

HOW SHOULD NESPRESSO CAPITALIZE ON THE OPPORTUNITIES OF THE CIRCULAR ECONOMY TO BUILD A PREMIUM PROPOSITION FOR ASPIRATIONAL CONSUMERS?



NESPRESSO MBA CHALLENGE 2015



INTRODUCTION

"Our sustainability approach has always been designed to do more than simply minimize impacts," said Jean-Marc Duvoisin, Nestlé Nespresso CEO, at a major press event in Milan on August 27, 2014. At that event, held on the same day as the *Nespresso* Sustainability Advisory Board meeting, Duvoisin announced a more aspiring long-term sustainability ambition for the company "providing the highest quality and most sustainable portioned coffee worldwide."

The *Nespresso* sustainability team was accustomed to challenges, continuous improvement and long-term commitments across the entire value chain, from the coffee tree to the cup of coffee. Their new vision was based on their past ten years of work, but also went a step further, making ambitious new commitments and going beyond traditional sustainability programs. As part of the announcement in Milan of the new *Nespresso* sustainability strategy, The Positive Cup, Duvoisin said: "The development of even more innovative programs with our partners demonstrates our commitment to creating shared value and generating positive impacts for all stakeholders across the entire value chain." *Nespresso's* vision for its customer experience became: "Each cup of *Nespresso* is an extraordinary coffee experience, creating pleasure for the consumers and positive benefits for wider society and the environment."

Nespresso had made good progress reaching in 2013 each of its sustainability commitments, which had been established in 2009. The company had exceeded its goals of sourcing 80% of its coffee from its AAA Sustainable Quality™ Program, putting in place the capacity to recycle over 75% of *Nespresso* capsules sold worldwide and reducing the carbon footprint of a cup of *Nespresso* coffee by 20%.

While the new vision was clear, it also seemed very ambitious. Was it even possible to generate positive impact? Or achieve zero negative impact? After all, physical limitations existed when growing, processing and transporting coffee. The company believed that some of the key operational dimensions to deliver the Positive Cup were as follows:

- a. To build on current projects to maximize impact (for instance reach 100% AAA sourcing, expand programs in place to address carbon impact and water use in coffee growing regions as well as driving Real Farmer Income® initiatives to make coffee an increasingly viable "shared value" business for its 60,000 mostly small-scale coffee farmers).
- b. To leverage the innovative game changer projects announced in 2013 (e.g. The Farmer Future Program expanding the AAA Program in Ethiopia and Kenya as well as reviving high quality coffee production in South Sudan).

- c. To build on precision consumption with lower waste due to the portioned system.
- d. To create options for positive or even net positive consumption.¹

The *Nespresso* sustainability team believed the customer-facing part of the business – machines, capsules and service – presented an important challenge. “How could a fast moving consumer goods company, whose successful business model is based on delivering billions of units of product each year for use in specialized home or office-based machines in more than 60 different countries be made “positive”?” This was going to take some out-of-the-box thinking and a substantial supply of *Nespresso* Grands Crus to solve.

NESTLE NESPRESSO S.A.

HISTORY

Nespresso’s story goes back to 1986 with a simple, but revolutionary, idea: enable anyone to create the perfect cup of coffee just like skilled baristas. The core concepts of the brand include the machine and capsule design interacting to deliver a consistent cup of high quality coffee from the comfort of home, as well as customized customer service. Since its origin, the company, an autonomous, globally managed business of the Nestlé group with premium positioning, experienced rapid market growth of over 20% in past years, with double-digit sales increases in all markets around the globe.

In 2000 *Nespresso* had only 1 boutique store and 331 employees. End of 2013, it was present in 60 countries worldwide, with more than 9,500 employees and more than 320 boutique stores selling coffee, machines and accessories.

Nespresso had more than 10 million Club Members (registered customers), more than 2.5 million Facebook fans and over 250,000 customers visiting their desktop and mobile e-commerce boutique platforms every day.² *Nespresso* was the worldwide leader of the “portioned coffee” industry having built a dominant position in the \$10bn capsule market, with estimated annual sales of about SFr4bn (\$4.5bn).³

The success of this history is built on the company’s three Key Growth Drivers:

- Create the highest quality Grand Cru coffees by ensuring only the highest quality coffee makes its way to Club Members.
- Build a loyal consumer relationship through regular interaction enabling *Nespresso* to meet or anticipate consumer expectations.
- Operate the business in a sustainable manner through efforts, such as the Positive Cup Program (See backgrounder “*Nespresso* Sustainability MBA Challenge 2015” for more details on the company profile).

FUTURE DIRECTION

Since 1986, *Nespresso* has grounded its position in Western European markets and expanded its presence in the Asia Pacific and Americas regions. The company’s non-European sales have tripled over the last five years.⁴

Nonetheless, *Nespresso* still sees a huge growth opportunity in Europe, despite the continent’s struggle with recession, particularly in the UK, Italy, Germany and Russia, where household penetration by *Nespresso* machines is only about one-fifth of that in coffee-slaking France.

1. Net Positive can be defined as adding greater value to society than you take away. It is a shift towards “sustainability to restore”, from “sustainability to reduce”. This should mean “the more product you sell, the better the society/environment you leave behind” (Source: Greenmondays & Fishburn Hedges Group, Crowdsourced Green Mondays: Net Positive report, April 2013 <http://www.green-mondays.com/admin/uploads/media/NetPositive>)
 2. *Nespresso* machines are distributed by other partners, such as Amazon or department stores, for example Bed, Bath and Beyond and Macy’s in the USA, or Galeria Kaufhof and Conforama in Europe.
 3. Financial Times, <http://www.ft.com/intl/cms/s/0/b1f1c132-67da-11e3-8ada-00144feabdc0.html#axzz3OF5saC1L>, January 2014.
 4. Nestlé *Nespresso*, February 2013.

However, the company expects extensive growth from the Chinese and the Latin American markets, and in particular from the United States. There, the company launched VertuoLine, which it hopes will revolutionize the coffee segment and add a new dimension to premium home-brewing.

NESPRESSO IN THE PORTIONED COFFEE BUSINESS

Nespresso has brought the portioned coffee business model to the global market, establishing a premium brand for coffee connoisseurs worldwide. In this model consumers select a branded “system” of portioned coffee by purchasing a machine for their home or office. The consumer uses the respective coffee portion - in pod, capsule or cartridge form, and the machine automatically prepares the finished coffee, ready to drink. *Nespresso* coffee machines are specifically developed to optimally reveal and enhance the aroma and taste of the *Nespresso* Grands Crus. The customer then purchases the portioned coffee from retail sales channels that offer the Grands Crus. Machines last several years and tend to be priced in the US\$99 to US\$449 price range for home use.

The portioned coffee industry primarily makes money through sales of portioned coffee. The home or office-based machines are supposed to “lock in” the customer to a specific brand. Most consumers only have one brand of machines at their home or office, so the branded companies need to compete for customer loyalty and then offer a convincing and attractive value proposition to drive selection and purchase. Companies compete on various value characteristics, primarily: quality of coffee, price/value of coffee, variety of available taste profiles, ability to easily purchase portioned coffee for their machines, style and attractiveness of the machines, ease of use and reliability of the machines and customer service (for purchasing, questions, problems).

The *Nespresso* value proposition is based on three pillars: highest quality coffees, innovative stylish machines and personalized services. *Nespresso* also takes a long-term, holistic approach to sustainability. It is committed to ensure sustainability across all operations, from coffee sourcing via its AAA Program, a unique sourcing model, to capsule recycling, setting clear targets and seeking to create shared value for the business and for society as a whole.

The brand welcomes clients and invites them in to an exclusive relationship.⁵ Television, social media and print advertising featuring noted brand ambassadors, such as George Clooney and Penelope Cruz, help position *Nespresso* as an attractive, up-scale, high-quality coffee brand. Consumers purchase a machine of their choice - either online, at a *Nespresso* boutique or another retail outlet - and automatically become members of the *Nespresso* Club (*Nespresso*'s consumer channel).

Nespresso serves its entire retail channel (Club Members) through its own boutiques and online store. A 24/7 service, staffed by more than 1,400 on-call *Nespresso* coffee specialists, allows Club Members to order capsules online or by phone, ask questions related to their use of *Nespresso* products and address any problems such as sending machines for repair. This retail approach enables *Nespresso* to keep retail margins “in-house” and maintain close contact with its end customers. However, it also requires enormous investment in human resources and bandwidth (data and voice) and means they can not leverage retailer capacity to scale-up sales and markets.⁶

Nespresso's differentiation and revenue stream strategy is evident across its value chain. The company sources coffee only from those regions that offer unique aroma and flavor characteristics supporting its value/quality proposition and

5. Annex 1 contains detailed information on the different touchpoints *Nespresso* customers currently have with the brand.

6. Annex 2 gives estimated figures on *Nespresso*'s market trend and growth.

engages in intensive cooperation and continuous improvement programs to maintain loyalty and increase volumes of those rare, high-quality coffees from farmers in the selected regions. *Nespresso* processes all of its coffees in specially-designed high-tech processing facilities that employ a variety of technologies to ensure that capsules are filled and hermetically sealed in an oxygen free environment for an optimum cup quality.⁷ Its machines are stylish and innovative and allow the quality promise to be fulfilled in every home, with every cup, every time.

COMPETITORS

Nespresso's success has drawn the attention of competitors. Portioned coffee is now a robust and thriving business, and numerous companies have entered the market in recent years, offering different value propositions through price, quality and other attributes.

Most competitors have entered the market with complete systems – purpose-built machines with dedicated portioned coffee. More recently, however, a number of competitors have begun making portioned coffee capsules (or pods) that are compatible with *Nespresso's* machines. As *Nespresso's* patent on capsule technology expired, a number of companies began introducing alternative capsules compatible with the *Nespresso* system, including among other: plastic capsules, biodegradable capsules, organic, flavored and origin-specific coffees. One competitor even produces an empty compatible capsule that the consumer fills with the coffee of his/her choice. Some websites only sell *Nespresso*-compatible capsules. As discussed below, many of these competing capsules seek to exploit perceived weaknesses in *Nespresso's* capsule material selection (aluminum) and sustainability “certifications.”

NESPRESSO'S INDUSTRIAL ECOLOGY

FROM FARM TO CUP

Coffee is grown in higher altitudes in the tropics and processed locally into stable and transportable “green coffee.” *Nespresso* coffee is then transported by sea and rail from *Nespresso* coffee growing regions to its two factories in Switzerland.

At the factories, *Nespresso* coffee is roasted, portioned into capsules, packed into 10-capsule sleeves and then packed into shipping boxes to fulfill pre-established orders. Club Members, who ordered by phone or internet, receive their order via land or air transport within 1 to 3 days (depending on the market) either directly from the factory or from fulfillment centers. Boutiques receive their capsules in larger quantities through the same factory process.

For use at home, Club Members place water in their *Nespresso* machine, turn on the machine, insert a capsule, push a button and the machine fills the cup.⁸

LIFE CYCLE ASSESSMENT

Nespresso commissioned different Life Cycle Assessments (LCA)⁹ to understand the environmental impacts of its entire coffee chain, particularly with regard to energy and greenhouse gas emissions. Some of the main findings are:

- Benchmarking with a cup of *Nespresso* coffee across the value chain, the LCA showed that the highest volumes of greenhouse gas emissions came from growing coffee and using the *Nespresso* machine.

7. For more information, please refer to: <http://valuechaingeneration.com/2011/12/28/from-business-model-to-value-chain-impact-revisiting-the-nespresso-case/>

8. See Annex 3 for a more detailed overview of the *Nespresso* value chain and Annex 4 for a brief understanding of *Nespresso's* industrial ecology, including inbound & outbound logistics.

9. A breakdown by activity of *Nespresso* system's carbon footprint for the entire value chain is detailed in Annex 5, among other LCA study conclusions.

- Overall, the LCAs showed that portioned coffee systems have an advantage of consuming precisely the right amount of energy, water and coffee for the final coffee cup, thereby avoiding overdosing and waste.
- In 2011, the LCA expert company Quantis compared various end-of-life scenarios for different kinds of capsules to make an espresso coffee using a *Nespresso* machine. The study showed that both the material and the disposal of the capsules affected their environmental impacts. The LCA determined that, of the four capsule options assessed, an aluminum *Nespresso* capsule that is recycled after use had the lowest environmental impact.

Based on the study results, *Nespresso* worked on improving its environmental performance in every area of business: coffee cultivation, machine innovation, business operations and used capsule recycling. Through these efforts, *Nespresso* has already reduced the carbon footprint of a cup of coffee by 20.7% since 2008.

MACHINES

The patented *Nespresso* system uses a unique extraction method encased in stylish machines designed to extract consistently high quality coffees from exceptional coffee blends in portioned aluminum capsules. Beyond their attractive design, the machines are also a rather sophisticated piece of engineering, with many components created and even patented specifically for this use. They are also relatively complicated to manufacture, since they have to produce the highest quality cup in a very small device.¹⁰ *Nespresso* owns all patents and related intellectual property on the machines, and outsources or licenses manufacturing of the coffee machines to third-party manufacturers under “at cost” technology licensing. Machines are sold by

Nespresso through their sales channels, and under a separate license agreement, under different branded names (such as Krups, Magimix and others) through online and Bricks and Mortar retail stores.

While *Nespresso* maintains machine production cost information as confidential, for this Case Study it is assumed that they would receive little to no profit margin on the sale of machines for both operational and commercial reasons. Operationally, materials and components, the manufacturing style and design aspects and the costs of sourcing and transportation are substantially complex. Commercially, portioned coffee companies want to make sure that the machine’s purchase price does not create obstacles or disincentives to their brand. As proof, while many companies have entered the market with new capsules for *Nespresso* machines, no relevant business has introduced a new machine compatible with *Nespresso* capsules so far.

The different machines offered by *Nespresso* have been designed for different types and intensities of use.¹¹

CAPSULES

Capsule technology is a critical aspect of *Nespresso*’s success in providing consistently high cup quality. Perfectly ground and roasted coffee is packed in *Nespresso*’s now-iconic aluminum capsules hermetically sealed to protect the freshly ground coffee from air, light and humidity.¹² Aluminum was selected as *Nespresso*’s preferred capsule material, for a number of reasons, including:

- Its ability to maintain a consistent, air-tight seal for very long periods of time (several years with no noticeable deterioration).
- Aluminum is inert and does not affect the coffee aroma or flavor in any way.

10. As opposed to traditional espresso machines, *Nespresso* machines introduced several complexities, such as the miniaturization of powerful pressure pumps, rapidness of the water spraying mechanism and reliability in the product’s consistency.

11. Annexes 6, 7 and 8 provide detailed information on the different machines, including technical information and specifications.

12. When exposed to oxygen, roasted coffee rapidly loses its intensity and quality, particularly its aroma characteristics.

- It can be easily shaped, styled and colored.
- It is readily available and does not come from a scarce resource.
- It is infinitely recyclable, and aluminum recycling capacity is present worldwide.
- When recycled, aluminum becomes a very low footprint packaging material.¹³

CAPSULE RECYCLING

In 1991 *Nespresso* initiated its capsule recycling program in Switzerland and since then has invested heavily to set up capsule recycling options in its other markets. End of 2013, *Nespresso* had in place over 14,000 dedicated capsule collection points to make it easier and convenient for Club Members to recycle, including:

- Collection points in *Nespresso* boutiques.
- Collection points at community waste recycling centers.
- Doorstep collection of used capsules when new capsules are delivered, through the *Nespresso* Recycling@Home initiative.
- Collection points at *Nespresso* retail partner stores and at pick-up points.

These recycling options vary from country to country because of different national packaging recycling systems. *Nespresso* works with a range of partners globally to find appropriate solutions market by market. As a clear example, in 2009 the company set up CELAA, a group in France committed to improving the recycling of small packs made of aluminum and steel. There, *Nespresso* invested in pilot projects with the local recycling agency, EcoEmballage, to install eddy current equipment to retrieve small aluminum packaging.

In other countries, such as Germany, Sweden and Finland, the existing national packaging recycling scheme is aligned with the European Green Dot program, allowing used *Nespresso* capsules to be sorted with other lightweight metal packaging and then melted for reuse. In countries where the national recycling system does not have the needed technology, *Nespresso* collection points bring capsules to appropriate recycling and processing plants.¹⁴

The very nature of recycling requires consumers to take direct action by ensuring that their used capsules enter a recycling system. *Nespresso* sees its primary responsibility as creating the capacity to recycle capsules and making it as simple as possible for Club Members to participate in recycling. By the end of 2013, *Nespresso* had established capacity to recycle 80% of its capsules across 30 countries. Because of the various collection systems in place, actual recycling rates are difficult to be accurately calculated and very “market maturity dependent.” *Nespresso* is also evaluating the possibility of transforming recycled capsules into new capsules; initial tests are positive.

LOOKING TO THE “CIRCULAR ECONOMY”

Nespresso became one of the early members of the Circular Economy 100 Initiative (CE 100), led by the Ellen MacArthur Foundation.¹⁵ The CE 100 is a global platform bringing together leading companies and emerging innovators to accelerate the transition to a “circular economy.” The Foundation’s goal for the CE 100 is “to support business in unlocking this commercial opportunity and to enable them to benefit from subsequent first mover advantages.”

According to the Foundation, the circular economy refers to “an industrial economy that is restorative by intention; aims to rely on renewable energy; minimizes, tracks, and hopefully eliminates the use of toxic chemicals; and eradicates waste through careful design.”

13. Annex 9 provides more detailed information on the capsules and material selection.

14. Annex 10 provides additional information on *Nespresso* capsule collection capacity.

15. Please refer to: <http://www.ellenmacarthurfoundation.org/business/ce100>

The circular economy model contrasts with the traditional linear model of “take, make, and waste.” Natural resource scarcity has led to steep price rises and volatility, adding uncertainty and increasing the cost of hedging against resource-related risks.

In contrast to current practice referred as the linear economy, the circular economy is based on a few simple alternative principles:

- **Design out waste.** Waste does not exist when the biological and technical components of a product are designed by intention to fit within a biological or technical materials cycle.
- **Build resilience through diversity.** Modularity, versatility, and adaptability are prized features that need to be prioritized in an uncertain and fast-evolving world.
- **Work towards using energy from renewable sources.** Systems should ultimately aim to run on renewable energy—enabled by the reduced threshold energy levels required by a restorative, circular economy.
- **Think in “systems”.** The ability to understand how parts influence one another within a whole, and the relationship of the whole to the parts, is crucial.
- **Think in cascades.** For biological materials, the essence of value creation lies in the opportunity to extract additional value from products and materials by cascading them through other applications.¹⁶

Leading thinkers in the field see opportunities for companies seeking to decouple their revenue stream from their material inputs. After studying the topic, participating in events and working within the CE 100 groups, the *Nespresso* sustainability

team strongly believes that these circular economy principles could bring a new and interesting perspective to analyze and adapt the company’s business model in the three customer-facing components of the *Nespresso* System: machines, capsules and service.

CONSUMER RELATIONSHIP: TRENDS, AWARENESS AND RAPIDLY CHANGING BEHAVIOR

Since its founding, *Nespresso*’s brand attributes have positioned it as an attractive and trust-worthy brand for a well-defined consumer profile: upmarket, slightly older coffee drinkers. Consistently, European espresso traditional markets have represented a significant proportion of total sales. Examining its growth perspectives, *Nespresso* – where over 70% of employees interacted directly with customers - identified an opportunity to serve “aspirational consumers: “people who enjoy quality goods and experiences, but in a responsible way.

“Aspirationalists are materialists who define themselves in part through brands, and yet, they believe they have a responsibility to purchase products that are good for the environment and society” says Eric Whan, Sustainability Director at GlobeScan, a leading research firm on global sustainability demand trends.

More than any other segment, aspirationalists, with an average age of 39 years old, care about style (65%), social status (52%) and equate shopping with happiness (70%). They are also among the most likely to believe that we need to “consume a lot less to improve the environment for future generations” (73%) and feel “a sense of responsibility to society” (73%). This segment is believed to be the largest consumer segment in Brazil, China and India.¹⁷ This segment’s sustainability awareness is not new, but as consumers, they have not yet translated

16. Annex 11 provides more detailed information on circular economy issues and opportunities. The circular economy logic also applies to platforms that may have some relevance for linking customer expectations, marketing and durable assets. See Annex 12 for one such example.

17. Please refer to: http://www.sustainablebrands.com/digital_learning/white-paper/rethinking-consumption-consumers-and-future-sustainability

their awareness into a stable shift in purchasing decisions.¹⁸

THE DEBATE BEGINS

Nespresso R&D, sustainability and planning teams all see the circular economy as providing important guiding principles for the coming decades, and expect Nestlé and other global leaders to increasingly embrace these concepts in the design of products and entire business models.

Through circular economy principles, the sustainability and international marketing teams see the potential for cost savings and risk reduction in an increasingly competitive market. But most importantly, for a marketing-driven consumer products company, they believe there should be opportunities to attract new Club Members, particularly younger consumers with more “aspirational” expectations for their preferred brands, and deepen the close relationship *Nespresso* seeks to create with its existing Club Members through unexplored service solutions.

In the long-term, *Nespresso* would like every aspect of its business to embrace circularity on its way to becoming a “Positive Cup.” It has been exploring this aspect for a little while. Everyone connected to this issue in the company recognizes that this is an exciting area to explore, but one with few obvious answers.

For example, the following comments portray a typical early meeting to discuss these issues:

A R&D team leader: “If the R&D, design and planning teams are designing machines based on circular economy principles – it will mean designing with different materials, simpler disassembly and re-use and other new features. As you know, capsule materials and design are constantly an R&D priority. But these changes take time to reach market, and we are in a very competitive marketplace.”

The Head of Sustainability stated: “From circular economy logic we know that technological improvements to machines and capsules represent only part of the equation. The biggest advances are going to come from new or different ways of doing business. This means rethinking relationships with manufacturing and distribution partners, examining outbound and inbound Club Member logistics, and most importantly, figuring out how to engage and please existing and new Club Members.”

“Right now, the areas that appear to require the most attention and offer the greatest potential from innovation are the customer-facing aspects of the business – machines, capsules and service. So let’s focus there, and see how far we can go.” added the International Marketing and Strategy Director.

An engineer from the machines team piped up: “Could we encourage our Club Members to keep their machines longer? – We know most are getting new machines long before their old ones reach the end of their useful life. If they keep the machines twice as long, that is half the waste and half the raw material input.”

A young colleague from the finance department added: “Machines are not the main driver of our margins, so does it really make sense to focus on them if people buy machines every year or every three years?”

A veteran Marketing & Sales Manager jumped in: “High quality, stylish and innovative machine design is an important part of our brand appeal. And remember that the machine is the consumer entry point – if a new customer does not buy a *Nespresso* machine, then we have no Club Member to buy capsules or engage with our brand. Our strategy of licensing our machines to kitchen equipment brands puts our machines in front of more potential Club Members. Attractive new machine models drive business.”

18. Annex 13 provides further information on consumer trends and behavior related to the sustainable coffee industry.

A Marketing Researcher added: "Remember that roughly half of our Club Members cite design and style as one of the principal drivers for choosing *Nespresso*- that is generally about brand image, but also a lot about the machines that people have in their homes and offices. Look at how our Club Members interact on Facebook and Twitter when we introduce a new machine."

A member of the sustainability team responded: "There is no doubt design and style are important drivers, but we also know that the vast majority of our current Club Members expect us to be very environmentally and socially responsible, and nearly one quarter already states sustainability as the principal driver of their decision-making. The trends on "aspirational" customers are pretty compelling, particularly in important growth markets like China and India."

One of the social media managers further explained: "Nowadays social media technologies and networks are fantastic platforms to connect people in viral incentives around sustainability and promote innovative solutions from brands. Charismatic key opinion leaders will influence aspirational young prospects and actual Club Members to connect all together around a new way of buying, a new way of selling, as well a new way of engaging to save waste, with potential to maximize positive impacts for the planet, while experiencing premiumness."

The discussion and debate continued like this for several hours. There were similar discussions on: logistics (lower impact transportation and integration of reverse logistics), expanded machine collection, different relationships with machine manufacturers and retail licensees, different contractual relationships with Club Members, such as renting or leasing of machines, even sourcing ("Would buying coffee grown closer to market and processing it there contribute?").

The discussion was creative and interesting, but generally inconclusive. The one definitive conclusion was: "This would be a great topic for the 2015 *Nespresso* MBA Challenge."

THE CHALLENGE

THE 2015 *NESPRESSO* CHALLENGE IS:

"How should *Nespresso* capitalize on the opportunities of the circular economy to build a premium proposition for aspirational consumers?"

For *Nespresso*, there are three **non-negotiable points** in solving this Challenge:

- *Nespresso* will not abandon the underlying concept of the portioned system – a machine and capsule combination system that ensures Club Members the highest quality cup of coffee, every time, in their home or office.
- Aluminum will continue to be the capsule material for the foreseeable future. Only aluminum is capable of providing the cup quality *Nespresso* demands for its Club Members. And, in spite of criticism about aluminum waste, it is recyclable and more climate- and waste-management-friendly than all current alternatives.
- Coffee will continue to be sourced from *Nespresso* selected growing regions around the world. These regions possess the right taste and aroma characteristics, and *Nespresso* has made commitments to the growing communities and to Nestlé that they will continue to invest in and source from these regions as part of their "Creating Shared Value" strategy.

Everything else is considered "fair game."

INSTRUCTIONS

Keep in mind, that this is a business challenge, not a scientific or engineering challenge. It is about building a value proposition for potential and existing Club Members. The solution must include and explain, at a minimum.

- What is the new value proposition?
- Who would be the target market/segment? And how would the proposition be positioned for that market?
- How would the approach/proposition be communicated and sold (channels, commercial package, tailoring of message, social media campaigns, etc.)?
- How would the proposition relate to current or expected competitor value propositions?
- What implications or directions does this proposition suggest for future R&D efforts on machines, capsules, logistics and other relevant areas?

JUDGING

MBA Challenge solutions are judged based on four criteria that generally evaluate to what extent the proposing team makes compelling arguments (with supporting qualitative and quantitative analysis) as to how and why this proposition will create shared value for *Nespresso*, Club Members and other key stakeholders.

1. Demonstrated understanding of the case and the situation presented.
2. Creativity of the proposed solution.
3. Feasibility of the proposed solution for implementation.
4. Quality of the analysis and effective use of data.

ANNEXES

ANNEX 1. THE *NESPRESSO* CUSTOMER CYCLE

Nespresso consumers have different options when purchasing a *Nespresso* machine or capsules. Capsules are only sold in *Nespresso* points of sales: boutiques, Customers Relationship Centers, 24 hour e-commerce platform. Meanwhile, machines are sold also in these direct channels plus indirect retailers (retail outlets, department stores, country specific partners for machine distribution, etc.)

Nespresso sells a number of different machines. Several of these machines carry the brand names of well-known kitchen equipment manufacturers, such as Krups, Magimix, and KitchenAid and are produced by several machine manufacturers.

Once a customer acquires a *Nespresso* machine, he/she immediately becomes a Club Member and obtains a Member Card. The advantage of the card is to register each purchase, profiling the specific customer with details, such as purchase frequency, distribution channels used by the consumer, quantity and specific Grands Crus purchased, etc. This enables the targeting of specific needs and the customization of offers. When joining the Club, Club Members are able to receive exclusive services, such as coffee tasting advices based on their preferences, as well as regular information on new products and the *Nespresso* magazine (NMag).

Nespresso customers can purchase and may receive free standard shipping on qualifying orders (depending on the country), express delivery or they can pick it up at the selected boutique store.

In the case that machine assistance is needed, *Nespresso* offers clients some basic troubleshooting on their website. Nevertheless, when a consumer needs more specific technical assistance, *Nespresso* provides a pick-up service (through UPS) and offers a loan machine to use while the customer's machine is being repaired at the After Sales Center. After-sales repair service includes a 2-5 year warranty (for free) depending on the model and country. After this period, the client can still use these services at their own expense.

The machines are designed to brew around 10,000 servings in a lifetime (as an assumption for this Case Study);¹⁹ nevertheless, current consumers frequently change appliances more often. Consumers have several options once they decide to give up their machine. In case consumers want to recycle their machines, they can drop them off at a *Nespresso* boutique store, and *Nespresso* will pay the transportation costs for the shipment to the municipal waste management center. Customers also have the option to take it there themselves. At the waste management center the machines are dismantled into different components, and 50-60% of the machines weight will be recycled. *Nespresso* customers have easier access to recycling in Europe because of their Waste of Electrical and Electronic Equipment scheme (WEEE),²⁰ in which Member States ensure that the collection and transport of separately collected WEEE is carried out in such a way to re-use, recycle and confine hazardous substances.²¹

In these countries the machines are transferred to a treatment facility where all Electrical and Electronic Equipment are destroyed together into smaller parts. At this point different technologies are used to separate different types of materials such as plastics, ferrous metals and non ferrous metals amongst others. Some facilities then process the plastic flow to separate the different plastics as much as they can, while some others may do it also for the non ferrous metals. However, the separation process is not perfect; the outcome is a new material with different technical, usually degraded characteristics.

Nespresso explores on a market level innovative approaches to its machines end of life management. In Israel for instance, *Nespresso* works with Ecommunity Group – a social enterprise that handles the recycling of electronic waste providing employment opportunities and funding for rehabilitation for disabled and special needs populations. They transform technological trash into usable parts and wholes, which requires lots of mechanical precision and affinity that can be very therapeutic for these employees and pay their due wage.

19. For technical specification of *Nespresso* machines please refer to Annex 8.

20. Please refer to: http://ec.europa.eu/environment/waste/weee/index_en.htm

21. Please refer to: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012L0019>

ANNEX 2. ESTIMATED FIGURES ON NESPRESSO'S MARKET TREND AND GROWTH

Note: The following figures, not coming from *Nespresso*, have been estimated by external sources. They are not validated or endorsed by *Nespresso*. They are provided as assumptions for your thoughts.

<p>NESPRESSO REVENUE</p>	<p>According to the Financial Times <i>Nespresso's</i> estimated revenue for 2014 was \$4.5 billion which according to Bloomberg News this represents about 4% of Nestlé's sales.</p> <p style="text-align: right;"> VISIT REFERENCE LINK A VISIT REFERENCE LINK B </p>
<p>MARKET SHARE</p>	<p>According to Reuters, the global leader is Nestlé SA, whose <i>Nespresso</i> system holds a 35% share. It is followed by Sara Lee's Senseo brewers with 18%, and Kraft Foods Inc's Tassimo with 8%. Green Mountain, which controls more than three-quarters of the U.S. market, ranks fourth globally with less than 8%.</p> <p style="text-align: right;">VISIT REFERENCE LINK</p> <hr/> <p>According to the Financial Post, Nestlé has the lion's share of the single-serve market in Europe with roughly 70%, but in North America the industry is dominated by Green Mountain Coffee Roasters's Keurig system and Kraft's Tassimo brand.</p> <p style="text-align: right;">VISIT REFERENCE LINK</p> <hr/> <p>In the UK, <i>Nespresso</i> owns 34% of market shares and is the most known brand.</p> <p style="text-align: right;">VISIT REFERENCE LINK</p> <hr/> <p>According to Marketplace, <i>Nespresso's</i> market share in the US may have fallen in relation to the rapid growth of K-Cups, but <i>Nespresso</i> coffee and equipment sales are up 20%. Nevertheless, by 2014 <i>Nespresso</i> machines have just 3% of the U.S market share.</p> <p style="text-align: right;">VISIT REFERENCE LINK</p>
<p>MACHINES</p>	<p>Euromonitor conservatively predicts sales of U.S. single-serve espresso brewers will continue to increase by 6 million machines per year through 2017.</p> <p style="text-align: right;">VISIT REFERENCE LINK</p>
<p>CUPS SERVED</p>	<p>In 2010, the number of <i>Nespresso</i> cups consumed worldwide every minute increased from 10,000 (in 2009) to 12,300 cups. (<i>Nespresso</i> press release, March 2011).</p>
<p>CAPSULES</p>	<p><i>Nespresso's</i> customers bought 5,5 billion capsules in 2009, with sales in France alone by 22%, according to Euromonitor. According to Business week, in 2010 Nestlé had a capsule production capacity estimated at 9 billion capsules per year in 15 varieties.</p> <p style="text-align: right;">VISIT REFERENCE LINK</p> <hr/> <p>In 2013, <i>Nespresso</i> had an > 9 billion capsules production capacity (as an assumption for this Case Study).</p>
<p>CONSUMERS</p>	<p>In 2010, around 80% of <i>Nespresso's</i> 8 million customers were concentrated in Western Europe, with France as the biggest <i>Nespresso</i> market.</p> <p style="text-align: right;">VISIT REFERENCE LINK</p> <hr/> <p>In 2011, the number of <i>Nespresso</i> Club Members grew by over 35% to 10 million (<i>Nespresso</i> press release, March, 2011).</p> <hr/> <p>In 2013, <i>Nespresso</i> had >10 million Club Members (as an assumption for this Case Study).</p>

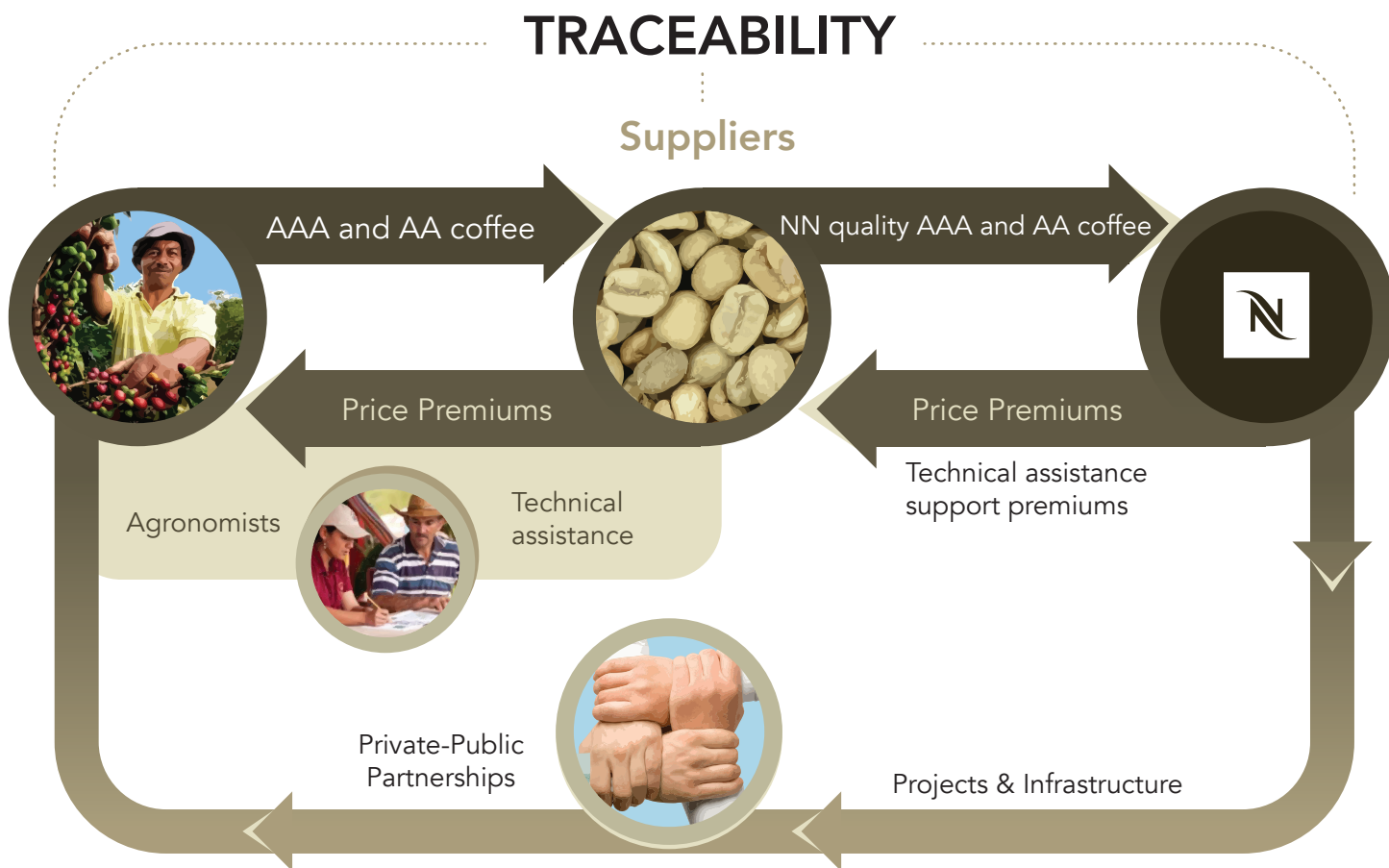
ANNEX 3. DESCRIPTION OF THE NESPRESSO VALUE CHAIN

Nespresso's coffee value chain includes a complex set of interactions between key actors involved in the process.

Farm to Nespresso

While each coffee supplying country has specific particularities in the structure of its value chain, there are some generic interactions and processes (see Figure 1).

Figure 1. Simplified value chain for sourcing Nespresso coffee



Source: CIMS, 2014.

More than 60,000 individual farmers ("producers") sell their coffee to "suppliers." Producers are mostly smallholders, often widely dispersed even within the same growing region. Some are individual farmers; others are organized into cooperatives or associations. Suppliers, including cooperatives, buyers or exporters, consolidate and process the coffee according to specific quality and sustainability standards established by Nespresso, resulting in AAA coffee. Depending on the country, coffee producers or suppliers perform the early stages of processing (farm milling). In both cases the supplier is responsible for delivering the specific quality requirements to Nespresso. Not all coffee makes the grade. On average, only 20% to 40% of a

farm's harvested beans will meet the standards required for *Nespresso* to purchase them. Approximately 260 agronomists from different suppliers in the sourcing countries work on behalf of *Nespresso* and the AAA Program.

A sophisticated online traceability system gives *Nespresso* a comprehensive picture and data set of every farmer supplying coffee. It also allows coffee growers to know who is buying their coffee, which is not always the case in conventional coffee supply chains.

ANNEX 4. INDUSTRIAL ECOLOGY OF *NESPRESSO*, INCLUDING INBOUND & OUTBOUND LOGISTICS

	GROW	DESIGN	PACK	SELL	MAKE	REMAKE
QUALITY	Business depends on the long-term supply of one critical agricultural raw material.	Design excellence and manufacturing efficiency have always been central to the <i>Nespresso</i> business.	Packaging is critical in ensuring product safety, quality and freshness.	Boutiques are a show case for products and give consumers the chance to experience <i>Nespresso</i> .	Club Members enjoy a direct relationship with <i>Nespresso</i> and rely on it to provide consistently high quality products and services.	Club Members expect responsible and convenient management of used capsules and machine parts, after use.
SUSTAINABLE QUALITY	Ensuring the sustainable production of coffee and a positive impact on grower communities is fundamental.	Increasingly designing with lifecycle in mind and manufacturing eco-efficiencies will play an important role.	A total life cycle approach to all packaging raw materials is equally critical, and supplier codes are in place to ensure sustainability standards.	Boutiques as a channel to share the company's work on sustainability. New boutique openings are increasingly being designed with sustainability at their core.	The nature of portioned coffee implies a lower footprint than other R&G preparations, due to what <i>Nespresso</i> calls "precision consumption".	<i>Nespresso</i> has pioneered tailor-made recycling solutions for capsules to ensure retrieval and reuse of precious resources.

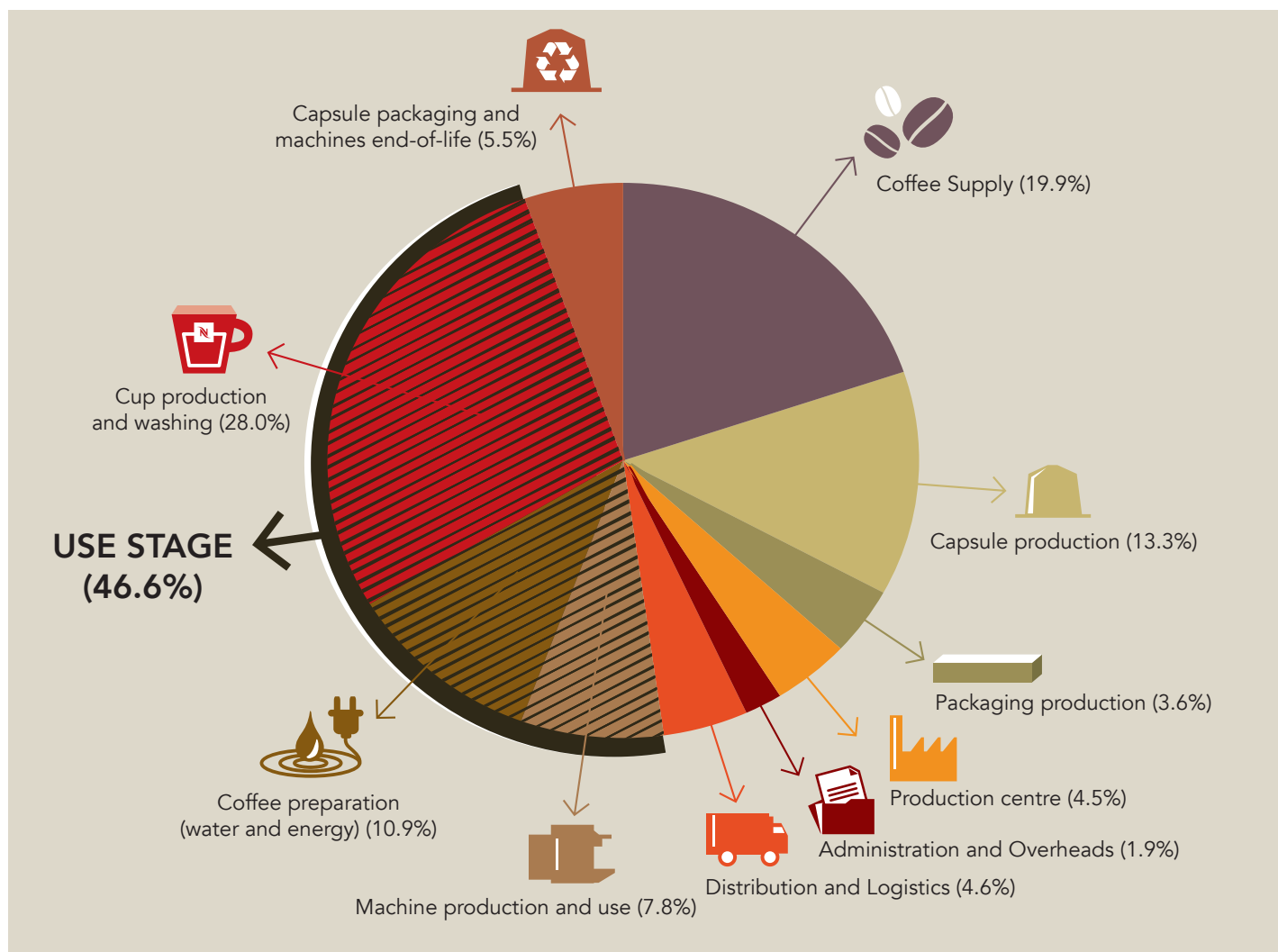
Source: *Nespresso*, 2015.

ANNEX 5. NESPRESSO LIFE CYCLE ANALYSIS

Nespresso commissioned different Life Cycle Assessments (LCA) from Quantis²² to evaluate the environmental impacts of its system. The company also estimated the impact of three generic espresso capsules that were launched in France and Switzerland, were compatible with the Nespresso machines and were competing with Nespresso's own capsule.

As shown in Figure 2, in 2012 the life cycle stages that had the most negative impact in terms of greenhouse gas (GHG) emissions were use of the Nespresso machine,²³ and coffee supply.

Figure 2. Carbon footprint of a Nespresso cup of coffee in 2012



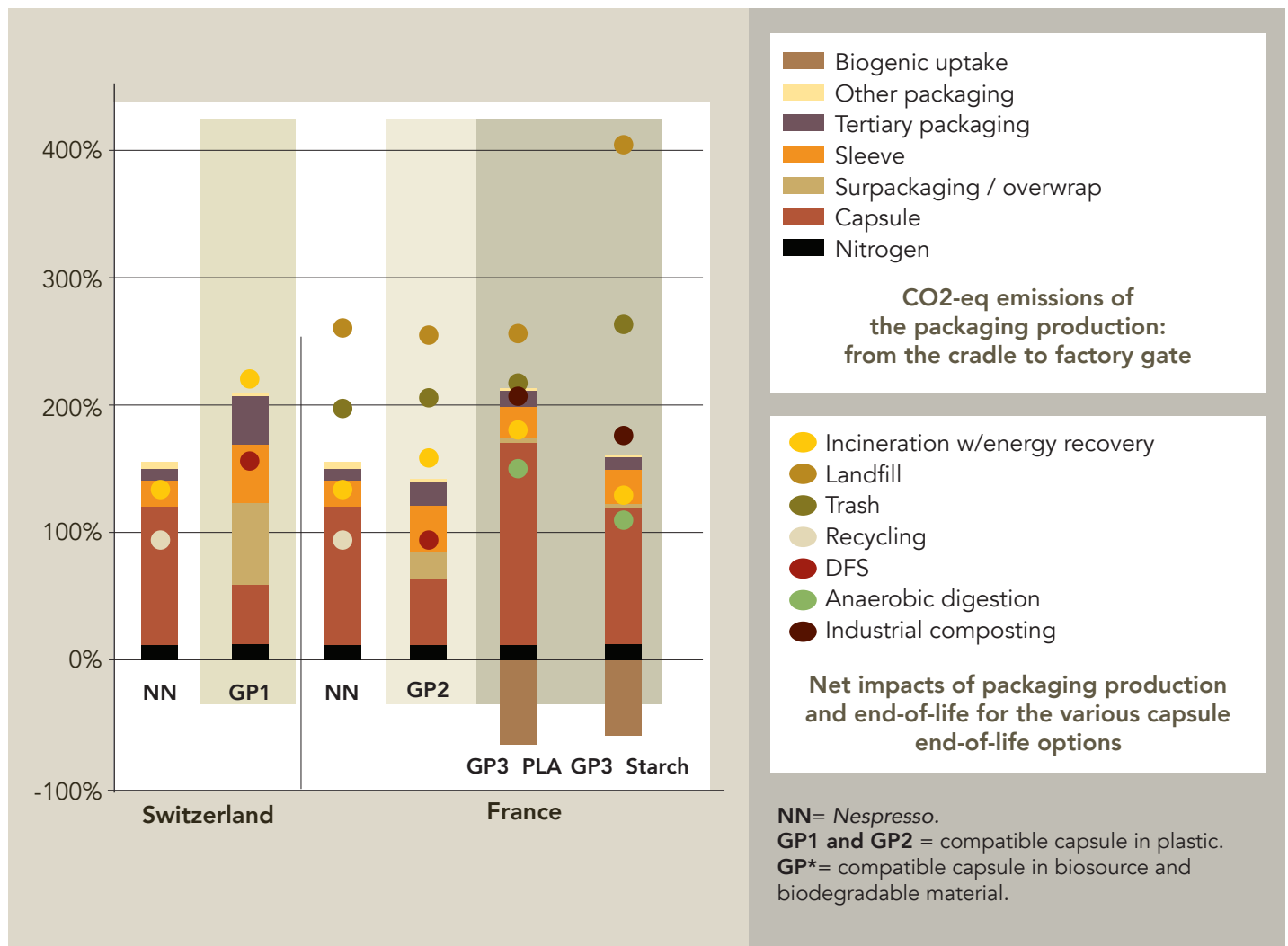
When analyzed against competitors, the LCA showed that "the espresso made with a Nespresso Espresso capsule has the lowest greenhouse gas emissions impacts within both behavioral groups ("trash" or valorization

22. Quantis is a consultancy firm and world-leader in environmental life cycle assessment (LCA). Nespresso has commissioned Quantis to undertake several LCA studies to find the best way of optimising its environmental impacts and carbon footprint.

23. Use stage includes the GHG emissions originated by machine production, coffee preparation and cup production and washing.

scenarios).²⁴ The best scenario²⁵ occurs when the *Nespresso* Espresso is sent to recycling, followed by when it is sent to the trash. Both *Nespresso* scenarios proved to be better environmental options than the anaerobic digestion of the generic product three espresso capsule, made of starch bioplastic. Figure 3 summarizes the assessed impacts among capsule options and processes.

Figure 3. Greenhouse gases emissions for the packaging production and its end-of-life associated with one capsule



In other results, Quantis stated that when comparing a portion system to a bulk system, portioned coffee systems have the advantage of consuming precisely the right amount of energy, water and coffee to produce a final cup of coffee.

“Like any system, portioned coffee has advantages and disadvantages. The production of the capsule has some impacts. However, the benefit of a portion system is actually that it reduces waste of brewed coffee

24. Other environmental impacts have been tested: resource consumption and impacts on human health show the same conclusions as greenhouse gas emissions, while ecosystem quality and water use show similar impacts between *Nespresso* Espresso recycling and other best scenarios Source: Comparative LCA of B2C espresso capsules. Quantis. 2011.

25. The analysis included coffee supply, packaging, production center, distribution, the use and the end-of-life stages for *Nespresso* capsules and three *Nespresso*-compatible models.

and reduces the amount of green coffee needed by ensuring a better extraction. This means that depending on the different scenarios (for example, how much prepared coffee is wasted in a traditional system or if the capsule is recycled and an economic machine is used), a *Nespresso* coffee can have a lower impact than a traditional one.” Yves Loerincik, CEO, Quantis.

ANNEX 6. HISTORY OF NESPRESSO MACHINES

Nespresso introduced its first machine in 1986 with a mini version of a professional espresso machine, and since then it has evolved into a distinctive design that enables the *Nespresso* system – the interaction between the *Nespresso* machine and the original *Nespresso* capsule – to control every variable leading to an optimum final cup.

Nespresso continues to improve its system, and the R&D team has obtained a large portfolio of patents over the last 28 years.²⁶ *Nespresso* designs and manufactures all coffee machines in collaboration with its machine partners, such as Eugster/Frismag, allowing them to build the patented extraction and brewing unit to manage the interplay of all factors.

All of this development has led to several design awards, such as:

- Nine Red Dot Design Awards.
- Two iF Product Design Awards.

Table 1 summarizes some key milestones for *Nespresso*’s machines over the years:

Table 1. Evolution of *Nespresso* machines over time

1986	Four initial coffee varieties including Capriccio, Cosi, Decaffeinato and Bolero (now known as Volluto), and the first two machines (the C100 and C1100) are designed to resemble mini espresso machines.
1999	A new system is launched as <i>Nespresso</i> Professional, with machines and coffee varieties packaged in pods, designed for small offices and the premium foodservice sector.
2001	The launch of the “Concept” machine, with a new ergonomic design, new technology and ease of use, generates record sales.
2004	Essenza machines are out in the market with a new compact line of micro-brewing machines in a wide range of colors.
2008	The Quality Seal™ technology is added to the <i>Nespresso</i> system which delivers water seals over the life of the machines to ensure consistent in-cup quality.
2011	<i>Nespresso</i> launches four machines in one year for the first time ever: PIXIE, its most ecological machine model; Zenius and Aguila, two machines bringing functionality to professional consumers; and Lattissima+ for easier preparation of milk-based coffee recipes.
2012	<i>Nespresso</i> launches two new machines: Maestria, inspired by professional coffee preparation, and the modular U, which shapes itself to fit contemporary spaces.

26. For technical specifications of the ongoing *Nespresso* machine models please refer to Annex 8.

ANNEX 7. MAIN PERFORMANCE AND DESIGN SPECIFICATIONS FOR SEVERAL NESPRESSO MACHINE MODELS

PIXIE

Ecofriendly, ergonomic, fastest single cup coffee makers with a 25 second heat up time.

WEIGHT:	6.6 lb
HEIGHT:	9.3 in
REMOVABLE WATER TANK:	24 oz
USED CAPSULE CONTAINER CAPACITY:	11
DIMENSIONS (WXDXH):	4.4" x 12.8" x 9.3"
PRICE RANGE:	\$171- \$210
CHARACTERISTICS:	
<ul style="list-style-type: none"> • Folding drip tray for Latte Macchiato glass • Compact size • Automatic power off after 9 minutes • Fast heat-up • 2 out of 6 colors of PIXIE panels are made of post-consumer recycled capsules with recycled aluminum 	



INISSIA & INISSIA BUNDLE

Compact design, lightweight and equipped with an ergonomic handle.

WEIGHT:	5.29 lb
HEIGHT:	9.1 in
REMOVABLE WATER TANK:	23.8 oz
USED CAPSULE CONTAINER CAPACITY:	11
DIMENSIONS (WXDXH):	4.6" x 12.6" x 9.1"
PRICE RANGE:	\$99- \$149
CHARACTERISTICS:	
<ul style="list-style-type: none"> • Folding drip tray for Latte Macchiato glass • Automatic shut off after 9 minutes, programmable • Compact size • Fast heat-up 	



HOW SHOULD NESPRESSO CAPITALIZE ON THE OPPORTUNITIES OF THE CIRCULAR ECONOMY TO BUILD A PREMIUM PROPOSITION FOR ASPIRATIONAL CONSUMERS?

LATTISSIMA + & LATTISSIMA + PRO

"One-touch" milk solution machine, allows coffee and milk to create a range of espresso-based beverages. It offers espresso with quality of milk froth.

HEIGHT:	10 in
DIMENSIONS (WXDXH):	6.5" x 12.6" x 10"
PRICE RANGE:	\$299- \$449
CHARACTERISTICS:	
<ul style="list-style-type: none"> • Folding drip tray for Latte Macchiato glass • Automatic shut off after 9 minutes, programmable • Fast heat up 25 seconds • Milk Frother • 4 buttons with automatic flowstop • Compact size • Fast heat-up 	



U & U MILK

With modular design, U can change its shape to fit different living spaces, made from over 30% of recycled materials.

WEIGHT:	6.15 lb
HEIGHT:	15.3 in
DIMENSIONS (WXDXH):	12.5" x 7.5" x 15.3"
PRICE RANGE:	\$172- \$259
CHARACTERISTICS:	
<ul style="list-style-type: none"> • Automatic capsule ejection • Ristretto, Espresso and Lungo • OFF mode after 9 minutes • Fast heat up 25 seconds • Modularity • Contains 30-50% post-consumer recycled ABS content from WEEE scheme 	



HOW SHOULD NESPRESSO CAPITALIZE ON THE OPPORTUNITIES OF THE CIRCULAR ECONOMY TO BUILD A PREMIUM PROPOSITION FOR ASPIRATIONAL CONSUMERS?

VERTUOLINE

New line from *Nespresso* in the USA offering both freshly brewed coffee and espresso with crema, thanks to Centrifusion™ and code reading extraction technology.

WEIGHT:	10.85 lb
HEIGHT:	11.93 in
REMOVABLE WATER TANK:	40 oz
USED CAPSULE CONTAINER CAPACITY:	13
DIMENSIONS (WXDXH):	8.32" x 11.91" x 11.93"
POWER RATING (IN WATTS):	1350 W
CABLE LENGTH:	33.46 in
PRICE RANGE:	\$171- \$210
CHARACTERISTICS:	<ul style="list-style-type: none"> • Descaling alarm • Optimised heat up time • Automatic shut off after 9 minutes, programmable aluminum



ANNEX 8. TECHNICAL SPECIFICATIONS OF NESPRESSO MACHINES

MACHINE USE LIFE	>10,000 servings (as an assumption for this Case Study).
RAW MATERIALS (APPROXIMATIONS)	1 to 2 kg of plastic ABS, 300gr of plasticSAN (transparent plastic for water tank), 300gr of technical plastics, 300gr of aluminum, 200gr of copper, 100gr of steel, 30gr of electronic components.
TOTAL WATER & ENERGY PER CUP	Water use is chosen by the consumer but the amount by the machine is what the consumer gets in the cup + small % which stays in the capsule. The energy consumption per cup is around 10 W for 40ml coffee.
TOTAL ENERGY USE IN STAND-BY MODE	Less than 0.1 W.
RECYCLABILITY %	The recyclability potential of a <i>Nespresso</i> coffee machine is between 50 and 60% (by weight) when disposed of by the consumer through the WEEE scheme (Waste for Electrical and Electronic Equipment). The remaining percentage will be either incinerated or landfilled depending on the country.
DIFFERENCES AMONG MODELS	Since 2009, all <i>Nespresso</i> consumer machine ranges have been equipped with an automatic power-off function or an automatic stand-by mode. PIXIE, U and Inissia, three recent machines, automatically switch off after 9 minutes of inactivity, consuming 60% less energy than A-ranked machines according to FEA / CECED standards. Other machines, such as the Lattissima Pro and the Maestria, consume 40% less energy than A-ranked machines.

HOW SHOULD NESPRESSO CAPITALIZE ON THE OPPORTUNITIES OF THE CIRCULAR ECONOMY TO BUILD A PREMIUM PROPOSITION FOR ASPIRATIONAL CONSUMERS?

ANNEX 9. CAPSULES

The iconic *Nespresso* capsules are the perfect design to preserve each of the 22 Grands Crus coffees and make drinking an espresso, or a lungo, a full sensory experience. Each capsule encloses 5 to 6 grams of the world's best coffee.

The capsule has two components: its body and the perforating top. Both parts are made of aluminum; however, the capsule's body is coated with a food-grade lacquer to ensure consumption safety. All capsules are produced in the *Nespresso* production centers at Orbe and Avenches, Switzerland, and shipped worldwide from the Avenches facility.

Capsules are sold in a black, unglazed, cardboard sleeve, made to hold ten capsules. These sleeves have been designed to be the stylish complement to wrap, carry and distinguish each Grand Cru by using different colors at one of the sleeve's ends.

Table 2 shows a breakdown of each material used in the production of *Nespresso* capsules and packaging.

Table 2. Material specifications of *Nespresso* capsules

PACKAGING ELEMENT		MATERIAL	GRAMS PER CAPSULE
CAPSULES	SHELL	Aluminum	0.81
	MEMBRANE	Aluminum	0.14
	OTHER	Polyurethane	0.050
Liquid Silicone rubber		0.053	
Paint		0.047	
SLEEVE		Solid bleached board	1.6
TERTIARY PACKAGING	CARDBOARD BOX	Corrugated board	0.78

Source: "Comparative full life cycle assessment of B2C cup of espresso made using a packaging and distribution system from *Nespresso* Espresso and three generic products". Quantis. 2011.²⁷

THE PERFECT MATCH: ALUMINUM AND NESPRESSO'S GRANDS CRUS

In addition to the quality requirements that make aluminum the only existing material suitable for the *Nespresso* system, aluminum is also the best fit for *Nespresso*'s positive environmental performance, from sourcing to recycling. *Nespresso* chose aluminum as the best material to protect the aroma and flavor profiles of its quality coffees. Aluminum provides perfect protection from oxygen, light and moisture.

27. Please refer to: <http://www.nestle-nespresso.com/asset-libraries/Documents/Quantis%20-%20Comparative%20LCA%20Study%20on%20Four%20Capsules%20Systems%20-%20Executive%20Summary%202011.pdf>

In addition, aluminum is a valuable material in terms of sustainability: it is lightweight and infinitely recyclable. However, the process of converting primary bauxite into aluminum is energy intensive, and there is little traceability in the aluminum supply chain.

A Life Cycle Assessment carried out for *Nespresso* showed that when it comes to environmental impact, recycling *Nespresso* aluminum capsules after use is the optimal choice to make an espresso coffee in a *Nespresso* machine. Other capsule options considered in the LCA study were:

- Capsule made of a blend of polypropylene, aluminum and polyethylene; a packaging sleeve; and tertiary packaging.
- Capsule made of polypropylene and PET, a packaging sleeve and tertiary packaging.
- Bioplastic capsule: made of a mix of polylactic acid and starch, a portion of overwrap, sleeve and tertiary packaging.

In addition, aluminum is lightweight, so it allows for transportation and environmental savings when compared to other packaging materials. Furthermore, it is infinitely recyclable; so it can be reused to make new aluminum products.

Used coffee grounds may also be recycled. Some countries, such as Australia, Switzerland and others, have taken recycling to a new level, separating coffee grounds from the capsule aluminum so the grounds can be used as compost fertilizer and heating briquettes. Meanwhile, other countries in Europe use the residual coffee through pyrolysis and transform it into energy, which helps power the recycling process itself.²⁸

ALUMINUM STEWARDSHIP INITIATIVE (ASI)

Nespresso's ongoing concern about sustainability, beyond end-of-life management of the capsule and recycling, made the company seek further initiatives and join the Aluminum Stewardship Initiative (ASI).²⁹ In 2008, *Nespresso* approached IUCN (the International Union for the Conservation of Nature) to collaborate on a project to create a standard for sustainable aluminum sourcing. Even though *Nespresso* is a relatively small user of aluminum, its capsules are high profile, and the partnership with IUCN has attracted a number of companies from different industries to work together to improve the impact of aluminum positively.

Nespresso and other companies, such as Rio Tinto Alcan, AMAG, Amcor Flexibles, Constantia Flexibles, Constellium and Tetra Pak – all of them leaders in their own right in the aluminum value chain - launched the ASI in 2012 to foster greater sustainability and transparency throughout the aluminum industry. The ASI mobilizes a broad base of stakeholders to establish and promote responsible environmental, social and governance practices across the aluminum value chain.

The resulting ASI Performance Standard is conceived as both a tool for responsible aluminium sourcing and a collaborative framework to improve the overall sustainability performance of aluminium-containing products. It aims to minimize the environmental and social impact of the aluminium value chain. It will enable the

28. Pyrolysis / thermolysis is the chemical decomposition of organic materials by heating in the absence of oxygen or any other reagents, except possibly steam. For more information please refer to <http://www.dgengineering.de/Rotary-Kiln-Processes-Pyrolysis.html>.

29. Please refer to: <http://Aluminium-stewardship.org/>.

aluminium industry to provide independent, credible and verifiable information regarding its environmental, social and governance performance. In the next years, ASI will be implemented through a third party certification system involving all industry players, making it possible to identify sustainable suppliers and materials throughout the supply chain.

As part of its Positive Cup commitments, *Nespresso* aims to source 100% of virgin aluminium capsule material compliant with this new Aluminium Stewardship Initiative standard.

ANNEX 10. NESPRESSO CAPSULE COLLECTION SYSTEMS AROUND THE WORLD

	Argentina	Collection points in 3 <i>Nespresso</i> boutiques.
	Italy	42 collection points in <i>Nespresso</i> boutiques, in community waste recycling centers and in offices.
	Australia	Collection points located in 11 <i>Nespresso</i> boutiques.
	New Zealand	2 collection points in the <i>Nespresso</i> boutiques.
	Austria	<i>Nespresso</i> collection system since 2009. Over 1,200 collection points, located in <i>Nespresso</i> boutiques, at retail partners, in offices and at community waste recycling centers.
	Norway	8 collection points in <i>Nespresso</i> boutiques and in offices.
	Benelux	Over 3,300 collection points in Belgium, the Netherlands and Luxembourg, located in <i>Nespresso</i> boutiques and offices. Nationwide doorstep collection system since 2010.
	Poland	A collection point in the <i>Nespresso</i> boutique and nationwide doorstep collection since 2012.
	Brazil	20 collection points located in <i>Nespresso</i> boutiques, at retail partners and in offices.
	Portugal	Over 290 collection points in <i>Nespresso</i> boutiques, at retail partners, in offices and in community waste recycling centers.
	Czech Republic	5 collection points in <i>Nespresso</i> boutique and in offices.
	Russia	17 collection points in <i>Nespresso</i> boutiques and in offices. Nationwide doorstep collection since 2012.
	Canada	18 collection points located in <i>Nespresso</i> boutiques, at retail partners and at an office site.

	Singapore	2 collection points in the <i>Nespresso</i> boutiques and nationwide doorstep collection since 2012.
	Finland	National waste recovery system since 2012.
	South Korea	10 collection points in <i>Nespresso</i> boutiques, at retail partners and in offices. Nationwide doorstep collection since 2011.
	France	<i>Nespresso</i> collection system since 2008. Over 5,000 collection points in <i>Nespresso</i> boutiques, in community waste recycling centers and at pick-up points. Doorstep collection in Paris and Marseille.
	Spain	Over 900 collection points in <i>Nespresso</i> boutiques, at retail partners, offices and at community waste recycling centers.
	Germany	National waste recovery system since 1993.
	Sweden	National waste recovery system since 2010.
	Hong Kong	2 collection points in <i>Nespresso</i> boutiques and nationwide doorstep collection since 2011.
	Switzerland	<i>Nespresso</i> collection system since 1991. Over 2,600 collection points in <i>Nespresso</i> boutiques, at retail partners and at community waste recycling centers. Nationwide doorstep collection since 2012.
	Hungary	2 collection points in <i>Nespresso</i> boutiques.
	UAE	A collection point in the <i>Nespresso</i> boutique and nationwide doorstep collection since 2013.
	Ireland	2 collection points in <i>Nespresso</i> boutiques and nationwide doorstep collection since 2012.
	UK	6 collection points in <i>Nespresso</i> boutiques and nationwide doorstep collection since 2012.
	Israel	11 collection points in <i>Nespresso</i> boutiques and nationwide doorstep collection since 2013.
	USA	Over 2,000 collection points, located in <i>Nespresso</i> boutiques and at retail partners. Doorstep collection in some regions through the <i>Nespresso</i> Capsule Brigade™ program in partnership with TerraCycle.

* Status: Q1 2014

HOW SHOULD NESPRESSO CAPITALIZE ON THE OPPORTUNITIES OF THE CIRCULAR ECONOMY TO BUILD A PREMIUM PROPOSITION FOR ASPIRATIONAL CONSUMERS?

ANNEX 11. LIMITS TO GROWTH AND THE OPPORTUNITIES OF THE CIRCULAR ECONOMY

GENERAL STATUS OF WORLD RESOURCES AND LIMITS TO GROWTH

According to the Ellen MacArthur Foundation (see <http://www.ellenmacarthurfoundation.org>): “The linear “take, make, and dispose” model relies on large quantities of easily accessible resources and energy, and as such is increasingly unfit for the reality in which it operates. Working towards efficiency—a reduction of resources and fossil energy consumed per unit of manufacturing output—will not alter the finite nature of their stocks but can only delay the inevitable.”³⁰ In terms of volume, some 65 billion tons of raw materials entered the economic system in 2010, and this figure is expected to grow to around 82 billion tons by 2020.³¹

Due to a rise in average global affluence, the supply of many non-renewables (including metals, minerals, fossil fuels) cannot keep up with demand;³² at the same time the regenerative capacity of renewables (such as land, forests, water) has become stressed to its limits. In addition, price volatility could dampen business competitiveness as much as high prices for resources. The last decade has seen higher price volatility for metals, food and non-food agricultural outputs than in any single decade in the 20th century.³³

Unparalleled challenges are also foreseen on the demand-side. Around 3 billion people are expected to join the middle class by 2025.³⁴ This represents the largest and fastest rise in disposable incomes ever and will occur mainly in the developing world.

THE CIRCULAR ECONOMY: CONCEPT & OPPORTUNITIES

According to the Ellen MacArthur Foundation, the circular economy refers to: “an industrial economy that is restorative by intention; aims to rely on renewable energy; minimizes, tracks, and hopefully eliminates the use of toxic chemicals; and eradicates waste through careful design.”

The concept is based on the study of non-linear systems, of which a major outcome is the notion of optimizing systems rather than components. It involves the careful management of material flows of two types: biological nutrients, designed to re-enter the biosphere; and technical nutrients, which are designed to circulate at high quality without entering the biosphere.

As a result, a circular economy creates a clear distinction between the consumption and use of materials. A circular economy pursues a “functional service” model in which manufacturers or retailers increasingly retain the ownership of their products and, when possible, act as service providers selling the use of those products.

Circular economy principles state:³⁵

- **Design out waste.** Waste does not exist when the biological and technical components (or “materials”) of a product are designed by intention to fit within a biological or technical materials cycle, designed for disassembly and re-purposing. The biological materials are non-toxic and can be simply composted.

30. Please refer to: <http://www.ellenmacarthurfoundation.org/circular-economy/circular-economy/the-circular-model-an-overview>.

31. Please refer to: <http://www.ellenmacarthurfoundation.org/business/reports/ce2012>

32. Elements that may be depleted within five to fifty years include gold, silver, indium, iridium, tungsten and many others that are vital for industry. Source: Hunt, A. J. (ed.), *Element Recovery and Sustainability*, RSC / Green Chemistry Series, Cambridge, 2013.

33. Please refer to: http://www.mckinsey.com/insights/energy_resources_materials/resource_revolution.

34. Please refer to: http://www.mckinsey.com/insights/energy_resources_materials/resource_revolution.

35. Please refer to: <http://www.ellenmacarthurfoundation.org/circular-economy/circular-economy/the-circular-model-an-overview>.

Technical materials—polymers, alloys and other man-made materials -- are designed to be used again with minimal energy and highest quality retention.

- **Build resilience through diversity.** Modularity, versatility, and adaptability are prized features that need to be prioritized in an uncertain and fast-evolving world. Diverse systems with many connections and scales are more resilient in the face of external shocks than systems built simply for efficiency—throughout maximization driven to the extreme results in fragility.
- **Work toward using energy from renewable sources.** Systems should ultimately aim to run on renewable energy—enabled by the reduced threshold energy levels required by a restorative, circular economy. For example, more integrated food and farming systems would reduce the need for fossil-fuel based inputs and capture more of the energy value of by-products and manures.
- **Think in “systems”.** The ability to understand how parts influence one another within a whole, and the relationship of the whole to the parts, is crucial. Elements are considered in relation to their environmental and social contexts. While a machine is also a system, it is clearly narrowly bounded and assumed to be deterministic. Systems thinking usually refers to the overwhelming majority of real-world systems: these are non-linear, feedback-rich, and interdependent. In such systems, imprecise starting conditions combined with feedback lead to often surprising consequences, and to outcomes that are frequently not proportional to the input (“undamped” feedback). Systems thinking emphasizes stocks and flows. In a business context, their modular and adaptive properties mean more leeway for innovation and the development of diversified value chains, as well as less dependence on purely short-term strategies.
- **Think in cascades.** For biological materials, the essence of value creation lies in the opportunity to extract additional value from products and materials by cascading them through other applications. In biological decomposition, be it natural or in controlled fermentation processes, material is broken down in stages by microorganisms like bacteria and fungi that extract energy and nutrients from the carbohydrates, fats, and proteins found in the material. For instance, going from tree to furnace forgoes the value that could be harnessed via staged decomposition through successive uses as timber and timber products before decay and eventual incineration.

THE MICROECONOMICS OF CIRCULARITY PRINCIPLES

Essentially, circularity principles are fostering new value chains where inputs can be returned and used in cyclical –and often longer life-chains. Nevertheless, most companies today are not set to capitalize on the opportunities of circular thinking.

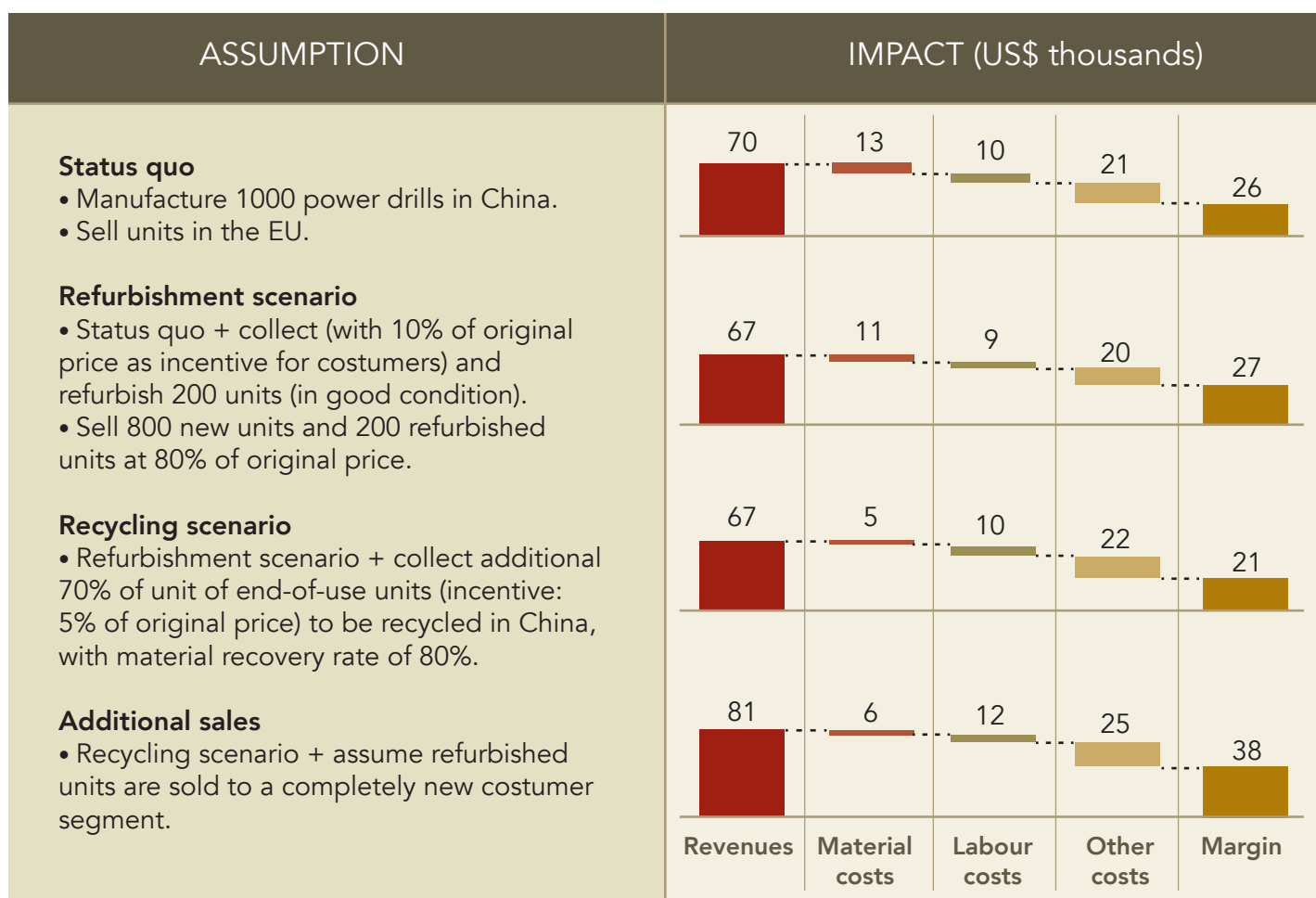
In order to take concrete steps toward circularity, companies must find business models to create the best arbitrage opportunity according to their strategy. Figure 4 illustrates a very simplified multi-tier supplier network for a power drill, and sketches out the different options for its reverse cycle. The network includes a range of options within two business models: reinstalling the power supply into the next drill (as a used component), or to use at least the cable and plug, if transformer reliability presents a problem. The question remains, after that, should all components be sent to the smelter for metal extraction -as this can be

done in one simple shipment- instead of organizing a more complex operation involving disassembly and remanufacturing?³⁶

The financial and labor arbitrage potential –and trade-offs -- of different reverse cycle treatments has also been detailed. In the refurbishment scenario, used drills are collected, refurbished locally and sold at 80% of the original retail price. Although total revenues are lower, the process results in an additional profit of four percentage points compared to the status quo, creating local jobs at the refurbishment facility as a co-benefit.

In the recycling scenario, in addition to local refurbishment, other used components and materials would be shipped back to China as input for making new drills, increasing the potential margin by nine percentage points (compared to status quo) driven mostly by material savings. Assuming additional sales, instead of cannibalization of new drill sales (i.e. the refurbished drills at competitive prices capture new customers), the profit margin would increase by ten percentage points.

Figure 4. Margin improvements from adopting circular economy driven models: The case of a power drill



Source: Expert interviews; World Economic Forum and Ellen MacArthur Foundation circular economy team. Towards the Circular Economy: Accelerating the scale-up across global supply chains. World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company. January, 2014.³⁷

36. Each of these trade-offs is highly dependent on the scale, reliability and transferability of the supply of used components. Equally important is to factor in the relative cost advantage of setting up effective post-usage loops, typically with business partners, versus making new components and using virgin materials.

37. Please refer to: http://www3.weforum.org/docs/WEF_ENV_TowardsCircularEconomy_Report_2014.pdf

ANNEX 12. THE SHARING ECONOMY: MATERIAL GOODS SERVED THROUGH PLATFORMS

The sharing economy could be understood as the mostly digital-driven side of the circular economy concept. The sharing economy, or peer economy or collaborative consumption, is a type of business built on the sharing of resources. It reevaluates the way people interact with one another and with the resources on hand. The global sharing economy market was valued at \$26 billion in 2013, and some predict it will grow to become a \$110 billion revenue market in the coming years. The types of sharing economy initiatives are very diverse, and the concept has both created markets out of goods and services that would not have been considered monetizable assets before and has been applied to products or services that already existed. One of the most well-known, and among the oldest, is the 15-year-old car sharing system, Zipcar. Others have to do with sharing rooms (Airbnb), services (Fiverr), grocery deliveries (Instacart), etc.

Botsman and Rogers (2010) characterized the systems of collaborative consumption into three types:

- Product service systems enable companies to offer goods as a service rather than sell them as a product.
- In redistribution markets, used or pre-owned goods are moved from somewhere they are not needed to where they are.
- In collaborative lifestyles, people with similar needs band together to share and exchange less tangible assets like time, space, skills and money.

“People really are looking at this for economic, environmental and lifestyle reasons. By making this access as convenient as ownership, companies are seeing a major shift” (published in Forbes magazine, January 2013).

ANNEX 13. CONSUMERS: GROUPS, TRENDS AND BEHAVIOR

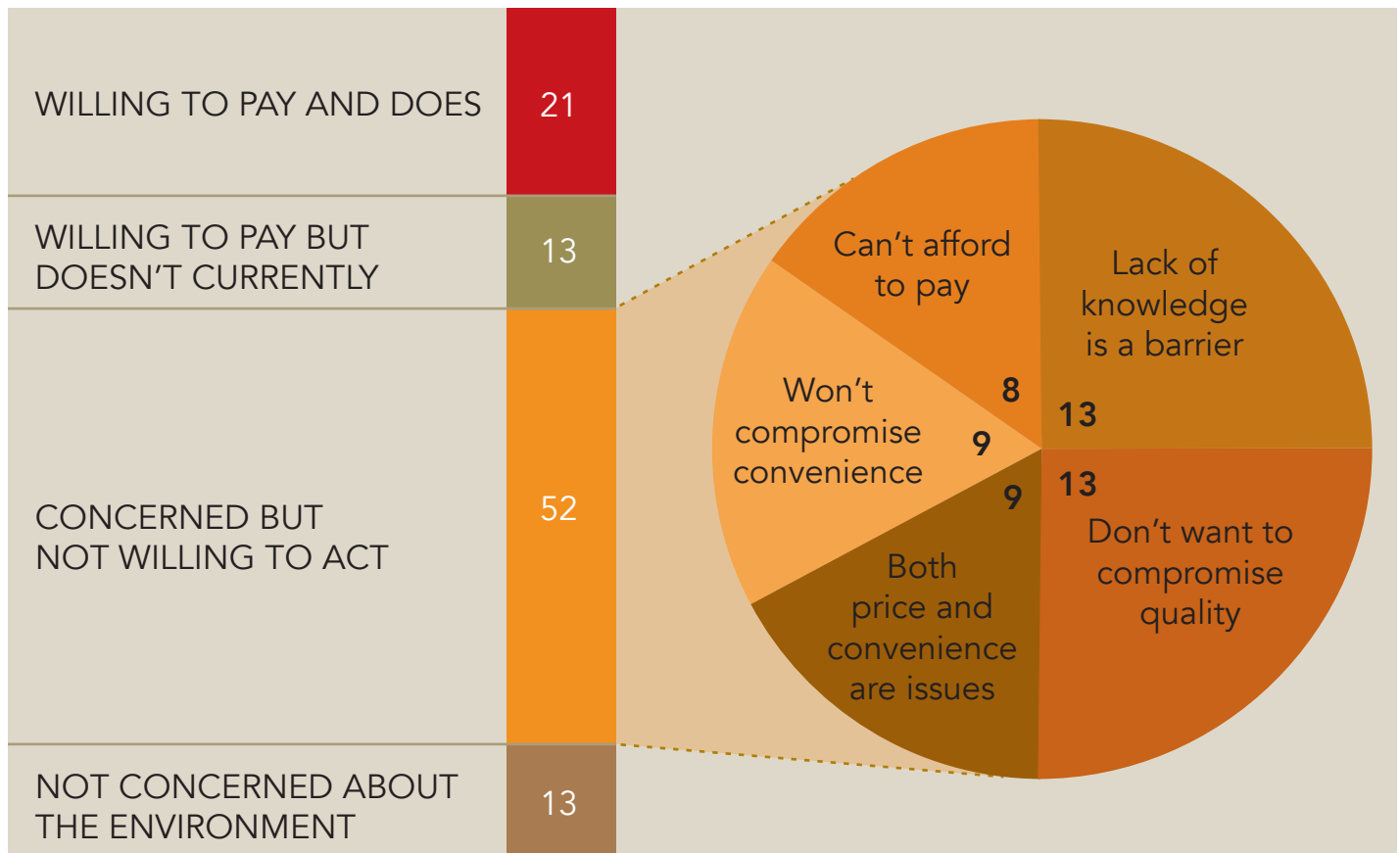
RESOURCE-USE CONCERNED CONSUMERS AND BUYING BEHAVIOR: THE PARADOX

The consumption consciousness of aspirational is not new. As much as a decade ago, the availability of information –higher in developed countries -- related to human-driven resource depredation was reflected in consumer awareness surveys. In 2008, 96% of Europeans said that protecting the environment is important for them personally. Two-thirds of this group said that it is “very important.”

This trend is now recognized at the global scale. Consumers in rapidly developing and developed markets – particularly China, Australia, Sweden and the USA – report a propensity to buy from companies with a reputation for environmental and social responsibility; and, in a study by the European Union, 75% of respondents agreed that they would pay more for environmentally-friendly products.

Nevertheless, there is also a persistent gap between consumer attitudes and behaviors. Consumers are more likely to adopt environmentally-responsible behaviors if both cost-efficient and convenient. A McKinsey survey of consumers in Brazil, Canada, China, France, Germany, India, the UK and the USA found that 53% were concerned about environmental and social issues, but not willing to take action when shopping; a further 13% were willing to pay more, but currently did not do so (see Figure 5).

Figure 5. Global retail consumers segmented by willingness to pay for products with environmental & social benefits



Graph edited by CIMS, 2015.

Source: The McKinsey Quarterly, March 2008. Survey of consumers in Brazil, Canada, China, France, Germany, India, the UK and the US.³⁸

The 2014 edition of National Geographic- GlobeScan Greendex study showed that the most prone-to-buy consumers are in developing economies: India and China, in descending order, followed by consumers in South Korea, Brazil, and Argentina. American consumers' behavior still ranks as the least sustainable of all countries surveyed since the study began in 2008.

The reasons for this behavioral paradox are multiple: lack of education on how to act, confusion on where to prioritize efforts and lack of understanding of the cost benefits of living more sustainably, among others. From this perspective, it becomes clear that individual consumers face many of the same hurdles of businesses looking to act more sustainably.

Nevertheless, this inconsistent behavior can be influenced. In the UK, where the government provides financial and practical aid for some sustainable practices, consumers are more likely to take those actions than to abandon their cars for public transportation.

National Geographic - GlobeScan revealed that those in Latin America and India appear to be the most easily influenced to change when informed about environmental impacts. Results also show that consumers who already display sustainable behaviors and are told they are above average, are more motivated to improve their behavior further than those who display less-sustainable habits.

38. Please refer to: http://www.academia.edu/5368745/consumerism_in_the_modern_era_need_and_importance