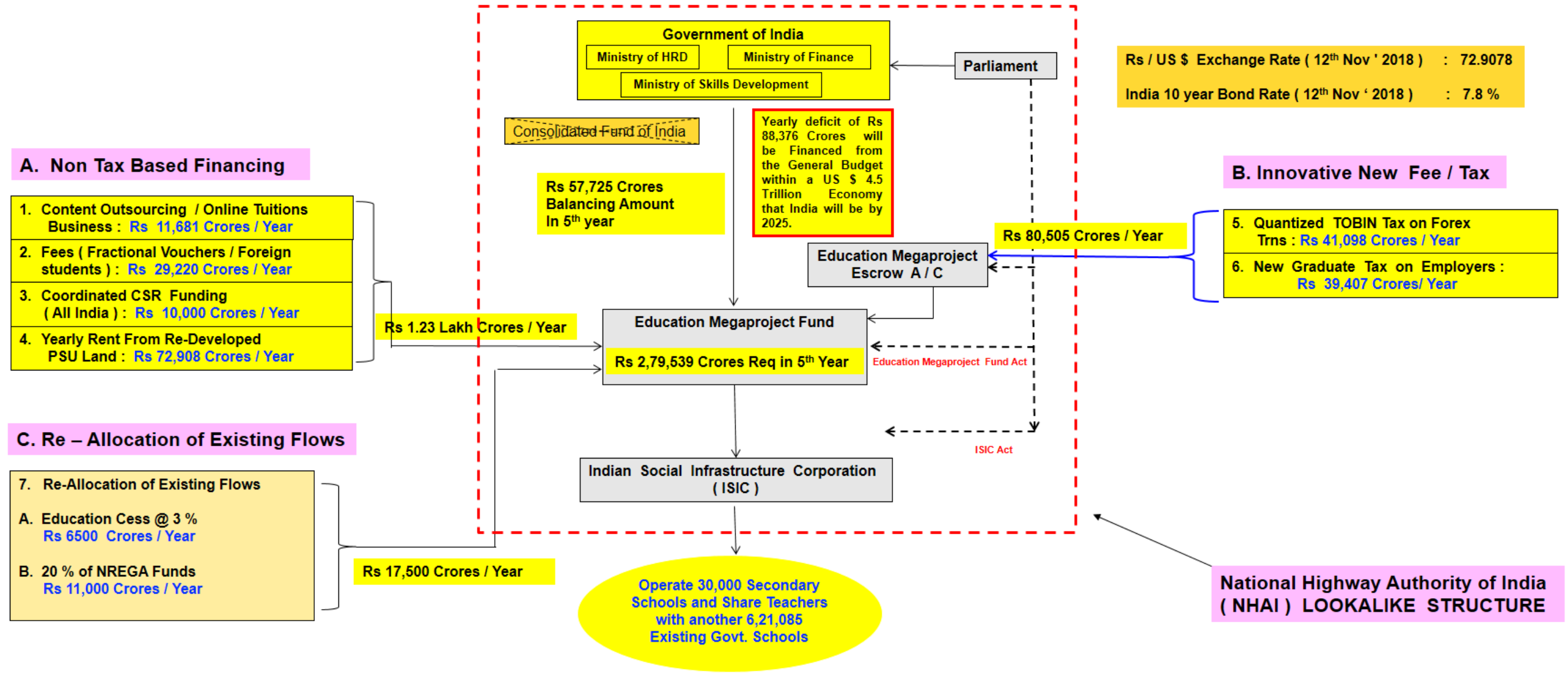


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Vivekanand Education Megaproject Executive Summary --- > Operations Phase Financing

Financial Options For Raising Rs 2,21,814 Crores each Year from Seven different sources

OPERATIONS PHASE
Beyond 2021



Education Megaproject uses familiar NHA Structure in plug & play mode to raise Rs 2.218 Lakh crores from 7 innovative sources each year. Balancing amount required is small within a US \$ 4.5 Trillion Economy that India will be in 2025

Vivekananda Secondary Education & Skills Development Megaproject

... Investment Multiplier Impacts



Vivekananda Secondary Education & Skill Development Megaproject

30,000 New Hub Schools & Skills Development Centers with a Total capital Investment = US \$ 141 Billion

Investment Multiplier = 3



India

Multiplier Effects



Six Months to Six Seconds Project

School in a Cloud at 8,00,000 + Locations across India and Bangladesh using 4 G / 5 G Networks

30,000 New Hub Secondary Schools in India and 3,000 in Bangladesh including 8,00,000 Assisted schools

30,000 New Skills Development Centers in India and 3000 in Bangladesh

150 Million Skilled Workers by 2027

US \$ 423 Billion

+

SIX Million New Jobs in the Education and Construction Sectors

Increases the Efficiency of 200 Million Children and 4.7 Million Teachers within Existing School System by Transferring Cash instantly in accordance with approved Budgets

Reducing Massive Secondary Education Shortages in 6,00,000 Locations within 4 years

TEACHER CENTRIC Education System Brings back the best minds to Careers in Teaching by 2028

Enhanced Women Safety

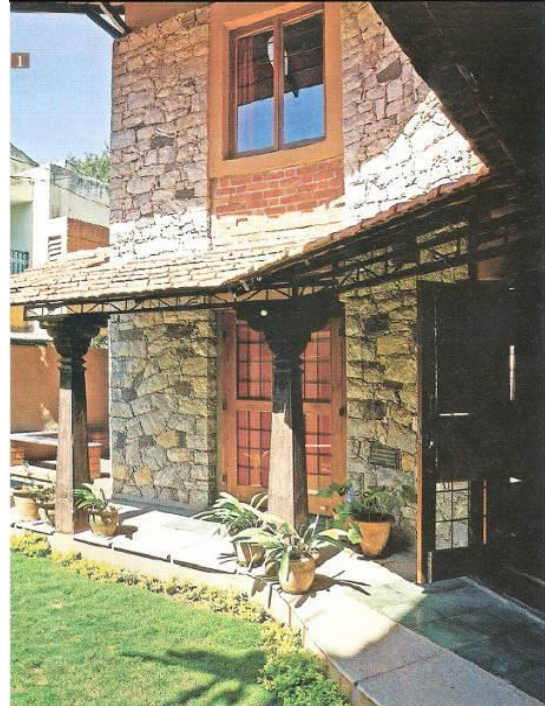


Teacher Centric Education System Adds Over US \$ 5 Trillion to Indian GDP / Year by 2038 by bringing the best Minds back to Careers in Teaching (Conservative Assessment)

Vivekanand Education Megaproject ... Look and Feel (2028)



Project will Define & Popularize a New Vernacular Architecture Across India



Project proposes to build 30,000 world class Secondary Schools and Skill development Centers across 29 states & 7 Union territories.



Projects by Architect : Mr. RL Kumar
Pictures Courtesy : Centre of Vernacular Architecture Trust , Bangalore
www.vernarch.com





The Vivekanand Project needs the following support from Govt. of India

- Approval of project Capex / Opex financing plans ... in consultation with Ministry of Finance
- Joint sponsorship by Ministry of HRD and Ministry of Skills development ... for the Vivekanand Project
- Support for time bound action plan to execute the Vivekanand Secondary Education and Skills development megaproject



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Megaproject

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The Design Lab, a division of the Nataraja Foundation, is a strategic planning & design organization specializing in large scale infrastructure project design and development.

The Lab has an agenda to provide thought leadership in the areas of Education, Healthcare, Urban Infrastructure, Energy and Defence as well as a number of other matters of national interest. We seek to bring totally new ideas to our chosen verticals of interest and specifically “ capacity creation ” related issues within these verticals.

Our papers and project designs are based on a rigorous study of the subject at hand and their objective is to provide a unique perspective on meeting large social and economic challenges. For this reason our work is followed by civil society groups in India and thinkers around the world.

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Thank You For Your Attention

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