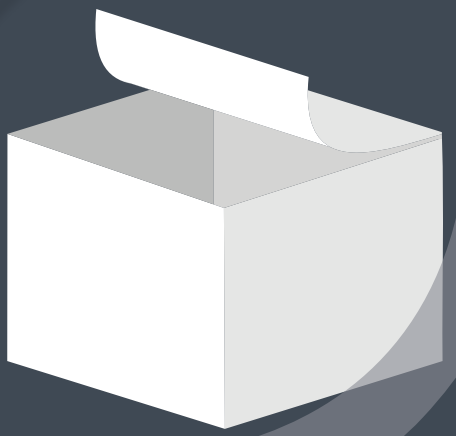

THE PACKAGING VALUE CYCLE:

A Framework for Evaluating Packaging Investments

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Iskoskuja 3 A 19
01600 Vantaa
Finland

www.ptr.fi

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Executive Summary

The Project

The Packaging Value Cycle is a framework for evaluating packaging investments. It is comprised of two elements: first, a visual infographic provides an overview of the functions of packaging and the stakeholders involved in its creation; second, a list of the functional attributes of packaging is accompanied by methods to quantify them. By providing a big picture overview of packaging and the packaging industry, the Packaging Value Cycle also promotes a common understanding amongst packaging industry stakeholders, who often have different perspectives and interests.

Stakeholders

The Packaging Value Cycle was created for the Association of Packaging Technology and Research, a Finnish research organization that creates research methods that can help the industry create better packages.

The authors are eight students of Aalto University's International Design Business Management Programme. The students come from varying backgrounds of design, business and engineering.

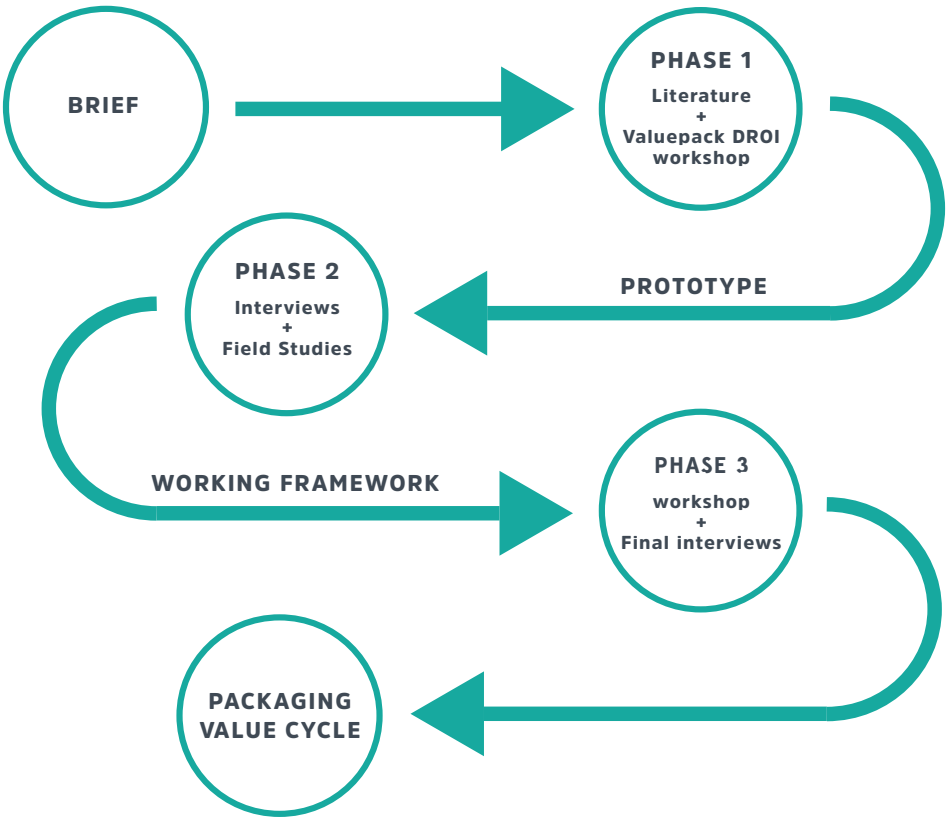
Authors:

Leo Josephy
Maria Kuusisto
Maria Helander
Vishnu Shreenath
Rikhard Hormia
Ida Jokela
Siddharth Jayaprakash
Yaping Chen

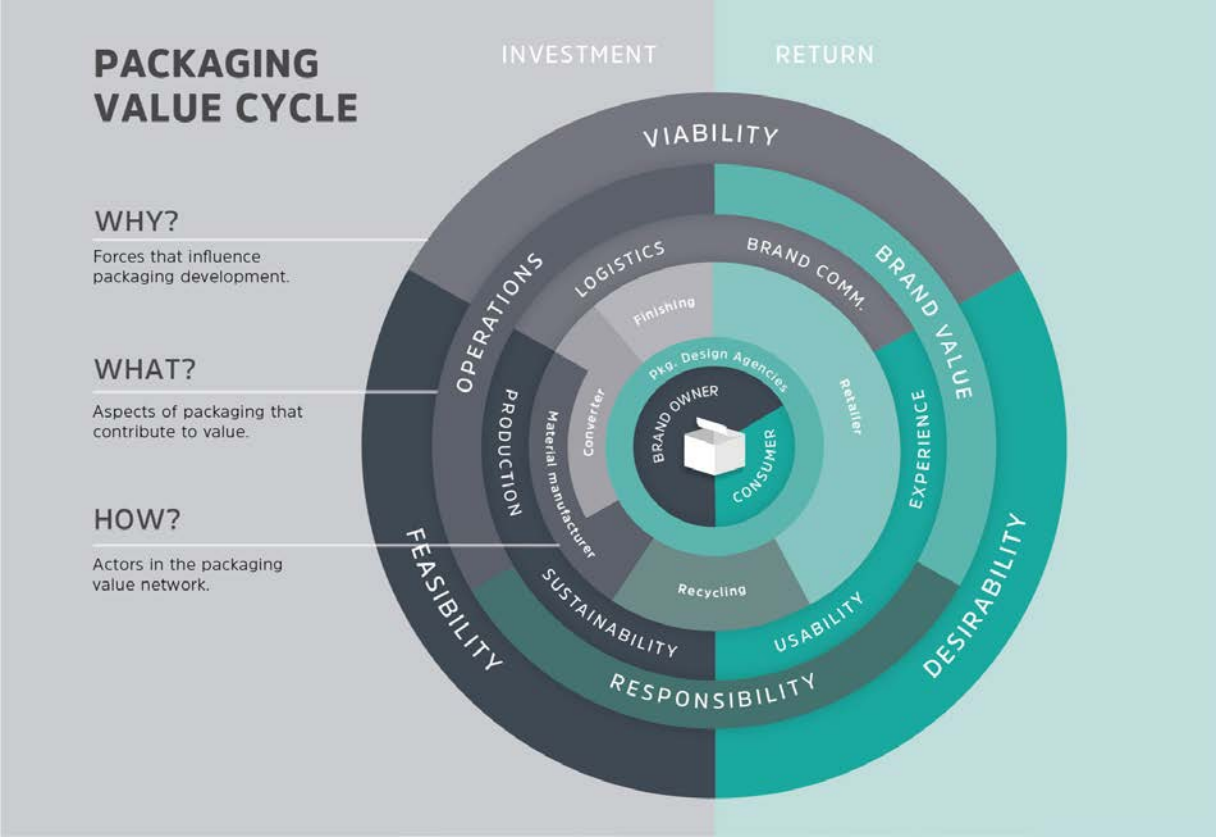
The authors were guided in their efforts by two supervisors, Markku Salimäki and Kirsi Polvinen, and received additional assistance from Mukundhan Kulur, a master's student writing his thesis on a related topic.

Process

The development process of the Packaging Value Cycle fell into three phases. Phase One saw the synthesis of a prototype framework as the result of a broad literature review and original research in the form of the Valuepack x DROI Workshop. A broad list of packaging attributes and quantifying metrics was also assembled from this research. The prototype framework was introduced to packaging professionals in Phase Two. Interviews were conducted in Finland, Japan, and the USA, and led to our first working framework. Phase Three saw the final testing of the framework and list of metrics in the form of the Packaging ROI workshop and several final interviews. The feedback given in this phase led to the final changes to our framework: the Packaging Value Cycle presented here.



Outcome



The Packaging Value Cycle contains three levels of logic. The outermost ring describes the design thinking impacts that packaging can have: *Viability*, *Feasibility* and *Desirability*. These impacts, or forces, describe Why packaging is important.

The next two rings in the framework describe the functional attributes of packaging. In other words, What does packaging do? These attributes exist at the meeting points of the design thinking forces. Business *viability* and *technical feasibility* meet at *Operations*, for example, which is further expanded into two categories of packaging attributes: *Production Efficiency* and *Logistic Efficiency*. The logic of the framework is such that each outer ring informs the inner rings within it.

The innermost rings describe how packaging is made and used: its stakeholders and their activities.

Thus drawing a straight line from the center of the Packaging Value Cycle to the outside will describe the stakeholders involved with packaging, what they are considering, and why it matters. The result is that different perspectives are included in one framework that can be understood by all. We can see that consumers, for example, are interested in usability and experience, but not logistics or production. However, a package must fulfill both functions in order to be successful. By providing a method of understanding packaging from all perspectives, a holistic tool for evaluating packaging investments is created.

Packaging attributes on the left side of the framework are concerned with production. Attributes on the right side address packaging consumption. As such we can see that increasing packaging investments can lead to improved customer experiences and increases in brand value. As such, the framework provides a way to evaluate packaging investments and their potential returns

To improve the quality of these evaluations, methods and metrics for quantifying packaging attributes are also provided.

		Attribute:	Metrics:
FEASIBILITY	Feasibility in production	Production cost & efficiency	Runnability | Productivity | Fit in current production lines | Material wastage | Manufacturing line investment and longevity
		Packaging cost & efficiency	Packing | Package-product fit | Fit in current packing lines
		Scalability	Time to produce | Production volume
		Material properties	Material cost | Durability & quality | Printability
	Sustainability	Material properties	Eco Labels | Ethical and renewable sourcing | Amount of recycled | Post-consumer content | Reduce amount of hazardous substances
		Lifecycle impacts	Recycling costs | Energy use | Recoverable, recyclable or reusable | Limit size and weight

		Attribute:	Metrics:
VIABILITY	Logistic efficiency	Shipping efficiency	Shipping cost | Package weight | Pallet optimization | Package size
		Product protection	Package Strength | Number of damaged packages
		Ease of handling	Clear markings | Ergonomics
	Brand communication	Brand differentiation	AB-testing | Eye tracking | Market share
		Targeting	Market analysis | Target group studies | Access to new markets
		Quality brand message content	Consumer surveys | Willingness to pay

		Attribute:	Metrics:
DESIRABILITY	Experience	Perceived/Exceeded expectations	Package value toolkit | Eye tracking | User surveys & research | Rate of Sharing | Psycho-physiological measurements | Ethnographic studies
		Hedonic motivation	
		Cultural perception	
	Usability	Ease of use	Customer Service Requests | User Surveys + Research | Package value toolkit | Amount of packaging recycled
		Informative	
		Safe	
		Ergonomics	

1. Introduction

1.1 Our project

Package ROI is a project for the Association of Packaging Technology and Research* (later referred to as PTR). It is part of their larger Valuepack project, a multi stakeholder endeavour pairing university students, researchers and industry partners. The project is a joint collaboration with the International Design Business Management (IDBM) Programme, a teaching and research platform of Aalto University's three schools: the School of Business, the School of Technology and the School of Arts and Design. The aim of the programme is to educate global producers and leaders of innovation in new product, service and business development. (Aalto – IDBM, 2016)

PAKKAUSTUTKIMUS – PTR

Aalto University IDBM International Design Business Management

**In November 2016, IPR of the Valuepack project results were transferred to Package Testing & Research Ltd, which will continue to further develop the innovations created in PTR projects within the last 5 years. Package Testing & Research is also the publisher of this report.*

1.1.1 Scope and Objective

Valuepack was launched in 2014 and completed in late 2016. The project was born from lack of a comprehensive toolkit for companies to design and measure the real value of packaging with a holistic perspective (Pakkaustutkimus – PTR ry, 2016). The project hopes to enable Finnish companies to stand out in the global market with user-centered and high-value packaging.

Valuepack is divided into four research modules in order to create a comprehensive framework for understanding value creation in the multidisciplinary field of packaging: Package User Experience (PUX), Package Value Toolkit (PVT), Willingness to Pay (WTP), and Package ROI (Figure 1). The first three modules focus on consumer value and explore how packaging can create value for users by adopting a user-centered approach, how this value can be tested and finally turned into monetary value in terms of consumers' willingness to pay. Package ROI, the fourth module and the focus of this study, aims to clarify the link between consumer and business values and help evaluate the value of packaging investments for businesses.

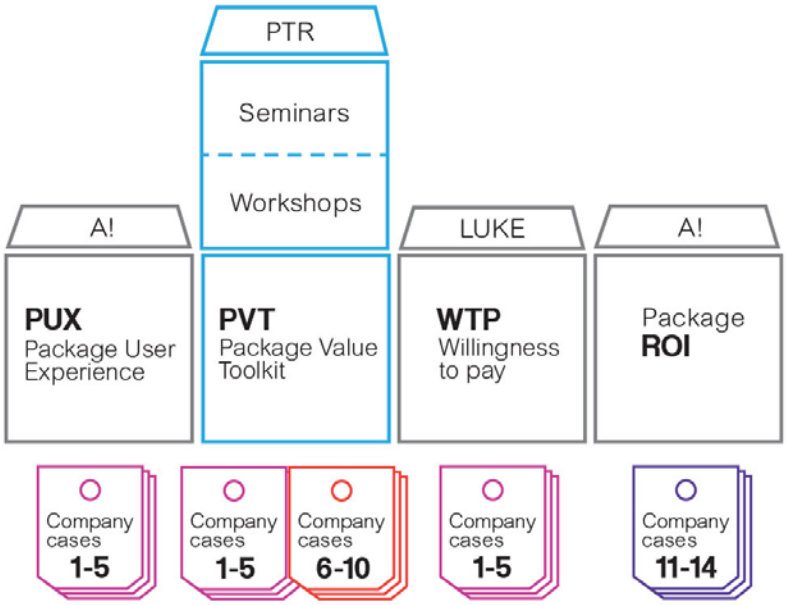


Figure 1.

Package ROI was further divided into two sub-projects that look at value creation from two different perspectives. The **PackIcon** sub-project took the perspective of new packaging product design and explored how new technical innovations in packaging could create value for businesses. **Packaging Real Business Value** explored packaging value in the context of new business design i.e. how innovative business models can drive packaging needs and innovation. Both of these approaches were supported by two accompanying case packages to enable empirical testing and validation of the results. In addition, a third perspective was introduced. Mukundhan Kulur has been writing his master's thesis from the perspective of new service development. He has been providing advice and suggestions during the course of the project and is considering to continue developing the outcome of this project as part of his thesis.

It quickly became apparent to us that a strict Package ROI calculation might be a misguided goal. Much of value created by packaging is incredibly difficult to quantify and before benefitting from such calculations the industry needed tools for more efficient communication and collaboration. Consequently, we broadened the scope of our project goals to include:

· Gaining an understanding of the different actors in the packaging value network and what affects their value creation processes

· Creating a tool that helps to understand how packaging can create value for businesses and how that value can be captured

· Fostering communication and a common understanding amongst packaging industry actors

The intended audience for the tool was initially meant to be middle management. The goal was to allow them to better assess which packaging projects to proceed with, to help them monitor those projects and lastly to allow them to communicate packaging development to company leadership as an investment rather than a cost. However, as the work progressed, we saw a need for a more holistic tool with a broader scope beyond a strict ROI calculation, and a broader audience that would include packaging designers amongst others. In a broader sense, we hope our final outcome that we call the Packaging Value Cycle will empower the packaging industry to approach and implement packaging innovations more creatively, and to better consider the consumer in the process.

1.1.2 Stakeholders

Clients

PTR's goal is to create research methods that can help the industry create better packages. Much of their research focuses on the qualitative customer perceptions of packaging. PTR's role throughout our project development has been vital and multifold. Both Satu Jokinen and Virpi Korhonen have played a fundamental role in providing essential information regarding the previous Valuepack projects, the packaging industry and packaging in general. They also helped make final decisions about the project and acted as a communication link between us and internal and external contacts involved. These contacts have included the other Valuepack research teams and members of the Valuepack executive group, the case companies, and other packaging industry experts. Their help has been invaluable and strong during the whole project, which we are very thankful.

Case companies

Stora Enso
Metsä Board
Finnish Corrugated
Board Association
Elopak
Epic Foods

The case companies included in this project have provided us four different packages which assisted us to better understand the problem statement and later test our development on different phases of the project. The results of these company studies will be excluded from this report due to Non-Disclosure Agreements. However, all the aforementioned companies will each receive an exclusive report on the results of the studies conducted for their case products.

Supervisors

Aalto University has supported our work through two assigned supervisors: Markku Salimäki and Kirsi Polvinen. They have given us advice on how to proceed, who to contact, how to work effectively as a team and how to communicate with the client. Rather than leading, they have been assistive and their help has been very beneficial.

1.1.3 Authors

We are the teams **PRBV** and **PackIcon**, eight Aalto University Master students with diverse backgrounds of varying cultures, disciplines and areas of expertise.

Yaping Chen
Business

Rikhard Hormia
Design

Ida Jokela
Business

Siddharth Jayaprakash
Tech

PRBV
Pack
Icon

Vishnu Shreenath
Tech

Maria Helander
Design

Maria Kuusisto
Business

Leo Josephy
Design+Business

1.1.4 Challenges

As the topic of our project was fairly broad and encompassed two different approaches, we had some trouble understanding exactly what was expected of us in the beginning. However, as the project progressed, our understanding matured and crystallized steadily, and we finally decided to combine the two approaches. Frequent meetings and seamless cooperation with PTR on top of Satu Jokinen's role as a mentor during the project was vital and eventually helped us to keep on the right track and ensured the quality of our work.

Another major challenge presented by the project related to the actual project goal and, specifically, the outcome. A tool helping to define the value of packaging needed to strike the right balance between quantifiable metrics and qualitative attributes of packaging that might be difficult to measure. In addition, it needed to serve and give insights to all the stakeholders in the packaging network. We are optimistic and strongly believe this was achieved in the best way possible.

1.2 Impact

Finland has a broad network of expertise in packaging both within the industry and academia (Järvi-Kääriäinen & Ollila, 2007:302). The packaging industry in Finland is characterized by big actors such as Stora Enso and Metsä Group, which together are the main producers of packaging raw materials such as paper, corrugated board, and cellulose. Thus, the emphasis of the packaging industry in Finland is on material supply and manufacturing. The main packaging materials produced in Finland are fiber-based materials such as paper, paperboard, and corrugated board (Järvi-Kääriäinen & Ollila, 2007:14). In 2013, the total value of packaging materials and packaging related machines and devices in Finland was estimated at € 3.3 billion and their production was estimated to create 5900 man-years of work (excluding packing, printing, retail, recycling, maintenance, logistics and research) (Säilä, 2015).

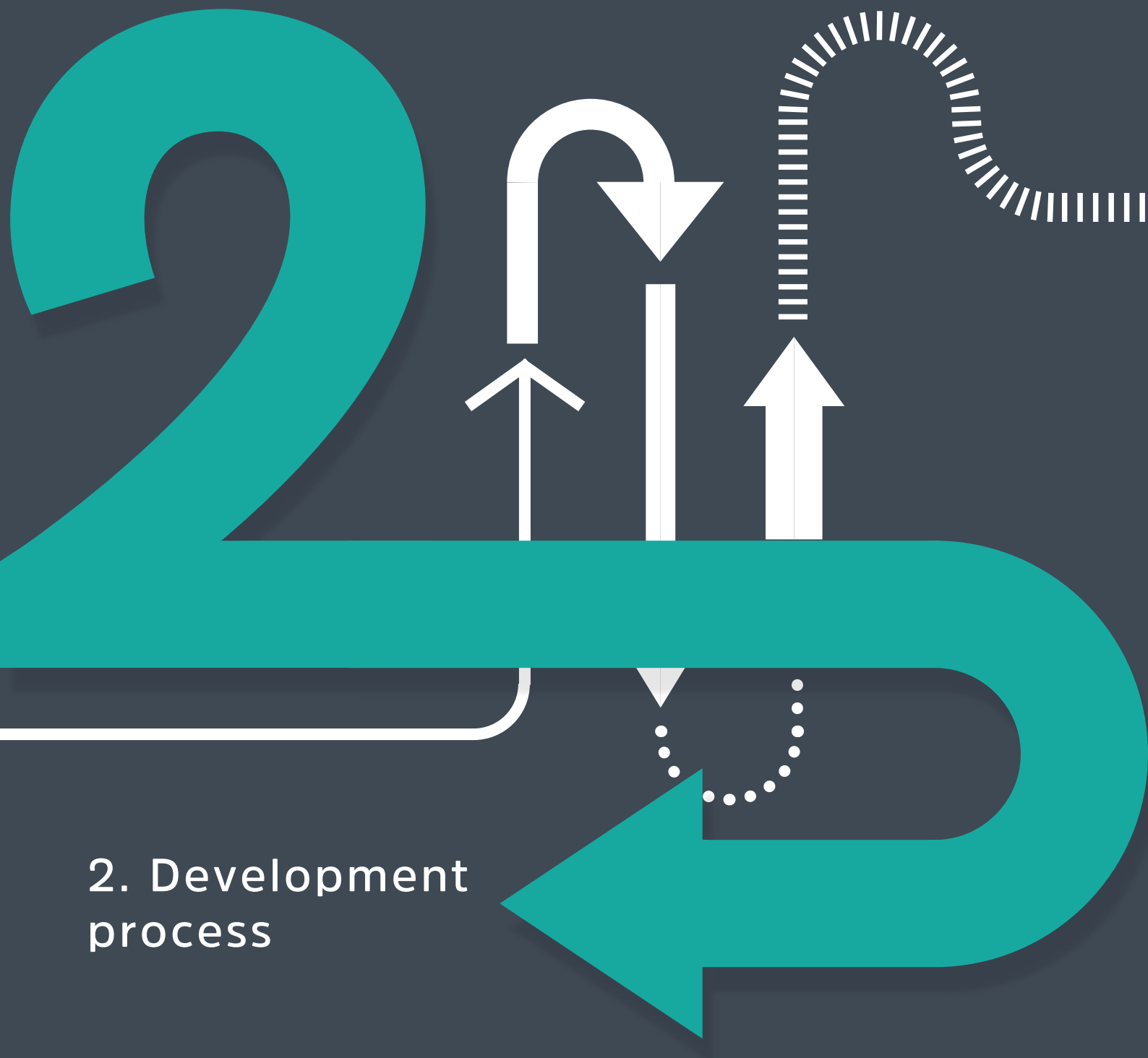
However, Finland is not fully taking advantage of its potential and extensive knowledge base within the packaging industry. As is common in the packaging industry, the value network in Finland consists of several actors who are not fully integrated; there is a lack of collaboration and holistic management throughout the process. Most packaging design processes are production and technology driven and thus technological feasibility usually sets the scope and direction for new packaging design processes. Savings and efficiency in production, logistics, and use of materials usually drive these processes. In general, the development process starts by defining the form and material of a package. Only later is an external partner - usually an advertising agency - hired to simply stick the graphics on a technology-driven solution. Consequently, material suppliers and packaging manufacturers have the main impact on packaging design and innovation in Finland. (Lehtonen & Uusitalo, 2011:19–28)

The need for a new packaging design is usually triggered by changes in technology, competitive environment or market trends. Systematic foresight studies on future consumer behavior are rare in Finland and new packaging design is usually merely responding to current circumstances and trends on the market. Market research is mostly applied at the end of a project to justify the visual concept of a package. Throughout the process, most of the decisions are made based on technological conditions and gut feelings about consumer preferences. Thus, little attention is given to innovation and insights arising from the consumer-end of the value network. (Lehtonen & Uusitalo, 2011:19–28)

Packaging design projects are usually run by marketing departments and decisions are made by top management who may not be in direct interaction with the actual development process. Therefore, decisions are usually made based on costs and secure profit estimates. Packaging is usually seen as a tool for advertising rather than a primary means of differentiation or communicating added value to the consumer. Supporting brand image and creating extra product sales are considered as the main functions of packaging. (Lehtonen & Uusitalo, 2011:18–26)

Consequently, it appears that Finnish companies do not yet understand the full potential of added value packaging can create for both consumers and businesses. Price is still considered as the main driver of consumer preference and purchase decisions (Lehtonen & Uusitalo, 2011:21). Differentiation through innovative packaging solutions is even avoided to some extent, as the market size is so small that one package should please all possible consumer segments. Furthermore, the outcomes of such processes are more unstable and challenging to track. Therefore, few actors are willing to take risks and develop distinct packaging, which results in a rather conventional and homogenous supply of packaging on the Finnish market. (Lehtonen & Uusitalo, 2011:26)

As outlined above, the packaging industry in Finland is lacking a holistic concept for packaging development. Design is driven by restrictions and capabilities set by technology, time or money rather than consumer insights. The most efficient and cost-effective packaging design might not bring the maximum value and return on investment for the business or the consumer. It is therefore important to study the value of packaging to the different stakeholders throughout their value network, and determine which attributes each of them considers important. This value network approach and our tool will provide a more holistic point-of-view of the entire packaging industry in Finland with the aim of illuminating the benefits of an integrated approach to packaging innovation and encouraging an industry shift in that direction.

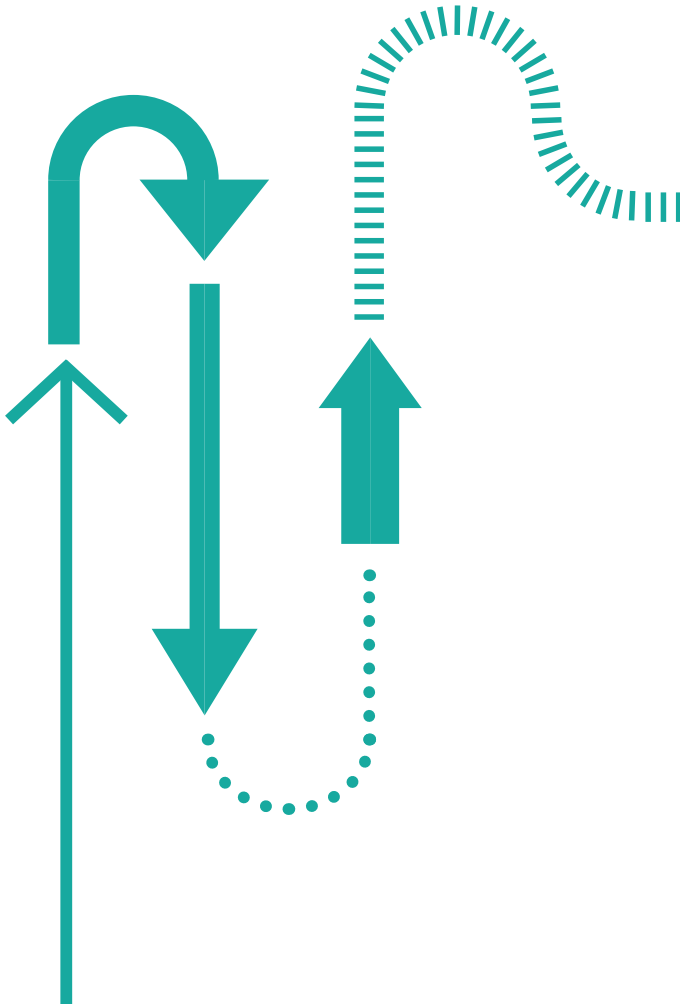


2. Development process

Our project followed an iterative process where theoretical work interplayed with continuous prototyping, testing, and validation through collaborative workshops and interviews with packaging industry professionals. The data collected was analyzed in an abductive manner: we were contantly moving between theory and the collected data in order to gain new information and a better understanding of the phenomena (Dubois and Gadde, 2002).

Overall, our project was divided into three main phases resulting in three distinct versions of a framework being developed. First, we conducted a literature review to gain a thorough understanding of the packaging industry and its challenges both globally as well as more specifically in Finland. After building this theoretical background for the framework development, we validated and supplemented our findings through an ideation workshop with packaging industry professionals. Based on an analysis of both the theoretical and empirical findings elicited in Phase One, we developed the first prototype of a framework.

During the second phase of the project, we tested and developed our prototype together with packaging industry professionals. We conducted 16 interviews and made two field study trips to Japan and the USA. To get a well-rounded and unbiased assessment of our framework, the interview respondents were chosen to represent all the different roles within the packaging value network. The full list of the respondents and their roles can be found in Table 1. Exploiting the interview findings, the framework was continuously iterated on and revised with the help of drawings, paper prototypes and brainstorming sessions. Finally, the results were validated by our client PTR and the first working version of the framework - the Packaging Value Cycle - was created.



FINLAND:
· Tomas Rosenquist (Account Director), Kuudes Kerros
· Virva Haltsonen (Design Planner) & Arni Aromaa (Creative Director, CEO, Partner), Pentagon Design
· Riitta Halonen (CEO), Remes & Packart
· Leena Kauppi (CEO) & Tiina Ruohonen (Project Director), Linkit Concept
· Noora Hiltula (Design Manager), Fazer
· Mari Hiltunen (Project Manager for New Packaging Solutions), Stora Enso
· Eija Jokela (Executive Director), Finnish Corrugated Board Association
· Juha Oksanen (Managing Director, Market Area Director) & Marja Päivärinne (Sales Manager), Elopak
· Martti Paatela (CEO), Epic Foods
· Lauri Järvinen (Technical Marketing Manager), Metsä Board
· Riku Talja (Development Manager), Metsä Board
· Markku Salimäki

USA:
· Brian Labus (Senior Director) & Hannah Steinberg (Designer), Turner Duckworth
· Greg Hathaway (Creative Director), Maple
· Evelio Mattos, Design Packaging (Creative Director) & The Dieline (Editor in Chief)

JAPAN:
· Yoshio Kato (Suntory: Creative Director, JPDA: President, Tama Art University: Lecturer)
· Toru Ito (ESQUISSE inc.: President, JPDA: Vice President, Chiba University: Lecturer)
· Chie Allan (Secretariat), JPDA
· Yumiko Kakizaki, GK Graphics
· Takeshi Sunaga (Professor in Interaction Design) & Kei Matsushita (Professor in visual Design), Tokyo University of the Arts

Table 1.

Finally, in the third phase of the project, we wanted to test the logic of the content as well as the possible use cases of the framework. At this stage, it was crucial to involve the final users of the framework, i.e. design agencies and middle managers of brand owners. Therefore, we arranged a second workshop testing the framework with its potential end users. This workshop generated incredibly valuable feedback for the validation and further development of the Packaging Value Cycle. Consequently, based on an abductive analysis of the data gathered at the workshop, the Packaging Value Cycle was revised and its second and final version created..

Each of the three development phases and their outcomes are examined and discussed more in detail below.

2.1 Phase One: Literature and Research

Phase One of our framework development process consisted of a thorough literature review and collection of supplemental knowledge from packaging industry professionals through a workshop.

2.1.1 Results

Literature Review

The literature reviewed fell into three categories: literature concerning Design Return on Investment, literature concerning packaging in general, and literature concerning other business frameworks and tools.

Our review began with Design ROI: Measurable Design (Pitkänen et al, 2012). This was a natural starting point, as it served as our client's inspiration for our project, and we were also provided access to its project manager, Antti Pitkänen, for interviewing and consultation purposes.

From this paper and our consultation with Mr. Pitkänen, a few conclusions became apparent. First, a collection of packaging attributes, with methods and metrics for their quantification, would be useful in providing a tool to better assess packaging developments (Pitkänen, 2016a). Second, a general framework rather than a specific Return on Investment calculation would be more attainable and of more interest to the industry in general (Pitkänen, 2016a).

These conclusions led us to look into articles concerning packaging in general, especially those which might contain attributes and metrics useful for its assessment. These papers included:

- Pitkänen's Design ROI mentioned above (as some attributes of design are shared with packaging)
- Niemelä-Nyrhinen & Uusitalo's Identifying potential sources of value in a packaging value chain (2013)
- Rhund's Packaging design: creating competitive advantage with product packaging (2009)
- Joutsela et al.'s Influence of packaging interaction experience on willingness to pay (in press).

These sources provided us with a wealth of information regarding the attributes of packaging, but we also needed to be able to create a holistic picture of the packaging industry and packaging developments. To do this, we reviewed articles concerning the packaging value chain, as well as other frameworks in business and design that we found to be useful.

In this pursuit, outline of the Packaging Value Chain by Niemelä-Nyrhinen & Uusitalo (2013) was invaluable. However, we considered it to be lacking in that it ignored the consumer as a key stakeholder. We also studied Value network analysis and value conversion of tangible and intangible assets by Verna Allee (2008), which led us to view the packaging industry as a value network rather than a value chain. While there is an overall flow stemming from raw materials to production to consumption, many stakeholders are involved in multiple aspects of this process in a fashion that is not always linear. Printing a package, for example, might be completed by a materials converter, a packer (which may or may not be the brand owner), or a printing house. Printing assets might be created by a design agency, the brand owner, or a printing house. There are countless scenarios that can lead to a package being printed, and in many the flow of information and capital is circuitous and complex, relying on many dependent relationships between stakeholders.

Other frameworks from which we drew inspiration included Venn diagram by IDEO from their Field Guide to Human-Centered Design (2015), and Logical Framework Approach created by the U.S. Agency for International Development (Rosenberg & Posner, 1979). Design Thinking diagram by IDEO (2015) shows that innovations reside at the meeting point of consumer desirability, technical feasibility, and business viability. The Logical Framework Approach defines projects by their impact, results and activities. This hierarchical breakdown of a project's scope can help managers prioritize their focus. One way of framing these perspectives is through directed questions. "Why does one work on a project?" speaks to its impact. "What are the outcomes of a project?" speaks to its results, and "How can results be achieved?" speaks to a project's activities (Berg, 2016).

Valuepack x DROI Workshop

It was apparent from our literature review that we might still benefit from additional information. Mostly, we felt a more thorough understanding of the packaging value network could be achieved, especially in the Finnish context, as well as additional packaging attributes and metrics discovered.

The workshop was held with the guidance of Antti Pitkänen of the Design ROI Project and Industry members of PTR's Valuepack Project, including design agencies, material producers, packaging converters, and brand owners. Thirteen participants were first asked to fill out surveys, before contributing to two working sessions: one to define value network members, and another to define packaging attributes and metrics. The result was a better understanding of the important stakeholders in the packaging value network, and 48 more packaging attributes to consider (see Appendix 1).

Figure 2.

2.1.2 Discussion

Two main tasks were necessary to create our Packaging framework. The first was to create an infographic to represent the package development process and actors. The second was to organize the packaging attributes and metrics into manageable categories.

Framework Development

In building our framework we started with the value network. In mapping the network, we repeatedly found two stakeholders to have central roles: the brand owner and the consumer. These two stakeholders are intimately linked, and all the other stakeholders in the packaging industry were connected to them in some way. From these two keystone stakeholders, we began considering their motivations: what do they require from packaging? For consumers, packaging can offer an elevated product experience which may affect their purchase decisions (Young, 2009). The brand owner needs to balance these consumer desires with what makes the most business sense, including considerations of cost and feasibility. So there was a natural connection between the keystone stakeholders of packaging and the three forces of design thinking: desirability, feasibility, and viability. These answered two major questions of the Logical Framework Approach (Rosenberg & Posner, 1979): How is answered by the value network, or the stakeholders involved in actually creating packaging. Why is addressed by the design thinking forces. Packaging must be feasible (protect the product, be producible, and sustainable), desirable (provide a good experience and usability) and viable (elevate the brand, provide the right cost/profit balance).

Having therefore defined the How and the Why of packaging, we only needed to define the What. In other words, what are the traits specific to packaging that lend to it being feasible, viable and desirable. Here, we looked to the intersections of these ideas. We found that at the intersection of the desirability and viability of packaging, for example, lies branding. Package branding at once increases the brand value of a business as well as communicates desirability to the consumer. The intersection of packaging viability and feasibility was deemed to lie in logistics. Packaging must at once protect the product while still being space efficient and easy to ship. At the intersection of feasibility and desirability, we saw sustainability to be a critical factor in packaging, which is by nature disposable. The technical properties of a package material must be balanced with the sustainability of its sourcing and the ease with which it can be recycled - both traits of concern to the consumer. Having thus defined the How, What and Why of packaging, we were left to arrange the results in a visual way.

Figure 3.

Concentric rings spoke to the hierarchy of the categories. With logistics, branding and sustainability being influenced by their outer concepts of feasibility, desirability and viability, the relationship between these two rings was locked. From here, arranging the central value network stakeholders was a matter of trial and error, and was determined by prototyping with different paper "centers" that could be physically spun within the two outer rings (Figure 3). To test the robustness of the relationships between the outer two rings, these were also disconnected in paper form, and spun to different locations. The existing logic proved sound, and our first prototype of a packaging framework are presented in Figure 4.

Naturally, this is an oversimplification of the working process in creating this framework. In reality, countless drawings were made, and many different existing frameworks were examined and tested, but never influenced our outcome directly. Several brainstorming and working sessions were held, and multiple paper prototypes produced before reaching this first prototype.

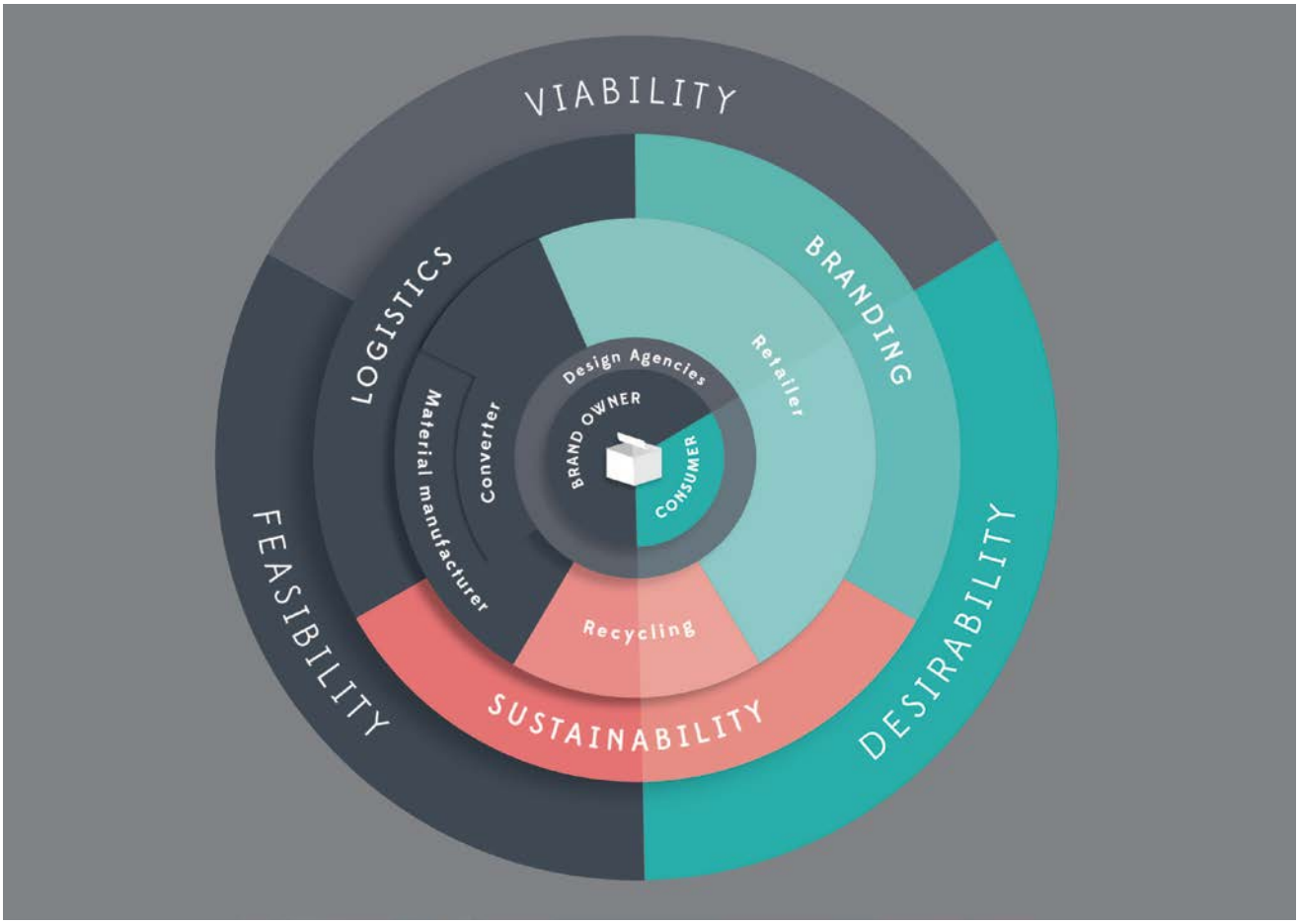

VIABILITY
LOGISTICS
BRANDING
FEASIBILITY
DESIRABILITY
SUSTAINABILITY
Material manufacturer
Converter
Design Agencies
BRAND OWNER
Retailer
CONSUMER
Recycling

Figure 4.

Attribute and metric development

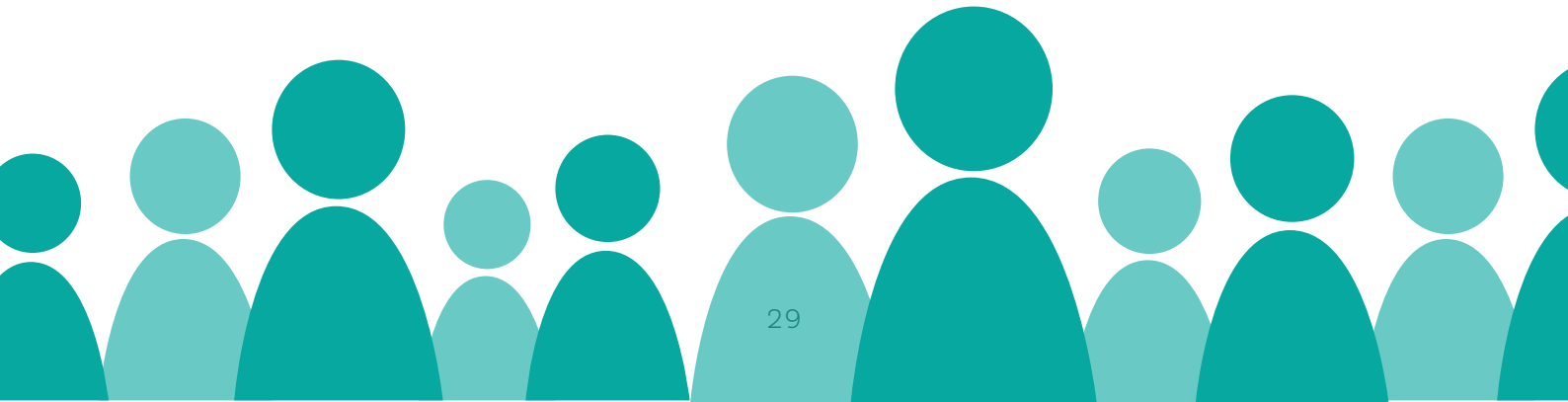
As influenced by Pitkänen's work in the Design ROI Project, we wanted to pair our framework to attributes and associated metrics in order to assign quantitative values to packaging. Over 80 packaging attributes were derived from academic sources, and a further 50 from the Valuepack x DROI Workshop. From each, multiple metrics and methods were derived from both literature and the workshop (see Appendices 1 and 2).

The list of attributes was organized by individual team members into categories, and results compared, discussed, and subsequently rearranged. The result was the grouping of attributes into seven categories: Economic value, Logistics, Feasibility of Production, Sustainability, Usability, User Experience, and Brand Communication. Within these categories metrics and methods were listed, but it was recognized that much further organization would be required.

2.2 Phase Two: Interviews and Field Studies

Phase One of our development process saw the collection of literary research, original research in the form of the Valuepack x DROI Workshop, and the creation of a prototype framework. Phase Two of our process therefore addressed the clear need to test our prototype with packaging professionals.

To gain feedback on the framework for further development, we interviewed design agencies, brand owners, converters, and materials manufacturers in Finland. We also undertook study trips to Japan and the USA to identify differences in packaging development processes in a global context and how they might affect our framework and its validity. This data was analyzed and four distinctive categories of fedback were identified and deemed to require further consideration. Overall, Phase Two was characterized by continuous iteration, prototyping and brainstorming to finally create the first version of the Packaging Value Cycle.



2.2.1 Results

Stakeholders

Determining the stakeholders, i.e. the actors involved in creating packaging, to be included in the framework turned out to be a more challenging task than presumed on the basis of from the literature review. Our objective was to have a representation of the stakeholders detailed enough to grasp all the value adding activities along the value network, but simultaneously retain enough simplicity not to limit the applicability of the framework for different stakeholders and use situations. However, some of the interview respondents saw the framework on a very concrete level due to their own activities and operations and therefore wished for a more comprehensive stakeholder network.

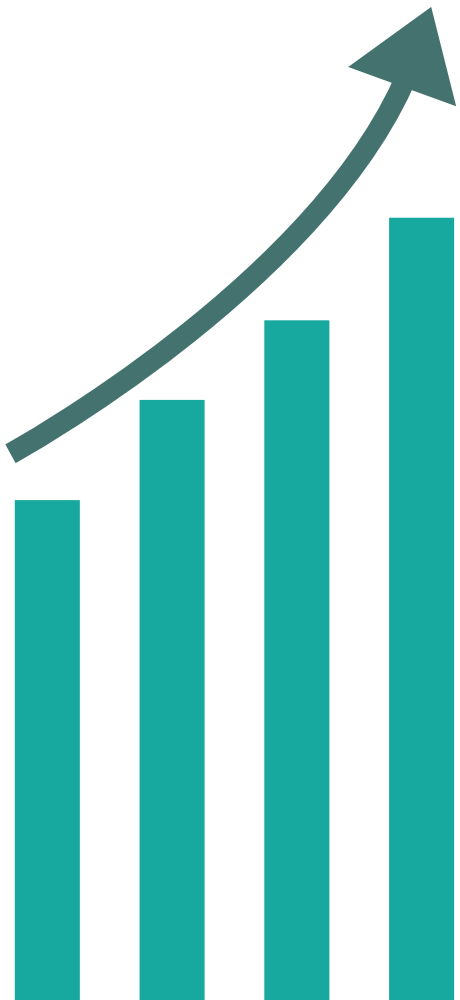
Three specific stakeholders were discussed repeatedly in the interviews: printing houses, packers and the role of design agencies. One respondent representing brand owners saw printing houses as a crucial part of the package development process, also generating a significant share of the costs related to new package development. In Japan, printing houses were also considered to be the glue between different businesses. On the other hand, for some respondents printing was considered to be an integrated part of the services provided by the converters and did not see the need of including printing houses in the framework (Kauppi, 2016). The role of the packers was also discussed: should they be given an individual section in the framework or included under the activities of the brand owner or the converter (Jokinen, 2016)? Design agencies were given an integrating role in the framework as an actor understanding and aiming to balance the demands of the different stakeholders involved in the packaging development processes. However, as learned during the interviews, our proposition might be too optimistic as design processes are not usually as holistic as we suggested. Packaging design is usually divided into sub-projects such as choosing the materials, designing the structure, and finally designing the visuals and graphics. However, it is notable that there are design agencies designing holistic package concepts, including some of the interviewed respondents, for example, Linkit Concept and Remes & Packart.

Finally, during our field study trip to Japan, we learned that the actors involved in creating packaging can be significantly more integrated than we had considered based on the literature review. In Japan, where the fast moving consumer goods market is dominated by conglomerates, the different activities in the development processes are vertically integrated, i.e. within the control of the company itself (Kato, 2016). For packaging development this means that brand owners are usually responsible for both product and package development and have teams working simultaneously on a holistic concept integrating the product and package (Kato, 2016). This affects the value network, making the relationships between the different stakeholders more closely integrated and the collaboration more efficient compared to the packaging industry in Finland.

Capturing economic value

In the first prototype of the framework, we included Economic Value as one category of the metrics and attributes listing how economic value of a package could be measured with the help of different metrics. However, based on interviews and discussion with our client PTR, we discovered that metrics across different categories in the framework were all contributing either to the costs of packaging development or the profits generated by the package, i.e. the economic value or return on investment. Consequently, we started exploring the possibility of dividing the activities in the framework under Costs and Profits. This solution gained support amongst the respondents (Jokinen, 2016; Kauppi, 2016; Halonen, 2016).

"The framework would help in turning the packaging into an investment. It shows how the profit side [brand communication and desirable package concept] can earn money for the production side." - Leena Kauppi, Linkit Concept



Possible applications of the framework

When developing the first prototype of the framework, we did not yet consider how the framework would be applied on a concrete level. Therefore, one of the key objectives for the interviews and the field study trips was to get insights from the professionals on how they would use the framework and how it would help them to plan, manage or track their packaging development processes.

Three main use situations were identified for the framework: before, during, and after the packaging development project. In the front end of a packaging development project the framework was seen as a helpful tool for opportunity mapping, ideation, scenario planning, team building, and as a tool for arguing the importance of packaging investments (Kauppi, 2016). Design agencies saw the framework as a valuable ideation tool for new package development but also as a helpful tool for demonstrating the added value a well-planned packaging design can create (Kauppi, 2016; Halonen, 2016).

"If we presented the framework to the brand owners, it would help us to communicate the value packaging can create."

"It is a good presentation tool for design agencies."

During packaging development projects, the framework could be used for tracking progress as well as fostering more efficient communication between business-oriented brand owners, consumer-centric designers and technology-driven manufacturers.

"Co-creation between stakeholders from the early stages of the design process provides value to our clients. It can become a really helpful tool to include stakeholders into the discussion early on in the design process."

During the field trip to the US, we also discovered that the framework could be used as an overall management tool of packaging development projects. Lastly, the framework was seen as a helpful tool for the evaluation of completed packaging development projects and could be used for collecting all the project related data in one place. This could help to assess how a package performed outgoing from the different aspects of its feasibility, viability and desirability.

Overall, the interview respondents found the framework to be helpful. However, most of them, especially the brand owners and material manufacturers, wished for the framework to be more concrete and offer the possibility of inserting numeric data of investments and returns to enable ROI calculations (Hiltunen, 2016). As seen in the DROI project led by Pitkänen, however, adding actual numbers and calculations might be a challenging task, perhaps even impossible to some extent, and could make the framework overwhelming to use (Pitkänen, 2016a & Pitkänen et al., 2012). While most respondents wished to see an ROI calculation tool, some design agencies thought that might detract from the consumer-inclusive approach accentuated by the framework:

"Our client has a very consumer-driven organization, and they believe that packaging creates added value. However, to what extent they measure the ROI of packaging is hard to say" - Tomas Rosenquist, Kuudes Kerros

Based on the discussion above, further development and testing of the metrics was needed to make them as concrete and easy to apply as possible.

Finally, some more specific suggestions on the possible applications of the framework were discussed. Some respondents wanted to see a digital version of the framework allowing for rotation of the rings and control of the visibility of different sections to examine them one at a time. On the other hand, some thought providing a spreadsheet version of the attributes and metrics might be helpful for brand owners, allowing them to integrate the framework into their own calculations (Hiltunen, 2016; Jokinen, 2016; Kauppi, 2016). Lastly, including cases of successful packaging to demonstrate how the framework can be used was discussed (Kauppi, 2016).

Integrating product and package development

In Japan, the packaging industry professionals encouraged a holistic approach to package development where new product and new package development processes are integrated. In a country of conglomerates this is possible as brand owners can control both the product and package being developed simultaneously. Consequently, they encouraged us to see the product as a crucial part of a package development process (and vice versa), and find a way to communicate the importance of the package-product fit in the framework. (Kato, 2016; Sunaga & Matsushita, 2016)

2.2.2 Discussion

Based on the findings from the interviews and the two field study trips, the first prototype of the framework was revised through a series of prototypes, iteration and validation. The metrics and attributes collected from literature and the Valuepack x DROI Workshop were evaluated and revised based on the interview findings. Three key changes were made to the prototype that led to the creation of the Packaging Value Cycle introduced in this section. Furthermore, topics for further research were identified.

Packaging Value Cycle

The Packaging Value Cycle follows the same logic as the first prototype, seen in Figure 4. However, the stakeholders included into the framework were revised. Based on the discussion about printing houses and packers, we decided to add a new section to the stakeholder ring called Finishing. In this way we could ensure that significant cost related to printing and other activities related to finishing phases of a package were considered. The second change to the stakeholder network was specifying the role of the design agencies. As conventional design agencies usually are not as holistic as the prototype suggested, the name Design Agencies was changed to Packaging Design Agencies. With this change we wanted to make it clear that agencies considering decisions of material and structure in addition to visuals can have a particularly positive influence as an integrating force amongst the stakeholder network.

The categories of packaging attributes and metrics were also re-evaluated. The category of economic value was deemed to be inconsistent with the underlying goal of the framework to help identify and capture the value packaging can create. Afterall, the objective of the framework was to capture value and help in understanding what factors affect the value of a package. Here, we discovered that metrics across different categories in the framework were all contributing either to the costs of the packaging development process or the profits generated by the package. After closer examination of the categories we could see a division into the costs side and profit side vertically through the middle of the framework. On the left we had the costs of manufacturing and logistics that are rather easy to calculate, whereas the right side of the framework represented the possible profits that can be realized with an appealing packaging design and branding. The right side of the framework is more challenging to estimate as consumer and branding related metrics are often intangible.

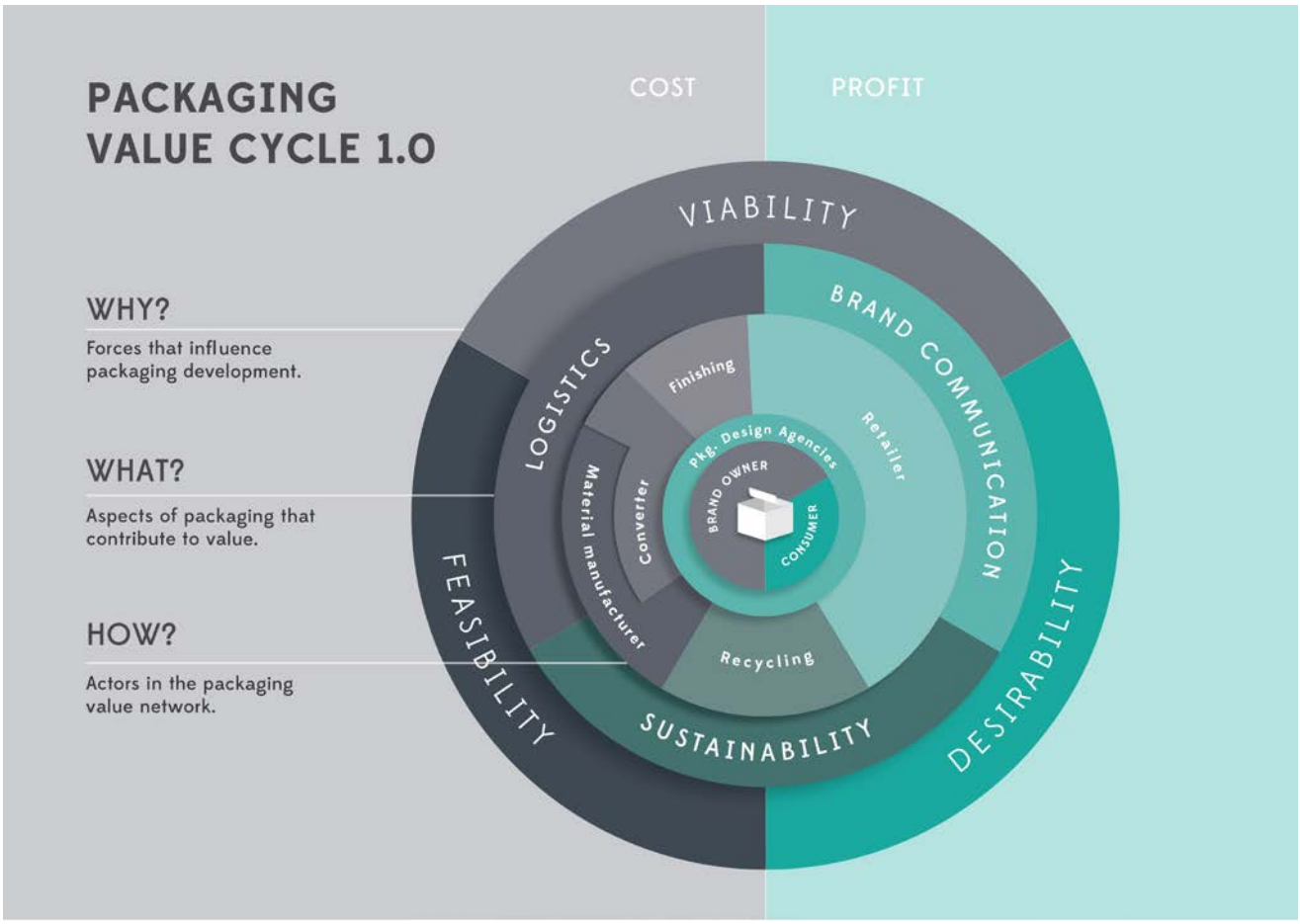

PACKAGING
VALUE CYCLE 1.0
COST
PROFIT
WHY?
Forces that influence packaging development.
WHAT?
Aspects of packaging that contribute to value.
HOW?
Actors in the packaging value network.
VIABILITY
BRAND COMMUNICATION
DESIRABILITY
SUSTAINABILITY
FEASIBILITY
LOGISTICS
Finishing
Pkg. Design Agencies
Retailer
BRAND OWNER
CONSUMER
Converter
Material manufacturer
Recycling

Figure 5.

Attributes & Metrics

The list of attributes and metrics were revised based on the feedback from the industry professionals. We re-grouped and combined some of the attributes and metrics to reduce overlaps and inconsistencies. Here, an important criterium for the reassessment was the level of concreteness: Were the attributes and metrics concrete enough to be measured, yet not too detailed and case specific? The full list of attributes and metrics is shown in Table 2.

Needs for further development

We identified the need for further testing of the framework to understand how the Packaging Value Cycle could be used in practice and how beneficial it might be for its target audience of design agencies and middle managers. Similarly, we saw the need of testing the attributes and metrics listed in the context of an actual packaging development case to evaluate their usefulness and validity for measuring the costs and profits created by packaging. This could also answer the need of making the framework more concrete and allow testing the possible inclusion of numeric data. Finally, we wanted to see the Packaging Value Cycle in use to test the logic and hierarchy of its Why, What and How rings.

		Attribute:	Metrics:
FEASIBILITY	Feasibility in production	Production cost & efficiency	Runnability | Productivity | Fit in current production lines | Material wastage | Manufacturing line investment and longevity
		Packaging cost & efficiency	Runnability | Package-product fit | Fit in current packing lines
		Informative	Customer service requests | User surveys/research | Package value toolkit
		Scalability	Time to produce | Production volume | Packing time and volume
		Material properties	Material cost | Durability & quality | Printability
	Sustainability	Material properties	Eco Labels | Ethical and renewable sourcing | Amount of recycled/ post-consumer content | Reduce amount of hazardous substances
		Lifecycle impacts	Recycling costs | Energy use | Recyclable, Reusable or recoverable | Limit size and weight
VIABILITY	Logistic efficiency	Shipping efficiency	Shipping cost | Shipping Time | Package weight | Pallet optimization | Taxes / Tariffs | Cost of storage
		Product protection	Package Strength | Number of damaged packages | Safety
		Ease of handling	Clear markings
	Brand communication	Brand differentation	AB-testing | Eye tracking | Sales
		Targeting	Market analysis | Target group studies | Market share | Access to new markets | Sales | Ethnographic studies
		Quality brand message content	CRM (Customer satisfaction & retention) | Web Analytics | Consumer surveys
		Appropriate communication channels	CRM (Customer satisfaction & retention) | Web Analytics | Consumer surveys
DESIRABILITY	Experience	Perceived/Exceeded expectations	Package value toolkit | Eye tracking | User surveys & research | Willingness to pay | Rate of Sharing | Experience Sampling Method | Expert observation | Psycho-physiological measurements | Unboxing videos | Ethnographic studies
		Hedonic motivation	
		Cultural perception	
	Usability	Ease of use	Customer service requests | User surveys/research | Package value toolkit
		Ease of disposal	Amount recycled
		Informative	Customer service requests | User surveys/research | Package value toolkit
		Safety	Customer service requests | User surveys/research | Package value toolkit
		Ergonomics	Customer service requests | User surveys/research | Package value toolkit

Table 2.

2.3 Phase Three: Packaging ROI Workshop and final interviews

At this point of the development of our framework, we had created a prototype based upon a literature review and the Valuepack x DROI Workshop. From there, interviews with various industry professionals led to further improvements, and the first working version of what we have called the Packaging Value Cycle.

With this first iteration of the Packaging Value Cycle, we hoped to accelerate its development by testing it on a case with multiple target users. We therefore opted to host another workshop, which we called the Packaging ROI Workshop. The workshop took the form of two exercises and a survey which was completed in stages throughout the three-hour program (before, during, and after introduction to the Packaging Value Cycle). Eleven professional packaging designers were in attendance and were split into two groups - each using the Packaging Value Cycle to evaluate a different packaging solution.

The first team assessed the Bookbox, designed by students from Aalto PackAge as part of the Packaging User Experience module of the Valuepack project. The second team assessed Arla's new Ihana yoghurt container, which uses Elopak's Pure-Pak® Sense technology - a textured liquid carton package that is easier to fold up after use. Both of these cases were chosen as they are case projects that our team will evaluate with our Packaging Value Cycle. Having industry professionals do so first, however, accomplished two things: first, it expanded our thinking on the two cases, and second, it provided an opportunity to discover drawbacks and strengths of the Packaging Value Cycle.

Evaluating the packages was done in two stages. First, the Packaging Value Cycle was used with no direction. The second stage made use of a large canvas and individual tokens for each packaging metric. These metrics were to be arranged on the canvas in order of importance.

In addition to the Packaging ROI Workshop, we also conducted a few further interviews to hone the Packaging Value Cycle even further. A short interview with Antti Pitkänen was conducted after the Packaging ROI Workshop. Valuable advice was also given by Markku Salimäki, one of our team's supervisors, and previous Director of the Aalto International Design Business Management Programme.

2.3.1 Results

Workshop results

Feedback from the Packaging ROI Workshop was encouragingly positive. The packaging designers in attendance were on the whole excited by the framework and expressed interest in using it in their future projects.

"A lovely tool to get all the stakeholders in the same room. You could even build a team with it. You're in a position to change the way people design packaging." - Ian Rooney, CEO Packlab

Based on survey results, participants who had already seen the framework found it very easy to understand in comparison to others. However, most participants who were seeing it for the first time found that their initial understanding of the framework was correct after receiving further explanation (see Appendix 3 for survey results).

After completion of the workshop exercises, several strengths and weaknesses of the Packaging Value Cycle were noted. On the whole, it was felt that the tool was great for creating a common understanding amongst packaging stakeholders. Still, as expressed to us in person and in the survey results, there were some points of confusion concerning individual metrics, as well as on how to use the framework. Many participants expressed an interest in a more directed, step-by-step guide on the framework's use. Almost all participants felt that a digital tool would be of particular interest to them. Although the team agreed that an instruction set and the digitization of the Packaging Value Cycle would be valuable, their development would require considerable time and iteration that lies beyond the scope of this project. However, we see it as a positive sign that the advice given by workshop attendees largely centered around further development of the framework rather than specific criticisms.

Specificity of language

After the workshop, a quick consultation with Antti Pitkänen (2016b) revealed additional valuable observations, which centered around the specific use of language - of particular importance in a framework whose main purpose is to condense a lot of information in a few visuals and words. It was noted that our division of the Packaging Value Cycle into two sides of Cost and Profit directly contradicted our stated mission of allowing packaging to be seen as an investment rather than a cost. The solution was a simple one. We changed Cost to Investment, and Profit to Returns. Both cost/profit and investment/return are technically correct, signifying inflows and outflows of money from the perspective of the brand owner, but the difference is one of tone and implication (Pitkänen, 2016b). Pitkänen (2016b) also noted that our list of metrics consisted not simply of metrics, but also data collection methods. This is an interesting problem, as it is not so easily solved. Some packaging attributes have clearly defined associated metrics that require no specific collection methods. Package protection, for example, can be quantified by the number of products damaged in transit and use. Other attributes such as shelf visibility, for example, are more easily associated with a method, such as eye-tracking, rather than specific metrics. For now, we will switch to using the term Metrics and Methods rather than metrics alone, to describe the ways in which packaging success can be quantified.

A Logical Inconsistency

The most important feedback, however, originated in a meeting with our supervisor, Markku Salimäki (2016). He gave voice to a concern that many had had before, including some of our team members, as well as several participants at the Packaging ROI Workshop. Where others were confused by the problem, Salimäki was able to articulate it well, giving us a starting point for its resolution. The problem lay in the inconsistencies between the segments in the Packaging Value Cycle and the six packaging attribute categories. Three attribute categories shared the same titles as segments on the middle ring of the framework: Sustainability, Logistics, and Brand Communications. The other attribute categories: Feasibility in production, User Experience, and Usability were seen to fall under the umbrella of the outer ring forces of Feasibility and Desirability. The logical hierarchy between the attribute categories and the Packaging Value Cycle segments was therefore inconsistent. Salimäki (2016) noted that this was likely a result of those two elements (framework and attributes) being developed through distinct processes, as noted in Phase One of this report.

2.3.2 Discussion

A breakthrough in solving the logical problem clarified by Salimäki came at the realization that the logic initially used to develop the middle framework segments could be reinforced by taking into consideration the packaging attribute categories. The middle ring was initially conceived as meeting points for the Design Thinking forces labeled viability, feasibility, and desirability, following the logic shown in Figure 6.

We realized, however, that the six attribute categories - decided upon through an organic affinity grouping of collected attributes - fell neatly within the Design Thinking forces. *Viability* encompasses *Logistics* and *Branding*. *Feasibility* encompasses *Sustainability* and *Production Efficiency*. *Desirability* encompasses *Usability* and *User Experience*.

So to better define the middle ring, we continued to apply the previous logic of combining the outer ring segments, but now taking into account the package attributes. The meeting of *Feasibility* and *Viability* became the meeting of *Production* and *Logistics*. This was deemed to be best labeled as *Operations*. The rest of these combinations are presented in Figure 7.

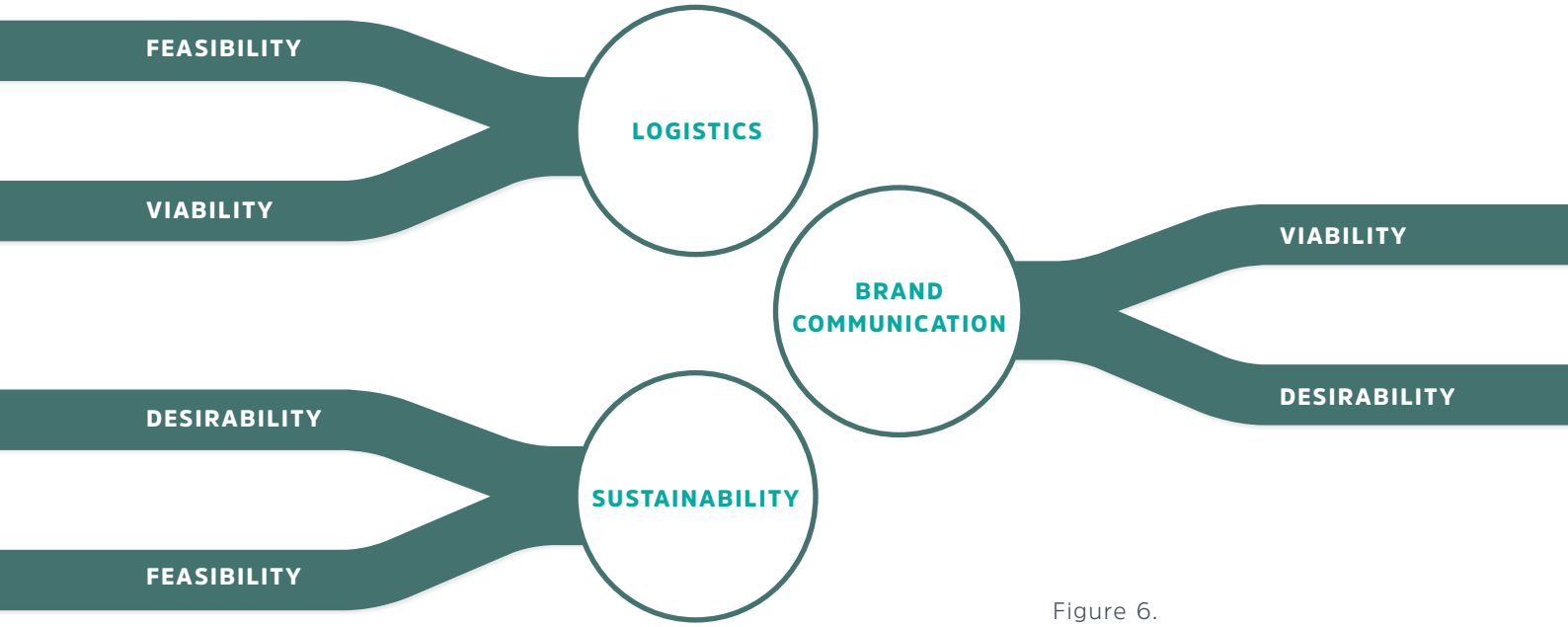


Figure 6.

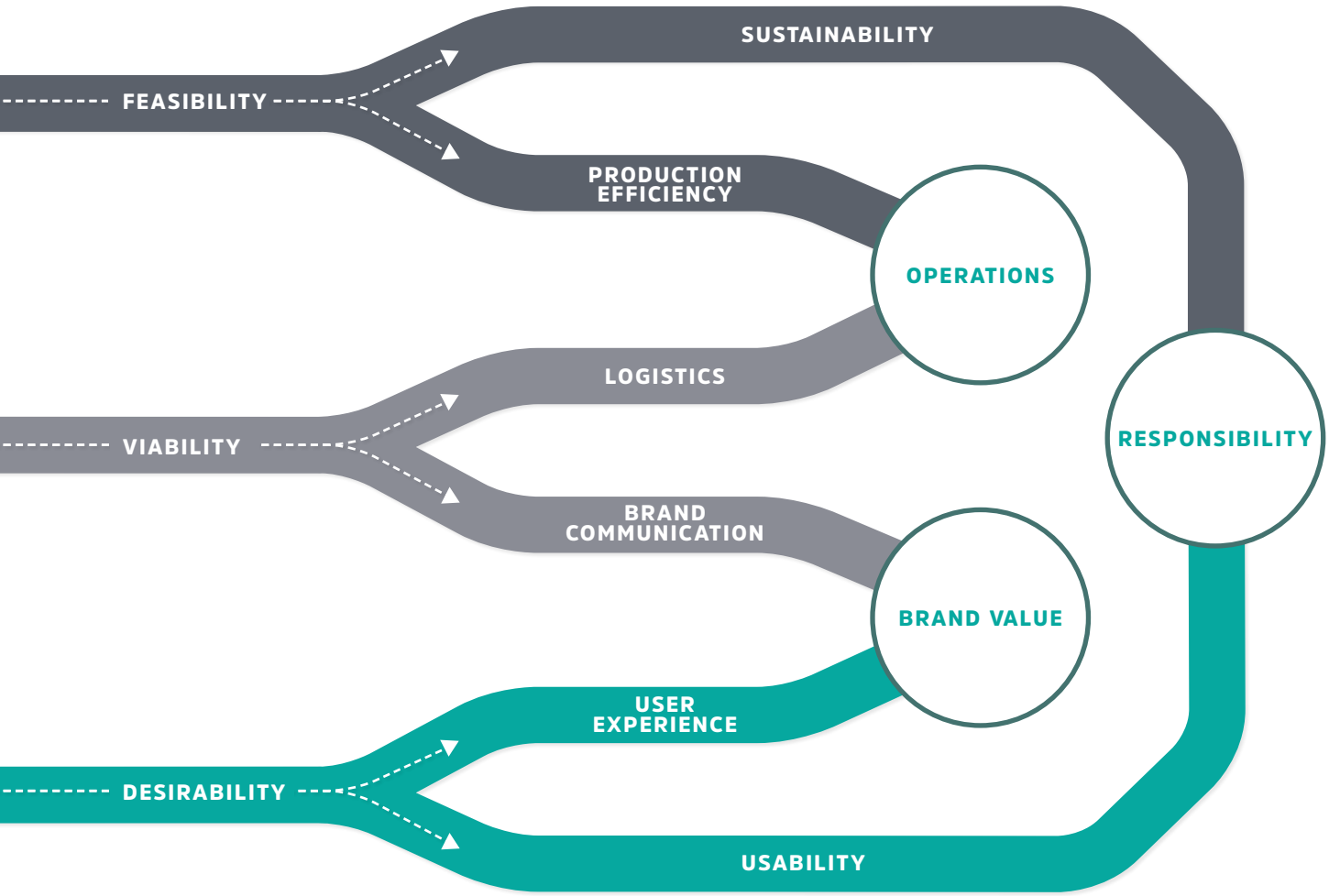

SUSTAINABILITY
FEASIBILITY
PRODUCTION
EFFICIENCY
OPERATIONS
LOGISTICS
VIABILITY
RESPONSIBILITY
BRAND
COMMUNICATION
BRAND VALUE
USER
EXPERIENCE
DESIRABILITY
USABILITY

Figure 7.

Final outcome

The Packaging Value Cycle was re-worked to reflect the above changes and reach its final version, at least within the scope of this project (Figure 8).

This revision of the Package Value Cycle allows for a seamless and consistent connection between the framework and the packaging attributes to which it is linked. Each attribute category now occupies its own location in the framework, clarifying its connection to certain stakeholders and forces.

The individual metrics and methods were also pared down, deduplicated and simplified according to advice received at the Packaging ROI Workshop. The final list of attributes and corresponding metrics and methods are presented in Table 3.

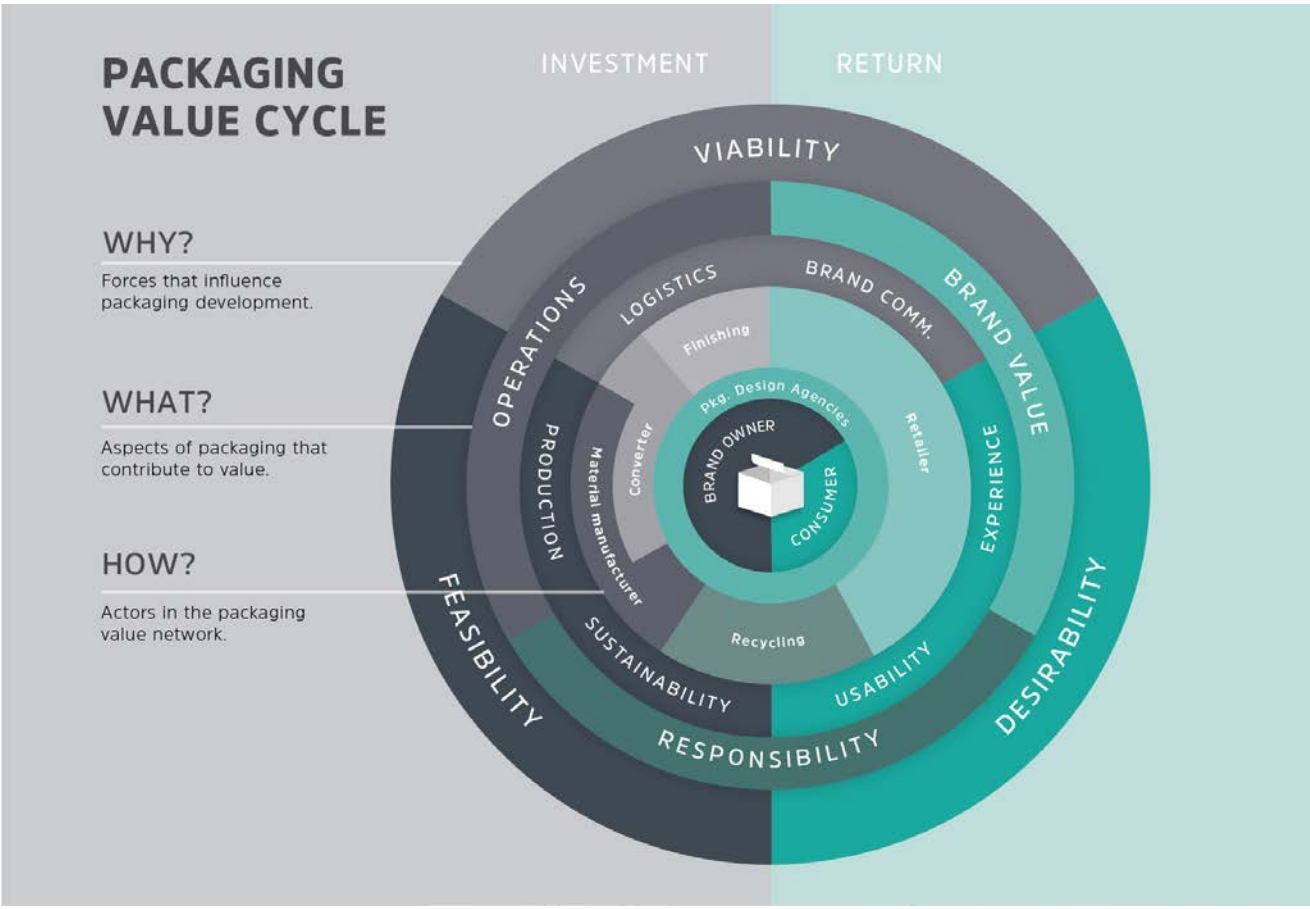
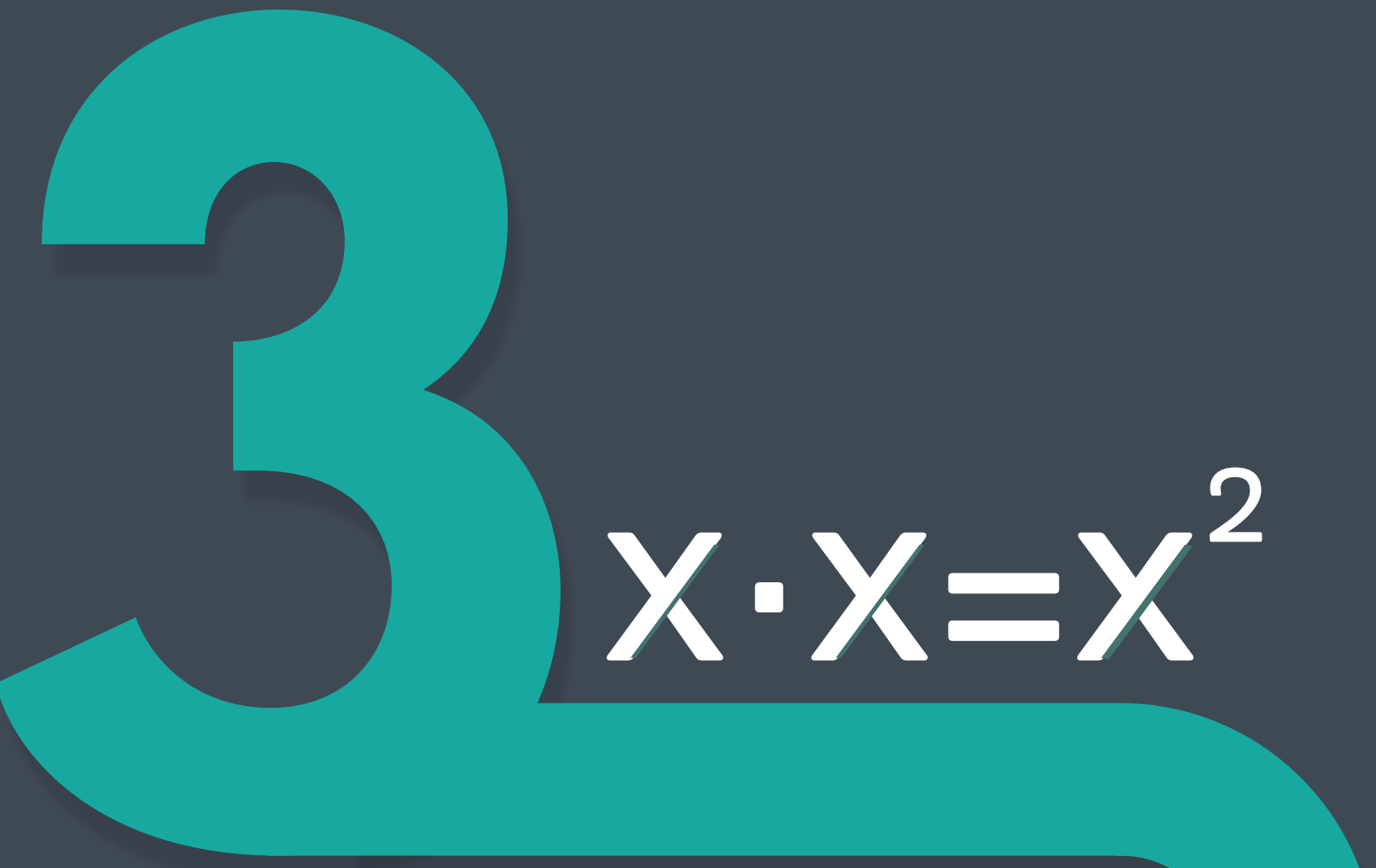


Figure 8.

		Attribute:	Metrics:
FEASIBILITY	Feasibility in production	Production cost & efficiency	Runnability | Productivity | Fit in current production lines | Material wastage | Manufacturing line investment and longevity
		Packaging cost & efficiency	Packing | Package-product fit | Fit in current packing lines
		Scalability	Time to produce | Production volume
		Material properties	Material cost | Durability & quality | Printability
	Sustainability	Material properties	Eco Labels | Ethical and renewable sourcing | Amount of recycled | Post-consumer content | Reduce amount of hazardous substances
		Lifecycle impacts	Recycling costs | Energy use | Recoverable, recyclable or reusable | Limit size and weight
VIABILITY	Logistic efficiency	Shipping efficiency	Shipping cost | Package weight | Pallet optimization | Package size
		Product protection	Package Strength | Number of damaged packages
		Ease of handling	Clear markings | Ergonomics
	Brand communication	Brand differentiation	AB-testing | Eye tracking | Market share
		Targeting	Market analysis | Target group studies | Access to new markets
		Quality brand message content	Consumer surveys | Willingness to pay
DESIRABILITY	Experience	Perceived/Exceeded expectations	Package value toolkit | Eye tracking | User surveys & research | Rate of Sharing | Psycho-physiological measurements | Ethnographic studies
		Hedonic motivation	
		Cultural perception	
	Usability	Ease of use	Customer Service Requests | User Surveys + Research | Package value toolkit | Amount of packaging recycled
		Informative	
		Safe	
		Ergonomics	

Table 3.



3. Discussion & Conclusion

3.1 Future scope

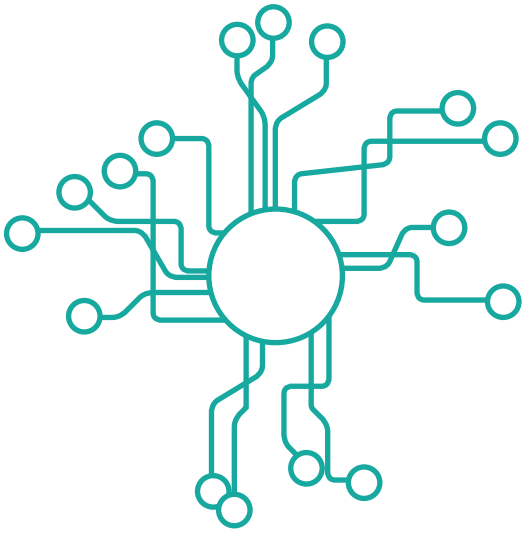
Possible Use Cases

The Packaging Value Cycle has a wide scope and could still be developed further, both in terms of usage and form. During the course of the project, the team conducted qualitative research through workshops and interviews with experts in the field of packaging. The results have been utilized not only to validate the tool, but also to gain insight into future development paths and the tool's possible impact on the packaging industry. In its current form, the Packaging Value Cycle could be best utilized during the package development process. The tool could bring together all associated stakeholders and hence facilitate co-creation. Providing a walk-through of the various packaging attributes and the associated metrics and methods, the tool can give a better picture of the areas requiring focus, thus helping businesses to make better packaging investments. In addition to this, the tool could be utilized before the project start for scenario planning, and after the market launch to evaluate the package. It could also be used during briefing sessions and meetings to share a common understanding on a project between the various participating stakeholders. At the start of a new project, it may be difficult to communicate the importance of packaging and the aspects that should be taken into account. This can be especially true for design agencies pitching cases to their clients.

Digitization

The tool could be further enhanced through conversion into a digitized and interactive format. A digital format would make Packaging Value Cycle more comprehensive and flexible by enabling the addition of layers and interactive features. This could give the users a wider perspective and help them in defining project starting points and involved agendas. A digital version, for example, might allow different sections of the framework to take more prominent visual roles when called for, opening up sets of attributes and metrics, for example, which could then be arranged or manipulated. Another possibility is the introduction of a temporal ascpect that compares the importance of the metrics along a timeline, after arranging them in order from the least important to the most important. In digital format, the Packaging Value Cycle would ideally take the form of a cloud based web or mobile application, storing data in a cloud database in real time. This data could further be used in other development phases of the same package as well as in totally different projects. This would serve the users as reference in new development projects, allowing them to reflect on previous choices and decisions.

Advanced technologies including Augmented Reality and Virtual Reality could also be utilized in the application, which would take perspectives to a whole new level. This would make the tool more understandable and playful. In addition to the core functionality, the tool in the form of an application could also include tutorial videos, concrete examples of its use in different stages of a project and a short description. An option could be provided for customizing the tool and/or building the tool from scratch, to respond to project-specific requirements. Pre-made templates and instructions stored in the database could be used in such cases.



3.2 Limitations

The Packaging Value Cycle tool emerged through an iterative development process. Each major change in the framework was subsequently evaluated by industry professionals and academics. Weaknesses were indetified and addressed, strengths were retained. Our latest version of the Packaging Value Cycle and the final outcome presented here have not been tested or evaluated. We are convinced that it is better than the one that came before it, with a stronger logic and a stronger connection to the packaging attributes and metrics. Still, only time - and use in projects - will tell whether or not it is successful.

It is also important to remember what the Packaging Value Cycle is and is not. It is a simple infographic that will allow many stakeholders, especially those new to packaging, to understand the industry and its complexity quickly and easily. Similarly, it communicates clearly the multiple roles of packaging - a perspective often skewed depending on one's background in the industry (or lack thereof).

What the Packaging Value Cycle is not, however, is a standalone packaging creation tool. It offers points to consider, and even some methods for evaluating those, but no single tool or assembly of methods can guarantee a successful package. Similarly, the tool is not an ROI calculation. Quantifiable metrics are provided that can strengthen brand owners' current calculations, but we do not offer one ourselves. This is for manifold reasons. For one, each package, product and company is unique, and different attributes need to be considered and given an appropriate weight. More importantly, though, some of the benefits of packaging are simply too difficult or unpredictable to quantify accurately. Packaging, especially if consistent throughout a product portfolio, has the ability to revitalise a brand. Immediate sales increases may be predicted, but the overall increase in brand value can be far more unpredictable, and far more important.

3.3 Conclusion

Developing the Packaging Value Cycle was a long and circuitous process. Short bursts of creativity were interspersed with extensive interviews, workshops and meetings to test the latest outcomes. A great many parties were involved and provided different views and experiences to draw upon in our work. Their input and contributions have been invaluable to our progress. While our working process did fall into the three phases outlined in this report, this was not the plan we had from the outset. With each new development in our own knowledge as well as our outcome, plans changed to follow suit. A lot of time was spent at the beginning of the project simply learning about the packaging industry. Behind such a ubiquitous product as packaging hides much complexity. Our inexperience in the subject field may have been a boon in disguise, giving us the hubris required to attempt to capture the packaging industry in one framework. We hope that with the Packaging Value Cycle we have succeeded in our goals of providing a method for stakeholders of different perspectives to reach common understanding, and a tool for evaluating existing packaging designs and inspiring new ones.

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Appendices

Appendix 1: List of attributes and metrics from Valuepack x DROI Workshop

Stakeholder	Attributes Team 1	Metrics Team 1	Attributes Team 2	Metrics Team 2
Distribution chain	Economical to transport	Pallet effectiveness	Durability	Shelf-life/time
		Cost per unit	Trackability	Visibility to life cycle
		Weight + number / pallet		NFC /RFID
		Lead time, inventory info	Protectability	# of Patents
		Weight and volume of packaging		Reinforcement
				TS
	Easy to handle	Time for shelving	Business model	Turnaround time
		Handling time	Profitability	Sales
		Skills needed		Profit margin
		Personnel required	Brand integrity/ competitiveness	Differentiation
				Recognizability
	Product protection	Safety testing (vibration)	Flat pack	Packaging effectiveness
		Quality/freshenss at end of supply chain		Volume
		Measuring O2 content, solid particles present, etc.	Storability	Volume to cost
				Ambiental conditions
Notes: Secondary packaging is important here				
Brand owner	Attractiveness	Customer loyalty	Positioning	Marketshare
		Sales figures		Sales data
		Consumer studies	Branding	Recognizability
			Customer loyalty	Repeat purchases
	Functionality	Consumer studies	Target groups	Market data
	Economical and easy in production	Margin of package		Sales data
		Production costs		Ethnographic research
		Packing costs	Desirability	Surveys
		Availability	Affordable	Cost-profit margins
	Fits within brand owner's overall portfolio	Portfolio management professionals	Affordable	Cost of production
	Engagement of customers	% of correspondance	Big Data Analyisis	Augmented reality
			Cash flow	Turnaround time
				Development costs
			Brand integrity	Brand equity
			Protects product	Measure loss/waste

Stakeholder	Attributes Team 1	Metrics Team 1	Attributes Team 2	Metrics Team 2
Notes: Customer engagement can be tracked through augmented reality				
End Consumer	Ease of use Information (safety, instructions, etc) User Experience Convenience Attractiveness Status - identity	Observation	Quality	Quality metrics
		Focus groups	User Experience	Usability
		Ethnographic studies		Surveys
		Interviews	Brand Identity	Surveys (Augmented Reality)
		Complaints	Easy to find and use	Differentiation
		Eye tracking		Eye Tracking
		Neuro studies	Recycling	% recycled
		Willingness to Pay	Consumer value	Price Point
				Willingness to Pay
	Functionality	Extended shelf life		
		Indicators (product remaining, quality)		
		Portion size		
		Safety statistics (accidents, allergies).		
	Service related to the package (refilling)			
	Opportunity to develop products	How many users/ feedback		
Notes: Results could be qualitative/quantitative. Difficult to measure all elements.				
Retailer	Visibilty	Shelving time	Positioning	Marketshare
	Fits the shelf		Usability in the store	Eye tracking
	Easy to Handle		Stackability	# products/ shelf
				Stacking time
			Marketing/recognition	Eye tracking
				Surveys/ sales
Packer			Integrity	Wastage, runthrough time
			Trackability	Number of waypoints
			No contamination	Product spoilage
			Reliability	Stress tests
				Life span of reusable packages
			Speed	Time to produce
			Storability	Storage time and space
				Shelf life and packing efficiency
				ISO standards

Appendix 2: List of attributes and metrics from literature

Stakeholder & attributes	Specification	Metric	Sources
Material manufacturer			
Standardization		Runnability of packaging	
Production cost	Materials	Costs (€)	Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Brand owner (filling)			
Standardization			Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.
Proper shape and size			Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.
Communication	Proper markings		Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.
Easy to use	Checking contents, Ready to use		Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.
Heat resistance	Hot & cold filling		Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Uniform quality			Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.
Logistics (brand owner, wholesaler, retailer)			
Strength		Number of damaged packages	Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.

Stakeholder & attributes	Specification	Metric	Sources
Weight		kg	Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Pallet efficiency	Size and dimensions	Fit to pallet	Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.
Shelf efficiency	Size and dimensions	Fit to shelf	Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Communication & identification	Clear & standard markings, bar codes, use-by dates		Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Ergonomy	Easy to unload		Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.
Marketing or brand communication (retailer, BO)			
Attractive design		WTP, Eye-tracking	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Communication of quality	Protective & tamper evident		Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Distinctive design	Differentiation, Brand strengthening	Customer feedback, Satisfaction survey Product / brand evaluation	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.

Stakeholder & attributes	Specification	Metric	Sources
User-friendly design	Usability	Customer feedback, Satisfaction survey Number of customer service requests	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Brand Equity	Brand awareness	Brand recognition, brand recall, Eye-tracking	Keller, K. L. (1993) Conceptualizing, Measu-ring, Managing Customer-Based Brand Equity. Journal Of Marketing. 57(1): 1–22.
	Brand image	Consumer surveys & interviews, Free association, Ethnography & observation	
Consumer			
Usability Attributes			
Easy to use: open, re-close & dispose (convenience)		Feedback surveys	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Safe to use	Childproof, Elderly people		Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Ergonomics	Weight, Easy to carry, Proper size	Feedback survey	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Informative		Packaging Value Toolkit (PVT)	Joutsela, M., Latvala, T. & Roto, V. (2016, in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Product visibility		Eye-tracking study	Joutsela, M., Latvala, T. & Roto, V. (2016, in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Durability and quality of the package	Maintaining quality and freshness (temp. & hum.)	Customer feedback, Satisfaction survey	Joutsela, M., Latvala, T. & Roto, V. (2016, in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.

Stakeholder & attributes	Specification	Metric	Sources
Value for money		WTP	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Hedonic attributes			
Colour, Print quality		Eye-tracking	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Haptics		Feedback surveys	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Eco-friendliness		Material recyclability, use of renewable materials, Number of EcoLabels, Carbon Footprint of package/product	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report. Rundh, B. (2009) Packaging design: creating competitive advantage with product packaging. British Food Journal. 111(9): 988–1002.
Style, attractiveness and appeal		Eye-tracking, feedback surveys	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Originality		PVT, Feedback surveys	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Surprise factors		Packaging Value Toolkit	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Fit for trend		WTP, Eye-tracking, Feedback surveys	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Fit for brand		WTP, Eye-tracking, Feedback surveys	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Design agency			
Attractive design	Aesthetics, style, attractiveness and appeal	Customer feedback, Satisfaction surveys Number of design awards	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.

Stakeholder & attributes	Specification	Metric	Sources
Distinctive design	Differentiation	Customer feedback, Satisfaction surveys Product/brand evaluation	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
User-friendly design	Usability	Customer feedback, Satisfaction surveys, Number of customer service requests	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Other			
Consumer UX: Innovativeness		PVT, Feedback surveys	Joutsela, M., Latvala, T. & Roto, V. (in press) Influence of packaging interaction experience on willingness to pay. IAPRI 2016 paper.
Design Agency: Brand strengthening		Customer feedback, Satisfaction surveys, Product/brand evaluation, Dealer feedback	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Design Agency: User satisfaction		Product/brand evaluation	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Brand owner: User satisfaction		Customer feedback, Satisfaction surveys	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Brand owner: Usability		Customer feedback, Satisfaction surveys, Number of customer service requests	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Brand owner: Brand strengthening		Customer feedback, Satisfaction surveys, Product/brand evaluation, Dealer feedback	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Brand owner: Access to new markets		Market share, Number of new customers, Number of new patents/IPRs	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Brand Owner: Creation of new markets		Number of new customers	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Logistics	Efficient logistics	Number of items damaged in transport, Change in efficiency in distrubution channels	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Recycle	Life cycle optimization	Material durability & recyclability	Pitkänen, A., Cheng, H., Keinänen, K. & Salo, M. (2012) DROI - Measurable Design. Design ROI Project Report.
Retailer: Easily disposable (convenience)			Niemelä-Nyrhinen, J., Uusitalo, O. (2013) Identifying potential sources of value in a packaging value chain. Journal of Business & Industrial Marketing. 28(2): 76-85.

Appendix 3: Packaging ROI Workshop survey results

1. Initial Impressions:

Arla Ihana yoghurt

Q. Is this your first time seeing the Packaging ROI Framework - Yes

I don't understand it at all	1	2	(3)	4	5	I understand it completely
Visually simple	1	(2)	3	4	5	Visually complex

Comments - Initial idea is quite clear but how to use isn't clear.

2. Impression Update:

My initial understanding was incorrect	1	2	3	(4)	5	My initial understanding was correct
Now, I don't understand the framework at all	1	2	3	(4)	5	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
Partly yes. It describes the different aspects of packaging well. However still unclear how to use it and what the benefits are in practice.

Additional comments - None

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
Framework gave a lot of good points and angles for evaluating the package. However, some of the metrics were difficult or were not suitable for the situation (also some were metrics, some were tools). Could have separate versions for different phases of design process.
Q. Have your perceptions of the framework's usefulness changed?
The versatility of the framework has become more obvious.

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
- Not answered
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
Not answered

Additional feedback - Good work!

1. Initial Impressions:

Arla Ihana
yoghurt

Q. Is this your first time seeing the Packaging ROI Framework - No

I don't understand it at all	1	2	3	4	(5)	I understand it completely
Visually simple	1	(2)	3	4	5	Visually complex

Comments - Framework makes sense, but I almost missed Design agencies, perhaps that wheel could be a bit bigger. Some colour contrast could be added. How are colors related? Desirability and feasibility can also have cost/profit (or +/-)

2. Impression Update:

My initial understanding was incorrect	1	2	(3)	4	5	My initial understanding was correct
Now, I don't understand the framework at all	1	2	3	(4)	5	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
Yes. But when you present it, go through one circle or segment at a time. Cost and profit can be related to all stake-holders and phases (i.e cost vs. benefit)

Additional comments - Where does cost and profit actually start(stand)?

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
Practically yes. But found using the cards unnecessarily burdensome. I could have answered the brief probably before by intuition and just looking at the circle and sectors.
Q. Have your perceptions of the framework's usefulness changed?
A bit. Once I ran into some challenges. It's a great conversation starter but doesn't yet show the interaction. It is a good start.

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
Yes, perhaps a bit too many similar cards - complexity.
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
To discuss to a team of designers about a project or to share a common understanding about a project between various stakeholders working on it.

Additional feedback - Thank you. I enjoyed it. Good work!

1. Initial Impressions:

Arla Ihana
yoghurt

Q. Is this your first time seeing the Packaging ROI Framework - No

I don't understand it at all	1	2	3	(4)	5	I understand it completely
Visually simple	1	2	(3)	4	5	Visually complex

Comments - Visualization could be better, I mean the structure of the table in order to communicate better.

2. Impression Update:

My initial understanding was incorrect	1	2	3	(4)	5	My initial understanding was correct
Now, I don't understand the framework at all	1	2	3	4	(5)	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
Absolutely it is useful, because it gives a comprehensive look at the value cycle players.

Additional comments - None

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
Partly yes. The thing is that there are so many other aspects and features to think of when you start designing the project/packaging design.
Q. Have your perceptions of the framework's usefulness changed?
A little bit yes. But the packaging cycle table is very good. I like it very much. E.g In digital format you could add layers which would give you more flexibility and more perspective in various starting points, agendas etc. After this development it would be perfect.

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
Partly yes it was a useful format for using the framework and yes there would be another useful format. The questions are important here. I ,find them partly too similar in different categories. Also I would simplify the questions.
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
Absolutely yes, I would use it for a similar packaging evaluation/analysis.

Additional feedback - Congrats for your great work!

1. Initial Impressions:

Arla Ihana yoghurt

Q. Is this your first time seeing the Packaging ROI Framework - Yes

I don't understand it at all	1 2 (3) 4 5	I understand it completely
Visually simple	(1) 2 3 4 5	Visually complex

Comments - Colours could be more contrast so that layers are easier to see. Initially there doesn't seem to be a social impact covered - I could be wrong here. The name "packaging value cycle" seems close to "value chain".

2. Impression Update:

My initial understanding was incorrect	1 2 3 4 (5)	My initial understanding was correct
Now, I don't understand the framework at all	1 2 3 (4) 5	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
More understanding of the brand owners concern is needed. With co-creation this table would look different. Logistics will become more important with event of on-line purchasing.

Additional comments - This diagram is a great foundation, but more are needed to focus on different " Business models" or "Key Business" activities. Three tools needed - Before, during and after. Agendas - Designers, converters, consumers etc.

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
No - it need further development. Focus should be on 1) Interactivity of "Cycle" digital media, 2) Timing: when to introduce the tool before, during and after, 3) Agenda/briefing where the project starts and who will.
Q. Have your perceptions of the framework's usefulness changed?
Yes but it is a tool very much in development. Great tool but needs to understand where it could be useful.

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
Digital or Game/cards/ideation
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
Yes - for NPD, briefing, meeting.

Additional feedback - Commercialize it! - A tool for every stakeholder. Keep it simple. Reduce the information but don't lose the important points. Bring social impact into play.

1. Initial Impressions:

Arla Ihana
yoghurt

Q. Is this your first time seeing the Packaging ROI Framework - Yes

I don't understand it at all	1	2	3	(4)	5	I understand it completely
Visually simple	1	(2)	3	4	5	Visually complex

Comments - Does the overlapping circles imply that you can turn them in relation to each other. Is this intentional? Could be a great idea.

2. Impression Update:

My initial understanding was incorrect	1	2	(3)	4	5	My initial understanding was correct
Now, I don't understand the framework at all	1	2	3	(4)	5	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
As a visual mode, it answers well to why/what/who in explaining the different actors, aspects and forces. But I think there are many more combinations by which value is created.

Additional comments - Not sure if the aspects are of the same value or of the same category, like Logistics, sustainability and brand communication.

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
Some more facilitation of the use of the tool would be great.
Q. Have your perceptions of the framework's usefulness changed?
The tool could be a very powerful framework to visualize the dimensions of packaging design development. Intrigued to see how it can be developed in the future

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
Not answered
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
Not answered

Additional feedback - None

1. Initial Impressions:

BookBox

Q. Is this your first time seeing the Packaging ROI Framework - Yes

I don't understand it at all	1 2 3 (4) 5	I understand it completely
Visually simple	1 (2) 3 4 5	Visually complex

Comments - None.

2. Impression Update:

My initial understanding was incorrect	1 2 3 (4) 5	My initial understanding was correct
Now, I don't understand the framework at all	1 2 3 4 (5)	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
There isn't really anything new (for holistic designer) but it is good to have a visualization.

Additional comments - None

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
Yes. I think there is a lot that is good to remember and discuss about. So the framework works at least as a list of things you have to think about and take into consideration.
Q. Have your perceptions of the framework's usefulness changed?
Yes.

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
Not answered
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
Not answered

Additional feedback - None.

1. Initial Impressions:

Q. Is this your first time seeing the Packaging ROI Framework - No

BookBox

I don't understand it at all	1	2	3	(4)	5	I understand it completely
Visually simple	1	2	3	(4)	5	Visually complex

Comments - Does the aspect mentioned cover all phases? I don't think so. Production is different from logistics, maybe term is as 'operations'. Where does design and development fit in the cycle?

2. Impression Update:

My initial understanding was incorrect	1	2	3	4	(5)	My initial understanding was correct
Now, I don't understand the framework at all	1	2	3	(4)	5	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
Helps seeing the bigger picture. All players, perspectives and roles of other departments.

Additional comments - Does it cover all players in market? If so, how would you categorise multi players. Change words 'Costs and Profit' to ' Investment and Returns'.

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
Yes helps in answering the brief. Walkthrough the various attributes, aspects. Some kind of inputs might help in better evaluation. Space to list out/rank key attributes.

Q. Have your perceptions of the framework's usefulness changed?
Not much.

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
Not answered
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
Not answered

Additional feedback - None.

1. Initial Impressions:

BookBox

Q. Is this your first time seeing the Packaging ROI Framework - Yes

I don't understand it at all	1	2	(3)	4	5	I understand it completely
Visually simple	1	(2)	3	4	5	Visually complex

Comments - The hierarchy with the text is logical and also the way of presenting. It is good that you have separated the why, what and who questions on the left side. It would be interesting to know how you have divided the sections.

2. Impression Update:

My initial understanding was incorrect	1	2	3	(4)	5	My initial understanding was correct
Now, I don't understand the framework at all	1	2	3	4	(5)	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
Yes. I think it would be useful for presenting a case for the client. Sometimes it is hard to communicate shortly why focusing on the packaging is important and what aspects should be taken into account when starting a new project.
Additional comments - Now I understand better how the relations of the framework work. I'm still a bit confused what does converter mean though.

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
Framework was easily forgotten while having the discussion since the areas are quite familiar for a packaging designer. But it was still a good reminder for the discussion and to guarantee that all of the topics are covered. I would also use some sort of checklist version of this framework.
Q. Have your perceptions of the framework's usefulness changed?
Not really, at least not to a negative direction. It is not easy to come up with any topics that are not covered in the framework.

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
It was a bit confusing in the beginning to understand the right way to set the cards on the framework. I had an issue of thinking that the line was on the timeline instead of prioritizing the cards.
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
It would be interesting to see how the framework is adapted to other packages. Our topic was so heavily based on the logistics and production side.

Additional feedback - Well facilitated workshop! Thanks for the afternoon and good luck with the project.

Initial Impressions:

Q. Is this your first time seeing the Packaging ROI Framework - No

BookBox

I don't understand it at all	1	2	3	4	(5)	I understand it completely
Visually simple	1	2	3	(4)	5	Visually complex

Comments - Easy to understand. We has a private meeting before the workshop. All doubts and unclarities were discussed during the meeting session. The idea which was created during previous session is well developed into physical form.

2. Impression Update:

My initial understanding was incorrect	1	2	3	(4)	5	My initial understanding was correct
Now, I don't understand the framework at all	1	2	3	4	(5)	Now, I understand the framework well

Q. Do you think the framework would be useful to you? Why or why not?
Yes the framework puts my own thinking of practice into a form of theory. This makes it more easy to explain to stakeholders.

Additional comments - I would welcome a case where the theory has less process i.e the cost vs gain has been calculated. Can you put a price tag to different costs? How about how to mention gain? Increase in sales? profitability?

3. Testing the framework:

Q. Did the framework help you in answering the brief? Was there anything missing?
It was useful, considering different aspects. The time element was not there - one should be more orderly = one segment at a time.
Q. Have your perceptions of the framework's usefulness changed?
No. I find it really useful.

4. Testing the format

Q. Were the cards a useful format for using the framework? Would there be another useful format for the framework?
With more practice and guided way to use the cards
Q. Now that you have used the framework, do you think you would use it again? In which scenarios?
Yes, in different phases on packaging projects.

Additional feedback - The exercise really helped in thinking and improving the concept. Time element needs to be added.