The Shape of Innovation
Creating & Leveraging a NPD Ecosystem

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Frost & Sullivan Medical Devices 2011
Key Take-Aways

Toolkit for Innovation

Talent is Overrated

What Really Separates World-Class Performers from Everybody Else

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Read by David Drummond
**Key Take-Aways**

**Toolkit for Innovation**

- Tools help avoid operating in the panic zone
- Mastery of the tools expand your comfort zone
Key Take-Aways

• Case history of new to world therapy device from initial concept to market launch
• Tools to establish clear priorities across all levels of the organization through use of proof point driven innovation
• Examples of market research techniques, user evaluation testing and regulatory challenges
Overview

Accelerating innovation in sleep

- Background – Philips Home Healthcare Solutions and Insomnia
- Final market launch preparations – Prioritization and Validation
- Results – Conclusions
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Philips Home Healthcare solutions
Meaningful Innovations for health & well being at home

• Sleep and Respiratory care
• Independent living for seniors
• Home automated external defibrillator (AED)
• Remote cardiac monitoring
• Remote patient monitoring/Telehealth
Philips Home Healthcare
Accelerating go to market of meaningful innovations

Building blocks for fast and efficient innovation
• End user insights
• Sensible and simple idea
• Pragmatic innovation approach
  – New product concept development
  – Practical issue solving
  – Efficient process
    • Combining end user, Philips and partner insights

Innovation by combination!
End user insights
Insomnia affects people’s health & well being

Sleep related Insomnia Symptoms
30 - 48%

Insomnia Symptoms + Daytime Consequences
9 - 18%

Insomnia Diagnosis (DSM-IV)
4 - 12%

End user insights
Insomnia symptoms increasing

- Sleep-related insomnia problems significantly more prevalent in the last decade\textsuperscript{2}
  - Prevalence of symptoms trending up
  - Stress, awareness, technology “always on”

End user insights

Insomnia pharma volume growing

- Treatment dominated by pharmaceuticals
- But 50% would prefer a non-pill solution
Sensible and simple idea
Motion and Sleep – How we got started

• Rocking sensation could facilitate sleep onset
  – Baby swings, rocking chairs, trains/cars/boats…
  – 1990 paper on swinging bed showed decreased SOL

  – Anecdotal literature on motion induced soporific effect

• Electrical stimulation of the vestibular nerve can create motion sensation
  – Known for many years


http://www.psych.usyd.edu.au/staff/hamish/
Pragmatic innovation approach

New concept simulates motion and stimulates sleep

• SleepWave induces vestibular nerve activation (VNA)*

• Electrical VNA induces rocking/swaying sensation to help sleep
  – Invented 1999 at Respironics
  – Issued patents in 2001 and 2004
  – Early sleep onset tests showed promise for insomnia
  – Iterative process to refine combined engineering and clinical approach to a working solution

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Moving to market

- Mid 2008
- Clinical trial has validated product’s clinical efficacy
- Need for significant investment
  - in additional clinical
  - and market launch
- Used SmartOrg process
  - create common language with executive team on priorities
What to prioritize?
Applying SmartOrg

• Getting through the noise
  – Evaluate
  – Develop “proof points”
  – Take to “exploitable business asset”
  – Prioritize how to lower risk
  – Feed into a portfolio view

• Two day deep dive session
  – Multi-disciplinary team of experts
  – Internal and external
Taking a deep dive
Applying SmartOrg
Proof Point Example - Patient Acceptance
After use of product

- Proof Point Criteria
  - Give to 75 patients in home for 1 month
  - Believability - Top 2 boxes - 40% plus
  - Purchase intent @ $500. – 50% of the people believing

- Enough detail in each proof point to take specific action
- The “discussion” is a lot of the value – arriving at what matters to multiple, expert stake holders

**Success**
- Non pill considered safe
- Desperate patients

**Fail**
- Cost
- Side effects
- Is the patient treatable
Product Use Test
Fits neither the pharmacologic nor non-pharmacologic mold

• Customers will struggle to evaluate new products
  – Even after being educated
  – Until they experience them!
Use Test Methodology

- Create customer touch points throughout the 30 day use period
- Participants
  - from the online survey,
  - seen the VirtuSom product concept and were interested in trying
- Allows correlating results back to larger qual and quant segmentation work
Identifying the Main Problems
Beyond the Concept

Use Test Conclusions

- Learning on multiple areas of segmenting and messaging for a successful product
- Main cause of dissatisfaction drives R&D investment prioritization
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Innovation by combination improved tingling, adhesion, user comfort

- Development of clear proof points aligned management to priorities
  - Use Test resulted in
    - Confidence in product launch
    - Clear need for product improvement
  - FDA requires additional investment in clinical
    - Additional market confidence required

- Focus on key dis-satisfier gave clear goal to engineering to drive fast prototyping and release of a validated solution

- Status
  - Australia marketing ongoing
  - Engineering improvements - positive
  - Major clinical trial ongoing for FDA