

*Innovating in India: Opportunities  
for German Firms*

(German Title: Innovieren in Indien:  
Chancen für deutsche Unternehmen)

*Hamburg, May 7<sup>th</sup>, 2012*  
Talk at the Event “Innovationsstandort Indien”

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*Hamburg University of Technology (TUHH)*



**Research Areas:**

- Fuzzy Front-end of Innovation
- Intellectual Property Rights
- Open Innovation
- Innovation in SMEs
- Globalization of Innovation
- Mobile Commerce / Banking



**Research Project  
“Global Innovation”**

Innovation management  
related research with  
special focus on chances &  
challenges in India



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2

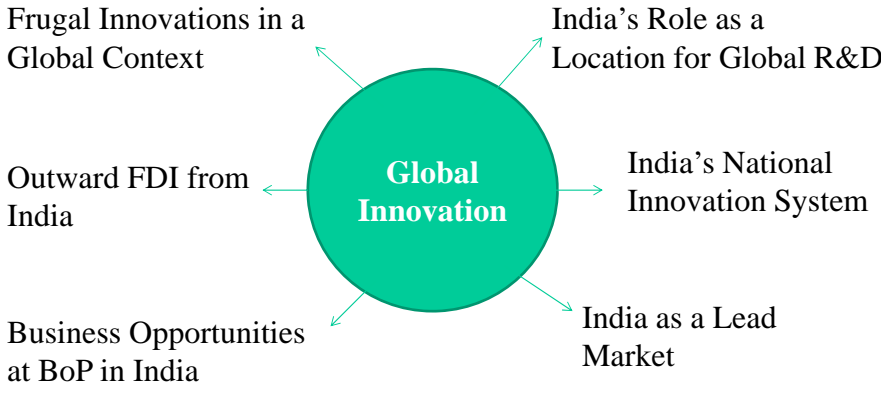


## Research Project Global Innovation

*Focus of our studies...*




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**Global Innovation**


- Frugal Innovations in a Global Context
- India's Role as a Location for Global R&D
- Outward FDI from India
- India's National Innovation System
- Business Opportunities at BoP in India
- India as a Lead Market



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3



## India: Now & Then?


*Why it makes sense to partner India*



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Indicator	1947	2011
Population (1951)	361 million	1.21 billion
Life expectancy at birth (in years) (1951-2007)	32	66 (M) / 71 (F)
Literacy	12%	74%
Per capita income (Current prices; RBI & IMF data)	Rs. 255	Rs. 70,654
Per capita income (Current prices, USD) (1991-2011)	\$ 334	\$ 1,389
Universities	20	544
Colleges	~ 500	31,324


Based on various publications and data sources



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4



## Expected Development of India's Economy



*Sustained growth to catapult India in the top league*



All things equal, India is set to emerge as the third largest economy by 2050, overtaking Germany and Japan. Even though per-capita income will remain considerably lower than in the G-7 states


Rang 2009	Land	BIP in Mrd. USD (Kurs 2009)	Rang 2050	Land	BIP in Mrd. USD (Kurs 2009)
1	USA	14.256	1	China	51.180
2	Japan	5.068	2	USA	37.876
3	China	4.909	3	Indien	31.313
4	Deutschland	3.347	4	Brasilien	9.235
5	Frankreich	2.649	5	Japan	7.664
6	UK	2.175	6	Russland	6.112
7	Italien	2.113	7	Mexiko	5.800
8	Brasilien	1.572	8	Deutschland	5.707
9	Spanien	1.460	9	UK	5.628
10	Kanada	1.336	10	Indonesien	5.358
11	Indien	1.296	11	Frankreich	5.344

Quelle: Weltbank, PwC-Berechnungen

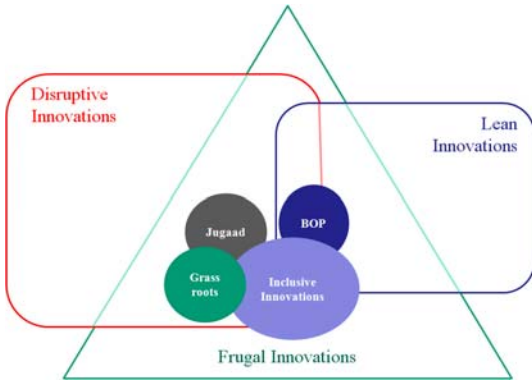

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5


## Innovations in and for Emerging Markets



*“Good enough” quality often key to success*



Frugal innovations seek to minimize the use of material and financial resources in the complete value chain with the objective of reducing the cost of ownership of a product while fulfilling or even exceeding pre-defined criteria of acceptable quality standards.




Definition & Graphic: Tiwari and Herstatt (2012a,c)



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6


## Maruti A-Star

### *A car primarily conceptualized for India*





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“Within 3 years of its launch the A-Star has been sold over 2 million times, making it a resounding commercial success.”


Source: Tiwari and Herstatt (2012b)

- A compact car with overall length of 3500 mm and seating capacity for 5
- Euro V compliant engine that emits CO<sub>2</sub> as low as 103 gms per kilometer; high fuel-efficiency with a mileage of 19.59 kilometers
- Basic design at Suzuki headquarters; styling at the R&D center in India
- External cooperation in India: Germany's Mann+Hummel group developed an air intake filter system to reduce the component weight by 50% and enabled cost savings per component by approximately 25%
- 33% share in Maruti's exports (sold as Suzuki Alto and Nissan Pixo in Europe)





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7


## Basic Characteristics of Frugal Innovations

### *Value-added for customer & manufacturer*





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- Affordability for customer segments large enough to enable economies of scale and reduce costs of production & distribution
- High volume opportunities to compensate for low profit margins
- Robustness to deal with infrastructure deficiencies such as voltage fluctuation, abrupt power-cuts, dust, and extreme temperatures
- Fault resistance to cope with unsophisticated / semi-literate or even illiterate users
- Low costs of usage, maintenance & repair


Source: Tiwari and Herstatt (2012b)

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8


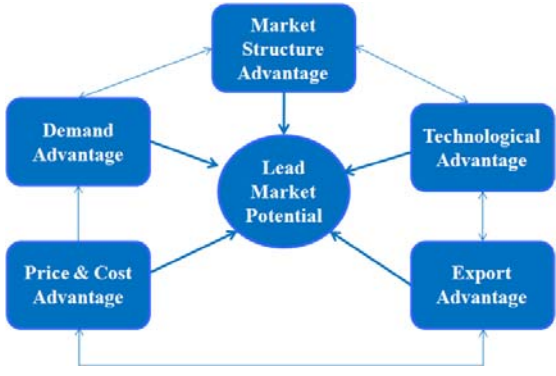
## The Lead Market Approach

*An updated and extended model*





“Local innovations in such markets become useful elsewhere as the environmental characteristics that stimulated such innovations diffuse to other locations.”

(Bartlett and Ghoshal, 1990:243)




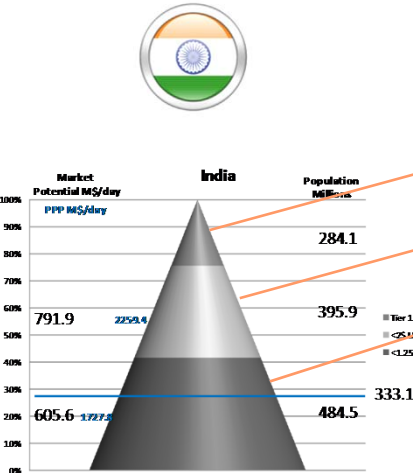
Source: Tiwari and Herstatt (2012a)


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9


## India's Demand Advantage

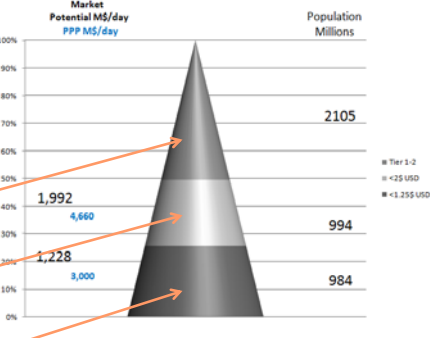
*India's economic pyramid has similarities...*





**India**



Market Potential MS/day (PPP MS/day)	Population Millions
791.9	284.1
2252.4	395.9
605.6	484.5
1322.2	333.1



**BRIC + Next 11**


Market Potential MS/day (PPP MS/day)	Population Millions
1,992	2105
4,660	994
1,228	984
3,000	984

Data based on: UNDP 2009, World Resources Institute 2007, OECD 2010, The Economist Intelligent Unit 2007


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10


## India's Export Advantage

*Increasing acceptance for Indian goods*





FY 1990-91	FY 2010-11	Growth	CAGR
18.1	254.4	1,302%	34%

India's exports to selected world regions in billion US\$. Based on RBI data.


Primary factors responsible for India's success in exports are:

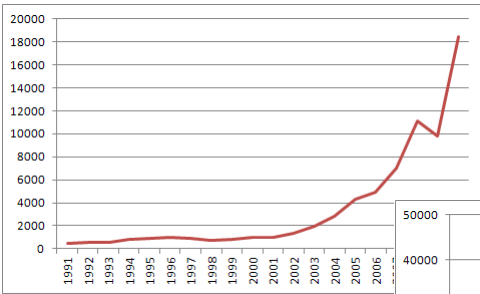
- Increased quality due to competition pressure in an open economy
- Infusion of new technology & fresh capital due to FDI by MNCs
- Policy initiatives (e.g. creation of Special Economic Zones (SEZs) and signing of free trade agreements (FTAs) with South Asian and ASEAN countries)


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11


## India's Export Advantage

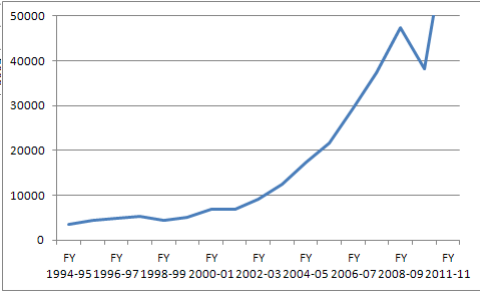
*Exported goods are not mere carpets...*





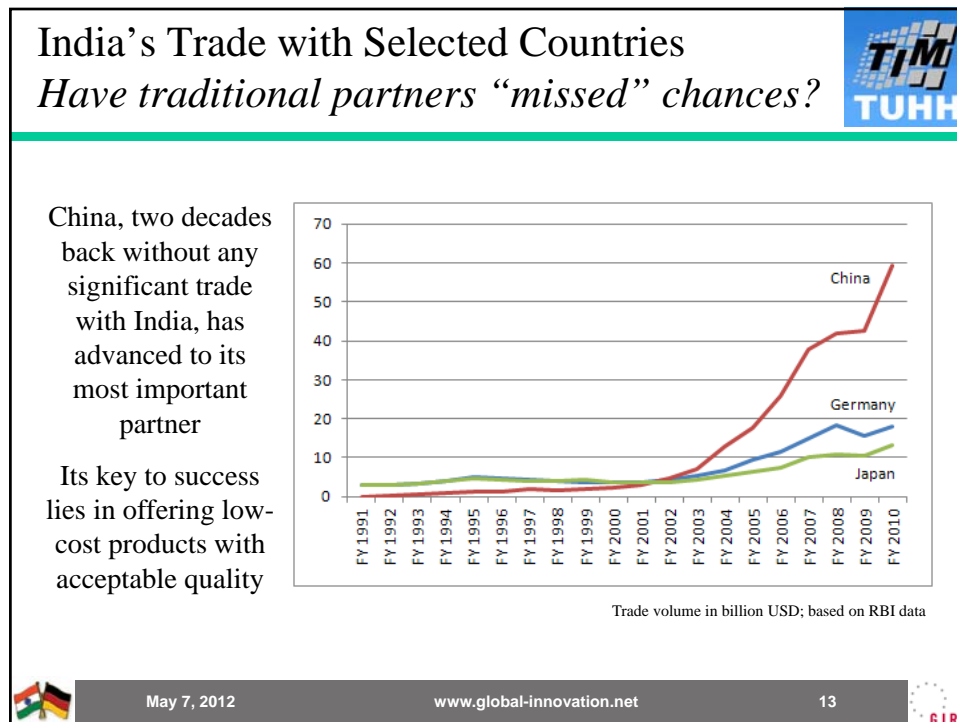


India's export of transport equipments in million US\$

India's export of engineering goods in million US\$




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12




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13



## Key Implications...

- India has emerged as a “lead market” for frugal innovations.
- Demographic pressures in developed countries require firms to seek market opportunities in promising future markets, e.g. India.
- Increasing global competition for resources, environmental concerns, and economic development in developing countries would further boost the need for *frugal innovations*.
- Financial constraints and cost pressures would increase the demand for “low cost, good enough” solutions in the developed countries too.

▼

**„Das Land der Ideen trifft das Land der Chancen“**

Dr. Jürgen Hambrecht, ehemaliger Vorsitzender des Asien-Pazifik-Ausschusses der Deutschen Wirtschaft




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14






**Thank you for your kind attention**  
**ध्यानपूर्वक सुनने के लिये धन्यवाद**  
**Vielen Dank für Ihre Aufmerksamkeit**

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