2018 SMC IITK Innovation Framework Presentation

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INNOVATION FRAMEWORK:
TECHNOLOGY ENABLED STARTUP OPPORTUNITIES

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(a) Classification of types of Startups in Global India context
(b) Innovation is broader than Technology alone
(c) Increasing Pace of Innovation
(d) Seven features common across successful startups
(e) Where did VC’s place their ~$65B bets in 2014-2015
(f) Where did VC’s place their ~$55B bets in 2015-16
(g) Socially motivated Commercial Enterprises are needed in India
(h) Top 10 Startup Themes based on “Needs” in India
(i) Top 3 deep-technology picks for their global disruptive potential
### Classification of types of Startups in Global India context

#### Type II

**Startups addressing Indian Problems & Opportunities with means in India**

- Technology enabled Problems and Opportunities unique to India.
- Examples:
  - **IEX**: electronic power trading platform in India
  - **Indus OS**: Indian mobile phone operating system
  - **OnlinePrasad**: blessings from an Indian holy site on a website
  - **PlexusMD**: network for doctors and healthcare organisations

#### Type GG

**Startups addressing Global Opportunities with Global means**

- Emerging global technology maturity based solutions for global customers
- Examples:
  - **Boltt**: wearable tech & AI
  - **Intugine**: IoT device to control other smart devices
  - **Caspar.ai**: Smart home automation platform.

#### Type GI

**Startups addressing Global Opportunities with India focus**

- Customizing global technology trends to Indian context
- Examples:
  - **X-Factor**: Electronic tax filing
  - **ideaForge**: Drones/UAVs for special use in India
  - **Flipkart**: Amazon of India
  - **Ola**: India’s Uber
Innovation is broader than Technology alone

Innovation is Multi-dimensional ...

The Innovation Cube (© Sandeep Muju, 2013)
*The increasing *Pace* of Innovation*

Innovation *is was a slow process ....*

*It is “Revolutionary” when breakthroughs happen ..*

*It is “Evolutionary” in the meantime ..*
Where did VC’s place their ~$65B bets in 2014-2015*

$11.4B Business & Financial Tech
$9.1B Urban Mobility & Vehicles
$8.9B Biotech & Pharma
$8.7B Advertising & Media
$6.4B Big Data
$6.0B Energy & Industrial
$5.3B Communication & Security
$5.9B Healthcare & Medical
$2.8B Learning & Playing

*Source FORTUNE

Primary focus on global commercial business opportunities
$26B E-Commerce & e-services
$8.0B Software
$3.2B Hardware
$2.4B Advertising
$1.6B Social Media
$1.4B Communication
$1.3B Telecoms
$0.9B Search
$0.8B Music & Video
$0.7B Gaming

Primary focus on global commercial business opportunities
Socially motivated Commercial Enterprises are needed in India

Just in two prior years (2014-15 and 2015-16) VC’s spent over $120B on commercial business ventures!

*India needs Socially motivated Enterprises that are also sustainable => Commercial Social Entrepreneurship!*

**For Example:**
Kumbaya, is on a mission to provide not only affordable efficient solar power but also an agnostic network connectivity to the world’s unconnected communities. The company founded a year ago, by Mike Freni is committed to achieve the #1 Goal of the United Nations, Sustainable Development – to eliminate poverty by increasing access to technology, education, and reliable infrastructure.

Kumbaya has harnessed the recent advances developing leading edge technology to solve some of the world’s largest problems. Kumbaya platform, zeroXess, a modular (emission free) solar powered system that connects users to LTE, 3G, WiFi or satellites, ultimately providing broadband connectivity access for everyone. The platform also allows access for non-invasive eHealth monitoring devices and point-of-care decision support. This small but powerful affordable device can be deployed all over the world and, with a little sun and connectivity, will bring power, TV, radio, broadband internet, and even CO/CO2 and weather sensors, and much more to off-grid populations, refugee camps, and areas afflicted by natural disasters.
Seven features common across successful startups ...

Some of the common themes that run across successful startups include,

1. Provides a solution that addresses a problem or opportunity faster/better/cheaper than what exists,
2. The problem/opportunity being addressed has large enough addressable market size (TAM),
3. Value proposition is clear, and there is thought behind how it can generate revenues (revenue model),
4. It has Customers (or potential Customers) that want it and are willing to pay for it,
5. Entry Barrier for competition: Has some type of IP (Intellectual Property) whether in the form of formal Patent or an embedded unique know-how (or code) that is hard to copy/reverse-engineer,
6. Has a well balanced, high-functioning, and resilient founding/leadership team,
7. Has a good ecosystem of Mentors, Advisors and/or actively engaged Board members,
Top 10 Startup Themes based on “Needs” in India ..

1. Pollution/Waste
2. Clean/Renewable/Off-Grid Energy
3. Food/Agriculture
4. Health, Medical & Bio-Informatics
5. Air/Land/Water Transportation - Autonomous & otherwise
6. Digital services and E-commerce related
7. Blockchain & Cryptocurrency
8. Smart Materials
9. AI/ML/NLP
10. IoT/IoIT/IoMT/IoHT

Problems worth solving in India for Indian and Global Customers ...
Top 3 deep-technology picks for their disruptive potential..

1. **Blockchain**: The biggest business process “tech” innovation since the Internet!
   Applications: Cryptocurrency, Smart-contracts, Supply Chain, Digital-identity, etc

2. **Artificial Intelligence**: The most pervasive “tech” innovation since Electricity!
   Applications: Bots, Intelligent Robots, Health Diagnosis, Smart Transportation, Forecasting, etc

3. **Gene Editing**: The biggest innovation since Darwinian evolution!
   Applications: Precision medicine, Disease prevention, Drug development, Crop yield, etc

*The race between Enhanced Humans and Intelligent Robots has just begun...*
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