

Co-creation supporting collaboration across cultural contexts: Recommendations for improving in flight packaging for ageing populations

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Increasingly universities are adopting a collaborative approach to ensure research outcomes have industry-relevant impact. This collaboration has known challenges given the complexity of the process which requires successful negotiation across the needs of various stakeholders, disciplinary knowledges and cultural contexts. A co-creation approach in collaborative research can assist in navigating these challenges by empowering all stakeholders including industry, the academy and the community. This paper presents a case study of an industry engaged research project that employed this approach. Partnering with a northern European international airline and universities from Australia and Singapore, the project investigated opportunities for innovation around the ageing population's user experience with in-flight packaging. Applying case study method, data collected included in-flight observations, expert interviews, co-creation workshops and prototyping. Challenges as well as opportunities are identified around how the co-creation approach supported the industry relevant outcomes of the project. The findings suggest that co-creation supports better outcomes for collaboration across the complexity of industry engaged cross-cultural research projects.

Key words: Industry-engaged research, co-creation, cross-cultural, ageing populations, in-flight user experience, packaging

Increasingly universities are adopting a collaborative approach to ensure research outcomes have industry-relevant impact. The Australian Government has revised how research is measured by adding a greater emphasis on research impact as well as quality. The National Innovation & Science Agenda initiative supports industry engaged research that benefits the Australian economy and society. The new measures are intended to promote innovation and support commercially viable outputs from publicly funded research. (Australian Research Council, 2016). Given the applied, real world context of industry engaged research, there are unique challenges inherent to the process when collaborating with industry and the academy. These challenges include navigating the complexity of the research parameters and in addition requires successful negotiation across the needs of various stakeholders, disciplinary knowledges and in the case of this project, different cultural contexts.

Literature Review

A co-creation approach in collaborative research can assist in navigating these challenges by empowering all stakeholders including industry, the academy and the community. The notion of co-creation can mean different things to different people and thus is not well defined. Nevertheless, it is accepted the term refers to the process of collective creativity (Sanders & Stappers, 2008). While successful co-creation can be challenging, its collective method supports negotiation across complexity and various stakeholder points of view (Coddington et al., 2016). More importantly for industry-engaged research, it supports the articulation of value amongst the various stakeholders (Degnegaard, 2014).

Research Methods

This poster presents a case study of an industry engaged research project that employed a co-creation approach. The project was undertaken by the Design Factory Melbourne based at Swinburne University of Technology in partnership with a northern European international airline. In addition, research was carried out in collaboration with the Live Well Collaborative Singapore and Nanyang Polytechnic, School of Design. The project investigated opportunities for innovation around the ageing population's user experience with in-flight packaging.

The project challenge and context

While the airline is based in Northern Europe, a key growth area was identified with almost half of the airline's overall passenger traffic going to Asia. Singapore is a major hub for these flight connections. The research challenge was to investigate the user experience of in-flight packaging touch points for the 50-plus age Asian consumer. During the in-flight experience a user interacts with a variety of packaging. From enjoying a drink and a meal to the purchase of gifts, packaging is a vital touchpoint in the delivery of an airline service. See Figure 1 for an example of one of the personas developed to represent the target market. The 50-plus consumer market is growing and has varying unmet needs around accessing and using in flight packaging.

Figure 1, Persona

Business Frequent Flyer



Name: Lee Toyoshima
Age: 50
Occupation: Investment Banker
Ethnicity: Japanese
Hometown: Osaka
Salary: 200K+
Marital status: Married
Reason for travel: Business

Lee is a 50 year old business man, living and working in Osaka. Lee lives in a large inner-city apartment with his wife Suni and their two children, Yuki (13) and Kato (17).

Because of the long hours he works, Lee doesn't get a lot of free time to relax so when he does he likes to spend it with his family.

An inclusive design approach ensures all users are afforded frustration-free packaging (Keates & Clarkson, 2004; Arthritis Australia, 2015). While most travel packaging may be designed for utilitarian purposes, traditionally packaging within Asia is valued for aesthetics as well as functionality. The role of culture for both Asia and the Nordic regions is important consideration in this design challenge. The sustainable impact of airline packaging is also a key consideration when considering the triple bottom line. “Airline passengers generated 5.2m tonnes of waste in 2016, most of which went to landfill or incineration, the International Air Transport Association (IATA) estimates. That’s the weight of about 2.6m cars. And it’s a figure set to double over the next 15 years” (Boyd, 2017, para 2). Wasteful packaging is not just a problem for the airline industry’s carbon footprint but also very expensive to manage.

The research

The team undertook research to clarify the context and use of packaging within the flying experience and created a series of concepts and recommendations for packaging improvements in the future. Applying case study method, data collected included in-flight observations, expert interviews, co-creation workshops, design ideation and prototyping.

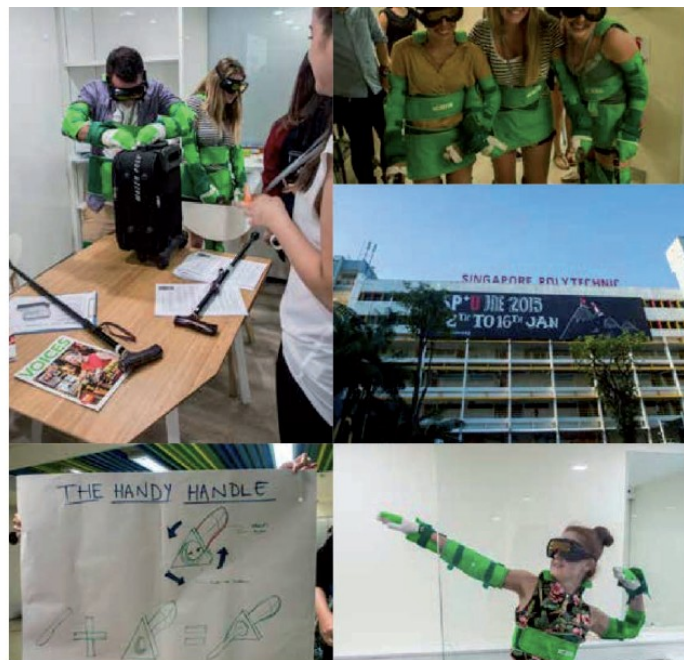
First in-flight observation was undertaken by 12 Australian design students on their flight from Melbourne to Singapore. Observations were recorded by note taking and photographs when appropriate. Figure 2 demonstrates the POEMS framework used for data collection.

Figure 2: POEMS framework

P	<ul style="list-style-type: none"> • Passengers of different ages, demographics, circumstances etc. • Flight attendants • Pilots
O	<ul style="list-style-type: none"> • Seats • Trays • Baggage • Meals/drinks • Entertainment • Safety equipment • Lights • Rubbish • Trolleys • Pillows/blankets
E	<ul style="list-style-type: none"> • Sterile environment • Artificial air • Cramped and limited space • Difficult to get comfortable • Can be quite boring
M	<ul style="list-style-type: none"> • Safety information and airline signage • Books/magazines • Menus/airline collateral • iPad/laptop/in-flight entertainment • Flight information/announcements
S	<ul style="list-style-type: none"> • Transportation • Meals and beverages • Entertainment • In-flight shopping • Comfort and grooming

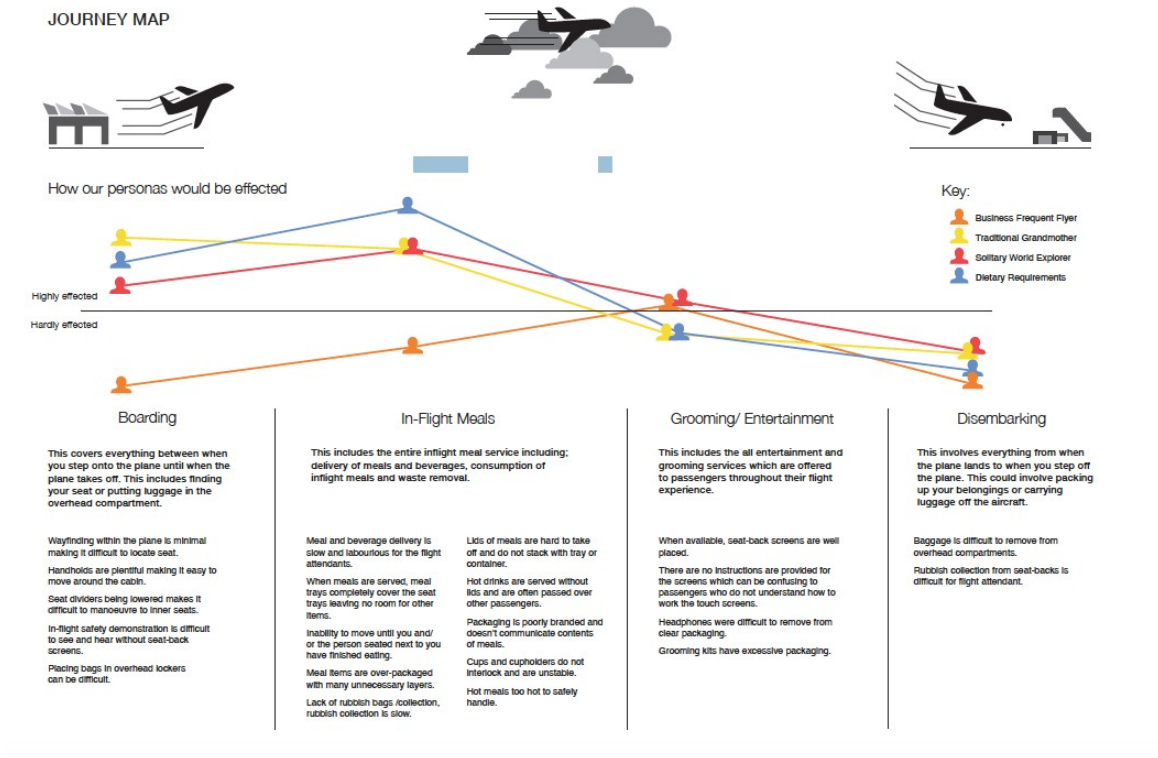
Second, expert interviews were undertaken with 2 staff members at the Live Well Collaborative around their knowledge of designing for ageing populations in Asia and in particular their work with air travel experience design. Third, co-creation workshops provided an opportunity to ideate around travel packaging for the 50-plus consumer group. Workshops took place at the Live Well Collaborative and at Nanyang Polytechnic School of Design, involving staff and students from the respective schools. An empathy exercise was conducted, whereby the team members had the opportunity to wear the ‘Silver Suit’, a suit which mimics the physical impairments that may occur in the 50+ age group. This was a useful test which highlighted the everyday mobility restrictions of this age group. Figures 3 refers to activities undertaken during the workshops including the “Silver Suit” simulation for testing out ideas.

Figure 3: Silver Suit simulation and co-creation workshop activities



Finally, prototypes were generated in the co-creation workshops and these were expanded and refined upon return to the Design Factory Melbourne. The data was then analysed and synthesized into a series of personas, user journey maps and opportunity identification insights (see Figure 4).

Figure 4: Journey Map



Discussion

Findings and recommendations

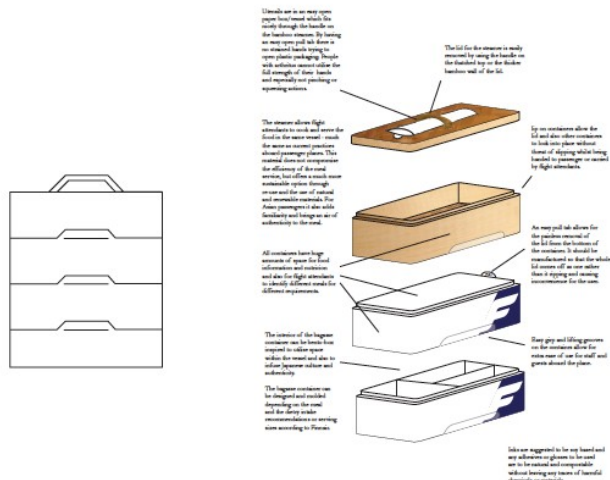
The use of personas and journey maps assisted the team's investigation with problems identified including constrained space in-flight, lack of usability, packaging waste and absence of clear labelling. Recommendations for the airline's in-flight meal packaging include being stackable and lightweight; renewable and compostable materials; ergonomic and accessible; clear labelling in multiple languages.

The outcome: sustainable, accessible and legible

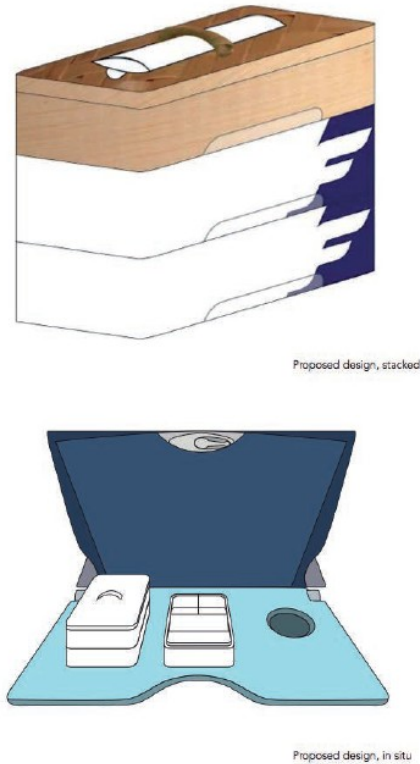
The prototype concept takes inspiration from the Singaporean "tingkat", a stackable meal compartment system that is more commonly used by the older generation in the region. Referencing a familiar meal system will resonate with the 50+ Asian target market, balancing an Asian as well as Nordic design aesthetic that marries well with the airline brand (See Figure 6).

Figure 6: Design Concept proposed

design concepts



The "tingkat" or mangkut tingkat in Malay is a stackable meal system or lunchbox common in Singapore, Malaysia, Indonesia and India.



The proposed design is sustainable, accessible and features clear, legible labelling. First, the design is sustainable utilizing a lightweight, stackable design made from a mix of renewable, compostable and recyclable materials lightening the airline's carbon footprint. Second, the design is accessible for the 50+ consumer. It manages the space limitations of in-flight meal tray tables. The stackable system allows the consumer to easily access different parts of the meal and also provides space to store the excess packaging or food left behind. Hot and cold compartments house the various meal options allowing flight attendants to serve the meals in courses or all at once, stacked one upon the other as needed. Third, legible labelling ensures clear and comprehensive product information on the packaging, including the use of infographics and different languages, which will ensure the package and meal contents are easy to identify and use. A more accessible and sustainable in-flight meal packaging system solution will support the airline in expanding its Asian market while better servicing the needs of the growing 50+ consumer market.

Conclusion

In conclusion, challenges as well as opportunities emerged around how the co-creation approach supported the industry relevant outcomes of the project. Challenges included negotiating the uncertainty of working across cultural contexts with students collaborating from both Australia and Singapore. In addition, building a shared understanding of the project with the various stakeholders was at times difficult. Opportunities of the co-creation approach included bringing together the various disciplinary knowledges and various perspectives of the stakeholders from users to designers to industry experts in the area around the challenges of ageing populations and flight experience design. These findings suggest that co-creation supports better outcomes for collaboration across the complexity of cross-cultural research projects.

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Emily Wright lectures with the Design Factory Melbourne and the Communication Design Department at Swinburne. Her research focuses on human centered design, packaging design and design innovation. Her design practice career spans 20 years with work in publishing, branding, packaging and web design in the US, the UK, Mexico and Australia. Emily holds a Bachelor of Science from the University of Cincinnati and a Masters as well as PhD from Swinburne University.

Acknowledgements

The author thanks the following for their support as without it this project would not have been possible. For funding support, I thank the Australian Government, the New Colombo Plan and the industry partner airline. For resources, we thank the Design Factory Melbourne, Swinburne University of Technology, Live Well Collaborative Singapore and Nanyang Polytechnic. Finally, a big thank you to the staff, students and research participants who were so generous with their expertise and time.