Design innovation: A tool for value-adding to the Papua New Guinea balsa wood industry

Nathan Kotlarewski, Swinburne University of Technology
Dr Blair Kuys, Swinburne University of Technology
Dr Christine Thong, Swinburne University of Technology
Design innovation: a tool for value-adding to the Papua New Guinea balsa wood Industry
Contents

- Balsa background
- ACIAR’s balsa project
- The problem with the PNG balsa industry
- How does design innovation add value
- The Swinburne innovation cup (case study)
- Summary
Balsa background
ACIAR’s balsa project

BALSAPROJECT PNG

Australian Government
Australian Centre for International Agricultural Research

BETTER RETURNS FROM BALSAA
2009 Identification of researchable issues underpinning a vibrant balsa wood industry in PNG

- Introduction of competitor materials
- Lack of demand
- Importance of innovation, research and development
2011 improving the PNG balsa value chain to enhance smallholder livelihoods
   - Scenario planning workshop

   “if there is no application for balsa, there is no point continuing to grow it”
The problem with the PNG balsa industry

Before GFC consumption %

China 43%
India 32%
Other 25%
How does design innovation add value

Research-led industrial design practice
- Research to find knowledge/market gaps
- Design to develop innovative solutions that embeds new knowledge in products that are needed
Design innovation
- Used to improve product competitiveness
- Seeks to optimise consumer satisfaction
- Increases company profitability
- Communicates value
Design innovation in forestry
- Resource push and market pull
- Life cycle
The Swinburne Innovation cup (case study)

Research competition
- Promotes innovation development and entrepreneurial skills
- Focus on design innovation that aligns a resource push with a market pull
- Present the process of design innovation proposal
Australian construction industry
- High rise apartments (41,719 in 2013)
- Interior wall and ceiling linings (market)

What is the market pull?
- Sustainability
- Weight
- Cost
- Efficiencies
Summary

Design innovation by research-led industrial design practice
  - Research knowledge gap
  - New knowledge generation
  - Identify market opportunity
  - Align new knowledge with market gap
  - Design innovation for product differentiation