



Florian Kohlbacher

German Institute for Japanese Studies (DIJ), Tokyo

Chang Chieh Hang

*Division of Engineering & Technology Management,
National University of Singapore*

Disruptive Innovations in a New Market Reality: Evidence from the Greying Market

The R&D Management Conference 2009
Vienna, 21-24 June 2009

Demographic Change



- Demographic change as a global phenomenon
 - Population aging
 - Population shrinking (vs. population growth)

- Demographic change as a business challenge and opportunity (Drucker, 2002; Dychtwald, 2000; Kohlbacher & Herstatt, 2008; Magnus, 2009)
 - Aging workforce
 - Shrinking customer base
 - Shift in market segments
 - Silver Business: new products, technologies etc.

- Demographics as one source of innovation opportunities (Drucker, 1985)

Ageing and Innovation



- Biological, psychological and social ageing
- Change in abilities
- Change in needs and wants
- Change in information processing capabilities
- *products and services need to be adapted or newly developed to respond to changing needs and demands*
- Literature on demographic change and innovation management/NPD hardly existent, but hints can be gained e.g. from
 - Gerotechnology
 - Universal/ transgenerational/ inclusive design

(cf. e.g. Bengtson et al., 2009; Burdick & Kwon, 2004; Moschis, 1996; Pirkl, 1994)

Disruptive Technologies and Innovations



- The innovator's dilemma and solution (Christensen, 1997; Christensen & Bower, 1996; Christensen, 2006)
- Various critiques and amendments (e.g. IEEE Trans EM, 2002; JPIM, 2006, Adner, 2002; Hüsig, Hipp & Dowling, 2005; Utterback & Acee, 2005)
- While the literature has addressed many aspects of disruptive innovation from business model innovation and organizational management perspectives, **discussions of the R&D processes behind disruptive innovations and technologies and their purposeful creations are still scarce** (cf. e.g. Yu & Hang, 2008).
- Some attention has recently been paid to **the front-end question of technology creation and the area of purposeful R&D to create disruptive technologies** and then consciously match them with potential markets in order to accelerate the pace of business growth through disruptive innovations (Hang & Chai, 2007; Hang et al., 2007)

Types of Disruptions



- 1) ***Low-end disruption***: there are customers at the low end of the market who would be happy to purchase a product with **less (but good enough) performance** if they could get it at a **lower price**.

→ *Older consumers and workers are often overburdened by complex products and too difficult to use technology.*

Research Proposition



Proposition I:

The greying market is an excellent field of application for low-end disruptions as elderly customers will increasingly demand low-performance – easy-and-safe-to-use – and low-price products and services.

Types of Disruptions



- **2) *New-market disruption***: there are customers who **had not had the money, time etc.** to use/consume certain products and services.
 - *Products and services for the greying market can help potential customers get a job done in a simple, convenient and/or affordable way.*
 - *Besides, changing conditions in people's life and health give birth to new, unprecedented needs and wants.*

Research Propositions



Proposition II:

The greying market is an excellent field of application for new-market disruptions as elderly customers will increasingly demand new products and services to get jobs done that they have always been trying to get done – but have not yet been able to do so in a simple, convenient and/or affordable way.

Proposition III:

The greying market is an excellent field of application for new-market disruptions as elderly customers will increasingly demand new products and services they had not demanded or had not been able to demand before.

Types of Disruptions



- **3) *Hybrid disruption***: most disruptive innovations are hybrids, combining new-market and low-end approaches; they **target both overshot customers** as well as **nonconsumption**
- *Some customers in the greying market are looking for easy-to-use, good enough performance. Others – who are financially not so well off due to a lack of savings and small pensions for example – are looking for cheaper deals (with good enough performance) .*

Research Propositions



Proposition IV:

The greying market is an excellent field of application for combinations of low-end and new-market disruptions (hybrid disruptions) as elderly customers will increasingly demand new products and services to get jobs done that they have always been trying to get done – but have not yet been able to do so in a simple, convenient and/or affordable way.

Proposition V:

The greying market is an excellent field of application for combinations of low-end and new-market disruptions (hybrid disruptions) as elderly customers will increasingly demand new products and services they had not demanded or had not been able to demand before.

Disruptive Innovations and the Greying Market

Case Studies (selection)

Easy-to-use Products

DoCoMo Raku-Raku Phone



- Developed by Fujitsu upon request of NTT DoCoMo
- universal design
- Easy-to-use (raku-raku = easy-easy)
- Not too many functions/ less complex functions
- But: new optional functions such as pedometer, GPS, digital TV e.g., depending on model
- Big screen (big fonts), big buttons
- Various models (SIMPLE → PREMIUM)



→ >15 million units sold since 2001

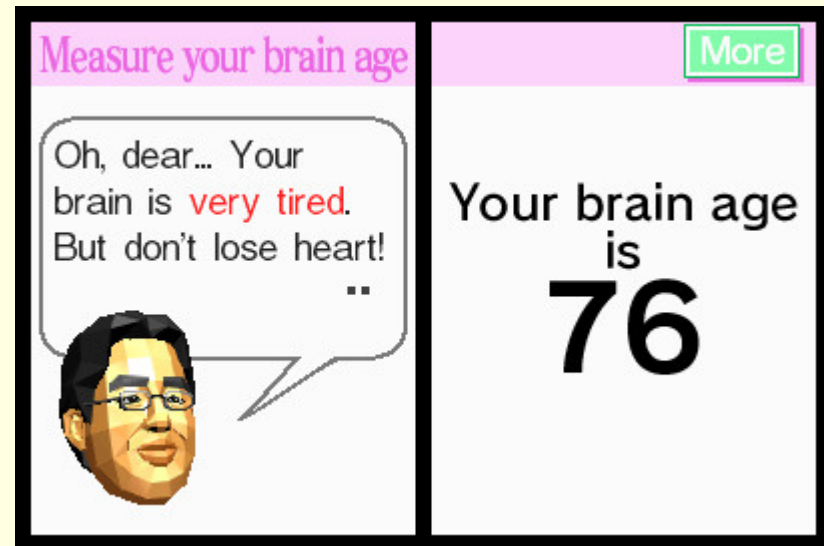
→ 5th release 2008



Transgenerational Solutions: Nintendo Wii, Nintendo DS



- Ageless/age-neutral product, for the whole family
- Connects and integrates the whole family
- Brain-training and exercise games
- Intuitive usage and more fun to play (together)
- Broadening of the target group/market



Therapeutic Robot Paro



- developed at the National Institute of Advanced Industrial Science and Technology in Japan
- mental commitment robot
- modelled after a baby harp seal → animal therapy
- Research indicates that Paro has positive effects – psychologically, physiologically and socially – on elderly people in nursing homes, especially those affected by dementia (Wada & Shibata, 2007; Wada et al., 2008).
- selling successfully in Japan as well as other countries
- In comparison with art therapy, music therapy and animal therapy and learning therapy as well as pharmaceutical treatment robot therapy using Paro is safe, convenient, and does not require special skills, places, or other tools (Wada & Shibata, 2007; Wada et al., 2008).



Case Comparison



Product	Type of disruption	Targeted performance of the product	Targeted customers or market application (competes against...)
Raku-raku phone	Hybrid (low-end and new-market)	Fewer complex functions, but better performance in simplicity, convenience and usability	Overshot customers and nonconsumption
Nintendo Wii	Hybrid (focus on new-market)	Less powerful processor and graphics performance, but better performance in usability, intuitiveness, feeling/fun and easier to play for beginners/non-hardcore gamers	Focus on nonconsumption
Paro	Hybrid (focus on new-market)	Cannot replace a real animal on all dimensions, but good enough functions for the purpose of therapy, plus increased safety, no sanitary issues	Focus on nonconsumption

Research Propositions



Proposition VI:

In practice, most of the disruptive innovations for the greying market will be hybrids with a focus on new-market applications as they target mostly nonconsumption.

Proposition VII:

Transgenerational and ageless products and services (solutions) are an excellent field of application for disruptive innovations as elderly customers will increasingly be interested in consuming the same products and services as other age groups and will increasingly demand to consume them jointly with other age groups.

Conclusions



- Changes in the external reality (here: demographics) of the firm can create new opportunities for the development of disruptive innovations
- The greying market is an excellent field of application for disruptive innovations
- Disruptive innovations for the greying market are mostly hybrids of new-market and low-end; they target non-consumption and often have a focus on new-market
- Disruptive innovations for the greying market can benefit companies and customers alike
- R&D has to grasp and react to this new market reality by adapting its processes and activities in order to leverage the potential of disruptive innovations and technologies for ageing societies

Thank you!

ご清聴ありがとうございました。

谢谢

