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Demand Driven Standardization and the Role of Innovation in Demand Stimulation

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FG Innovation
Economic Functions of Standards

• “A standards can be defined as a construct that results from reasoned, collective choice and enables agreement on solutions of recurrent problems”
• “A striking balance between the requirements of users, the technological possibilities and associated costs of producers, and constraints imposed by governments for the benefit of society in general”

(Tassey 2000)

However, that balance might be lost!
Needs of Developing Countries
Telco Business Case vs. Standardization Pace

Revenues

Asset Lifetime is usually 5-10 years

Investments

Standardization pace is faster

(eMisr 2011)
Supply vs. Demand
Build it and they will come.. Will they?

- Development policy has usually been concerned with increasing supply infrastructure
- inherent demand for ICTs because everyone wants better communications and information

This underlying assumption is *Not necessary true*
Fixed-broadband subscriptions, by speed, early 2012

(The World in 2013: ICT Facts and Figures)
Fixed-broadband subscriptions, by speed, early 2012

(The World in 2013: ICT Facts and Figures)
# Economic Impacts of ICT

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<tr>
<th>Author</th>
<th>Study</th>
<th>Employment Effects</th>
<th>GDP Effects</th>
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<td>Crandall and Singer (2010)</td>
<td>Forecast of economic impact of U.S. broadband investment 2010-2015</td>
<td>Expect total investment of xpe $182.5B ($30.4B average per year) to result in 509,546 jobs (16.8 multiplier, or cost per job created of $</td>
<td>GDP multiplier of 2.97</td>
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<td>Eisenach, Singer et al (2009)</td>
<td>US BB tax incentives for investment in BB investigated</td>
<td>Employment multiplier per $Million CAPEX 14.7-19.7</td>
<td>GDP multiplier per $ of incremental CAPEX infra is 2.9-3.1</td>
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(eMisr 2011)
## Economic Impacts of ICT

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<td>Fornefeld et al (2008)</td>
<td>EU27 study of BB economic impact due to adoption by businesses 2004-2006. Forecasts EU27 BB plans impacts on GDP and jobs.</td>
<td>BB added 105k net jobs, with 1,319 lost due to displacement and 1,424 added due to new activity growth</td>
<td>BB added 84B Euros net to EU27 GVA in 2006, or 0.71% growth.</td>
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<td>Katz, Vaterlaus et al. (2009)</td>
<td>German National BB strategy impact from 2010-2020; basic and ultra BB plan for total investment of 35.9B Euros</td>
<td>Type II multiplier 19.95, Externality mult 15.75, total 35.70 (mult converted to $ per million CAPEX)</td>
<td>Type II multiplier 0.93, Externality mult 3.83, for total of 4.76 (mult converted to $)</td>
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Demand Stimulation Critical Success Factors

- A primary constraint on demand might be lack of technology awareness and a life context that makes ICTs useful, particularly in small rural communities or for socially isolated persons.

- Ease-of-use is a dominant factor in initial adoption of ICT, however usefulness is the crucial aspect for sustainability of adoption.

(Adams, Nelson, & Todd, 1992)
Perceptions about ease-of-use and usefulness, the “task-technology fit,” is critical for ICT use

In his seminal work, Diffusion of Innovations, Rogers (1995) combines 50 years of diffusion research → set of general principles that explain how a new idea or innovation propagates in a social system

(Cooper and Zmud, 1990)
Demand Stimulation Critical Success Factors

- The focus of the theory is not only on awareness and knowledge but also on attitude change and the decision-making process that lead to the innovation practice or innovation adoption.

(Rogers and Singhal 1996)
Demand Driven Standardization

- Standardization has a great impact on the sustainability of ICT industries,
- Addressing the real needs of developing economies is crucial; to achieve a global sustainability.
- Attempt to develop standards that are driven by the true needs of developing economies since the latter form a major portion of the worldwide consumption on newly standardized technologies.
Multi-tiered Strategy for effective Standardization Activities Participation

(Ramy Ahmed, innovation-i-0041, 2012)
Role of Innovation

- Effective mechanism to bridge the standardization gap
- Stimulate demand for ICT applications and services for a maximum global ICT market sustainability and development
Role of Innovation

“In terms of policy, it is a well-established result that market economies normally do not generate a socially optimal volume of knowledge creation, innovation and entrepreneurship”

However, there is no consensus concerning what institutional frameworks and policy measures that might generate such a social optimum given the imperfections in both the economic and the political markets.

(Braunerhjelm, 2010)
Role of Innovation

- This has not stopped policy-makers from launching a large number of institutional changes and policy measures to stimulate knowledge creation, innovation and entrepreneurship.

- Nevertheless, the number of carefully carried through policy evaluations is limited, → there is knowledge gap regarding which policies are effective and justify its costs.

- This is one major role the ITU-T could actually do in reference to Res. 44 WTSA-12
Conclusions and Recommendations

- Developing economies suffer from major problems beside the lack of connectivity
- Radical Pulling Strategy is needed instead of the traditional Push Strategy
Conclusions and Recommendations

- Standardizing demand stimulating technologies is the key + the Critical Success Standardization Activities (CSSA)

Examples include:
- DRM and Watermarking technologies
- Machine Learning
- e-Money Architecture
- e-Health Enablers
- e-Agriculture
- Cognitive Radio
Conclusions and Recommendations

- Provide a window for introducing innovations from developing countries
- FG on Innovation: A perfect tool which lacks support
- Res. 44 WTSA-12: Establishment of a specialized panel for stimulating ICT innovations, to enhance global collaborative innovation and to identify and support innovations from developing countries
Res. 44 WTSA-12 instructs TSB Director: to carry out the necessary studies on the role of innovation management and innovation stimulation programmes on bridging the standardization gap between the developed and developing countries.
References


Questions

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