The best, quickest and most efficient way is to build up from the bottom . . . Every village has to become a self-sufficient republic. This does not require brave resolutions. It requires brave, corporate, intelligent work. ..

We implement Mahatma’s vision If we interpret

- Brave as entrepreneurial and risk taking attitude
- Corporate to mean governance by setting & meeting strategic goals and objectives
- Intelligent as ICT enabled, socially networked models, called smart nowadays
Design of Smart Villages

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Motivation and Approach
### Motivation for the Study

- In India there are 610 districts, (200 backward) 600,000 villages (125,000 backward.)
- About 800 M people in India live in villages and at least half of them are below 25 years of age.
- The Government takes responsibility for uplifting rural and poorer regions. There is lot of public spending to improve the infrastructure, water and sanitation in these areas.
- These efforts are disparate, fragmented and piecemeal. Not much improvement achieved in most of the villages.
- There is a need for designing and building Smart Villages which are independent in providing the services and employment and yet well connected to the rest of the world.

### Government Programs for The Villages

- **Major Programs in Agriculture**
  - National Agricultural Development Program
  - Accelerated Irrigation Benefit Program
  - Fertilizer Subsidy
  - Bank loans, Free Electricity
- **Major Programs to Improve Employment**
  - Public Distribution System
  - Mahatma Gandhi National Rural Employment Guarantee Scheme
  - National Food Security Bill
- **Major Programs & Partnerships to Improve Nutrition Security**
  - Mid Day Meal Scheme
  - Integrated Child Development Scheme (ICDS)
  - Annapurna Scheme (Ministry of Rural Development) for senior citizens
  - The Nutritional Program for Adolescent Girls
  - Emergency feeding program (in eight districts in Orissa)
Design of Smart Villages

Smart Village

Smart: Definition

- **Smart** has its original meaning of "stinging, sharp" as in a *smart blow*
- **Smart Student**: having or showing quick intelligence or ready Mental Capability
- **Smart Machines**: Capable of making adjustments similar to human decisions, in response to changing conditions
- **Smart Windows**: regulates the amount of light transmitted in response to varying light conditions using sensors & controls
- Smart Buildings, Smart Grids,……
Design of Smart Villages

Financial, Human & Social Capital

- A person has three kinds of capital:
  1. **Financial Capital** Which Is Cash On Hand, Reserves In The Bank; Assets, etc
  2. **Human Capital**: natural abilities, health, intelligence, looks combined with education and experience to excel in certain tasks
  3. **Social Capital** which is relationships with other players who get opportunity to use his financial and human capital.

- Similar definitions apply to companies, Villages and Nations as well

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Social Capital in Humans

- Certain people do better by receiving higher returns to their efforts. Some people enjoy higher incomes, quickly become prominent and lead more important projects.
- The human capital explanation of the inequality is that the people who do better are more able individuals; they are more intelligent, more attractive, more articulate, more skilled.
- Social structure is a kind of capital that can create a competitive advantage for individuals in pursuing their ends. Better connected people enjoy higher returns.
- In a firm some deliver quality product but there could be rain makers who deliver clients. The former does the work but the latter makes it possible to benefit from the work.
Social Capital: Features

- Social capital: The good will that is the result of social relations and that can be mobilized to facilitate action
- Social capital is both "appropriable" and "convertible"
  - Appropriable in the sense that an actor's network ties can be used for purposes, such as information gathering or passing on a good word.
  - Convertible to other kinds of capital: the ties in a social network can be converted to economic or other advantage.
- The convertibility rate of social capital into economic capital is lower. Economic capital is most liquid

Village

- A Village is a bundle of dozens of services delivered effectively and efficiently to the residents and businesses.
- These services could be location specific depending on the demography of the village and occupations of the residents.
- New designs, technologies and management models should be used to upgrade the existing services such as Power, Water, Buildings, Retail, Health care, etc.
- Requires strategy, integrated planning and also monitoring & execution using appropriate governance models.
Smart Village

- The ‘smart’ concept is in the policy arena recently
- Main focus as drivers of growth are the role of ICT infrastructure, human capital/education, social and relational capital and environmental factors
- Village performance depends on hard infrastructure (physical capital), and increasingly on the availability and quality of knowledge, communication & social infrastructure (intellectual capital and social capital).
- A smart village has investments made in human and social capital in addition to physical capital
**Investment Climate**

- *Investment climate* of a village is the policy, resources, infrastructure, institutional, and behavioral environment that influences the returns and risks of an investment.
- The village can be a tourist location, pilgrimage centre, or a place of historical importance etc. Mines, Forests, Ocean shores or River banks can be part of the natural environs of the village.
- The primary occupation of the villagers can be farming, aquaculture, working for industries such as apparel or leather goods or Toys.
The Service Chains

- Some of the service chains like the Water, Power, Health care are standard shared services.
- These services could redesigned to be smart using cloud, ICT and data analytics.
- Affordable housing, Retail, Education, Skill based training, Rural employment, Farm to market could be specific to the Village
- Mapping each of the services, identifying strategic players and coordinating their actions is critical for success.
- Social capital with lead players is critical.
Village Governance

Institutions

• The village Panchyat, State and Central Governments are the regulators and providers of the basic services.
• NGOs, Social Groups organize health care and food security programs
• The Farmers are subject to APMC and other acts
Formulate Growth Strategies

- Formulate Growth Strategies for the village to make it self-sufficient taking into account the *investment climate* and protecting native occupation and heritage of the village.
- If a village is a tourist location, then the growth strategies should be aligned towards *restaurants and hotels*, transportation services like cabs or buses, *vocational training to act as guides, security, working as chefs in restaurants* or kirana shops selling the unique products made in the village, pharmacies and hospital services in a mobile van etc.
- The residents can be trained in providing these services & the funding agencies, Micro finance Institutions or NGOs can be approached.
Pochampally Village

- Pochampally is a village 40kms outside of Hyderabad, called Bhoodan Pochampally. Acharya Vinobha Bhave started Bhoodan Movement (Land Donation) from this village.
- Famous for **Pochampally ikkat tie-and-dye weave art**, won IP Rights in the Geographical Indications Category (Equivalent of a Copyright or Trademark).
- Pochampally is one of UNDPs 36 rural tourism sites, and is supported by the Ministry of Tourism.

### Occupation vs Number of Families

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number of Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weaving</td>
<td>1488</td>
</tr>
<tr>
<td>Sari Shop Owners</td>
<td>102</td>
</tr>
<tr>
<td>Agriculture</td>
<td>402</td>
</tr>
<tr>
<td>Toddy Tapping</td>
<td>109</td>
</tr>
<tr>
<td>Washing</td>
<td>93</td>
</tr>
<tr>
<td>Fishing</td>
<td>79</td>
</tr>
<tr>
<td>Basket Weaving</td>
<td>28</td>
</tr>
</tbody>
</table>
Pochampally Village

- Pochampally does more than $22 Million annual business in yarn sales, purchase of handloom products and sales.
  - The marketing is done through the cooperative society and APCO, the master weavers and the business houses in Pochampally.
  - Pochampally weavers association sell their products online through pochampally.com.
  - The products reach the market through various channels operated by middlemen.
- The vocation training institutes like Swamy Ramananda Thirtha Rural Institute (SRTRI) near Pochampally, do not cater to the weaving community at Pochampally.
Design of Smart Villages

Recommendations

- Pochampally as a model village of the tourism department, has no strategic growth orientation.
- Current focus is on Sarees and local markets. Their competencies are in Design. Should focus on Men, Women and Children (both Indian & Foreign) dresses and use its social capital to link into the global value chain.
- Protect the heritage and skill of weaving pochampally sarees by training people in other villages and encouraging more innovation rather than keeping it in house
- Should follow advances in design and weaving automation and environmentally friendly techniques
- Governance follows classical Panchayat model that is not entrepreneurial.
- Social Capital wasted away with no strategic direction

Conclusion

- There is no denying fact that we need smart villages. This is the biggest challenge facing all developing countries today.
- There are technologies available and they are successful elsewhere. But the failure comes from lack of strategy, integrated planning and execution
- The ecosystem framework of a village and city based on its location and investment climate will guide in developing growth strategies
- They can be replicated to millions of villages and towns around the World and this is in line with the inclusive growth initiatives.
Design of Smart Villages

Applying STERM Framework to build a Smart City

The Five STERM forces

- **Science** research generates new and or improved products
- New **Technologies** (Internet, Search, Solar) rapidly emerging
- New **Engineering** materials and designs come out every day.
- **Institutions** including Government and Social Institutions play a very important role in service chains. **Regulations and policies** with regard to infrastructure, climate change, immigration, trade, outsourcing require attention
- New **Management** techniques and business models such as outsourcing, sell direct, supply hubs, e-retail, telemedicine, are invented to enable growth.
Innovations

- Audio visual interfaces for all applications
- Local language support
- Equipment that can withstand harsh environments
- Low cost medical services
- Low cost housing
- Processed food & food courts with hygienic affordable and nutritious food