sagentia
INNOVATION

WHITE PAPER

# Minimum Lovable Product - Using empathy to make your products fly

AUTHOR
Carl Hewett, VP Design

Investing in a Minimum Lovable Product can enable more seamless transition from early adopters to the mainstream market and quicker commercial returns. But how should R&D teams address this subjective matter? Carl Hewett outlines a systematic approach that puts empathy at the heart of product development.

**Carl Hewett**
VP Design

Minimum Viable Products offer basic usability; Minimum Lovable Products build on this for a better user experience.

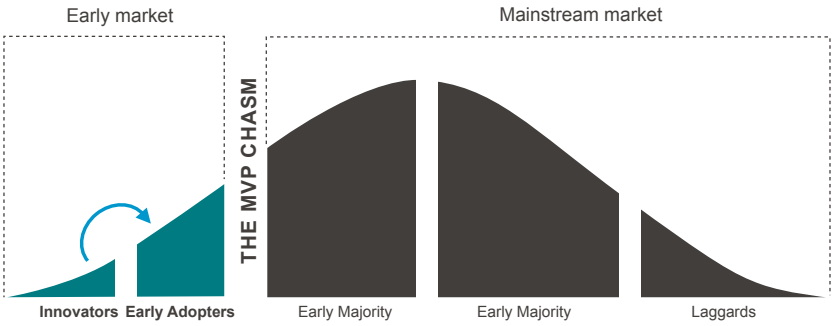
It's more than 20 years since Minimum Viable Product (MVP) was embraced as a key principle of lean product design. A MVP has just enough features to make it usable for early customers whose feedback informs further iterations. Today, while MVP is still valid, it isn't always enough to bridge the gap between early and mainstream uptake. The emergence of Minimum Lovable Product (MLP) – a term coined by Brian De Haff – offers ways to overcome this challenge.

MLP goes beyond basic usability to ensure the overall experience is convenient and enjoyable. This doesn't necessarily involve adding new product features, in fact it can be a subtractive process, as we'll explore later.

It's useful to articulate the difference between MVP and MLP using a simple analogy. Imagine you are taking a gas or electric meter reading in your home. This can often be done in a dark environment, therefore, a torch is needed whilst you write the reading down on paper. A modern service provider might have an app, and an MVP approach has the option to enter your readings in the app, the basic Job To Be Done. An MLP approach understands the secondary need that in order to see, you might need a light. As you are using a phone the app also provides a helpful torch button on the same app screen. This kind of improvement enhances user acceptance.

Achieving minimum lovability helps products cross the MVP chasm illustrated in Figure 1, enabling and accelerating early majority adoption and business growth. The chasm is separated by the differences in mindset for early market and mainstream market customers. Whilst early adopters are willing to compromise on user experience in the pursuit of new and novel experiences, the early majority want convenient and complete solutions.

## Early adopters are willing to compromise




## Early majority want convenience

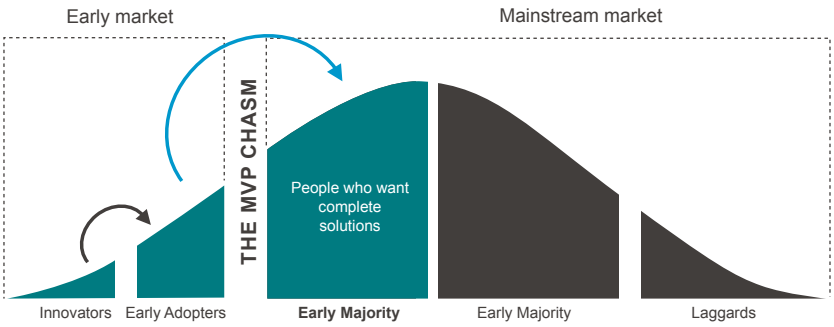



*Figure 1: MLP places greater emphasis on the quality of user experiences, easing the transition from early to mainstream market.*

# The MLP mindset

Before we look at practical measures involved in MLP creation, it's worth considering the MLP mindset in more detail. The core ethos of MLP is that experiences really matter. While this may seem obvious, it can easily be forgotten due to the competing pressures of the product design and development process.

For instance, it's easy for iterative design to be constrained by what has been created before, resulting in structural fixedness. Take the development of television sets between the 1940s and the 1980s. As Figure 2 shows, despite ongoing evolution and modernisation, the controls were consistently positioned to the side of the screen until the 1970s. The original 1940s models had to be constructed this way because the vacuum tubes used to regulate the display tended to overheat. Positioning the controls as far from the tubes as possible solved the potential problem of them melting. From the early 1950s vacuum tubes were replaced with transistors and overheating was no longer an issue. Yet for decades the controls stayed where they were, until the 1980s when they were positioned differently to facilitate side speakers. Even then, positioning them above rather than below the screen could have been more advantageous for users. People with back problems could have used the controls without bending, and they would have been out of young children's reach.

This is an example of how considering the user experience, rather than relying on legacy ideas or conventional wisdom (which may be outdated or irrelevant), is a central tenet of MLP. Another is the philosophy of exploring options rather than single-mindedly chasing solutions. We'll look at this more closely in the next section.

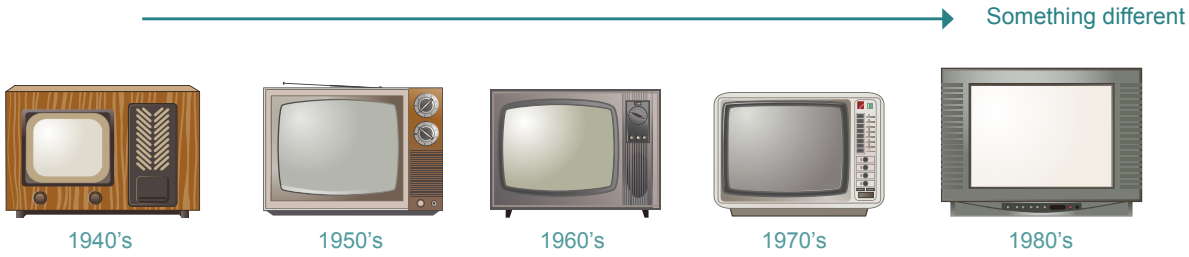



*Figure 2: For decades, the design of television sets was affected by structural fixedness.*

# Connecting with users: three phases of MLP creation

Creating a viable product is an objective exercise. Trials and tests in the laboratory or workshop can easily determine whether it works as intended. In contrast, the notion of a lovable product is inherently subjective. Nevertheless, it is possible to apply a systematic approach to the creation and validation of MLPs. The following steps outline how it can be achieved.

## 1. Take an empathy-led approach

Empathy is the cornerstone of MLP. It goes beyond understanding what users need, to also consider their feelings associated with the product. This spans the entire product engagement journey and different stakeholder perspectives, from purchase to use to end of life.

Perception, Cognition, Action (PCA) analysis, commonly used in human factors engineering, can form a strong foundation for empathy-led product development. The Perception element focuses on users' sensory experience of the product, such as what it looks like and how it feels physically. It can also encompass what they hear about the product from friends, family, colleagues, or other influencers. Cognition refers to users' thoughts and feelings about the product. It's how people process the sensory input they receive, and it may manifest as fears, frustrations, and anxieties, or as needs, hopes, and motivations. Action is about how users respond to the product, or what they actually say and do.

In general, product developers are very good at harnessing user perception and cognition, but the action element of PCA requires more effort and investment. Although it takes time and effort, ethnographic research is a powerful tool to determine how users really respond to a product.

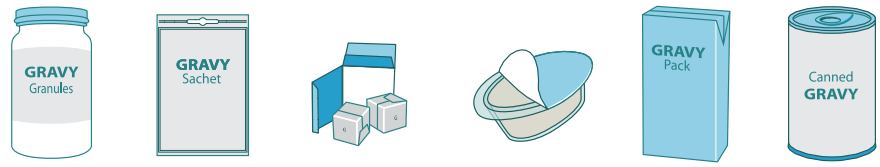
Observing people's behaviour as they interact with a product for the first time quickly reveals any dexterity, cognitive, or sensorial limitations experienced during use. This can reap dividends in terms of delivering insights that determine minimum lovability to help cross the MVP chasm and satisfy the early majority market. One factor that underlines the value of ethnographic research is the amazing ability of humans to develop coping strategies for use. This can present challenges when seeking user insights. Imagine a first-time driver versus an experienced driver using the same car or a toddler using stabilisers versus a child without stabilisers riding the same bike. A sole focus on one type of user can be limiting, but gaining perspectives from both expert and novice users allows any differences in their responses to the product to be noted. This is as true when developing a surgical robot as it would be for a single serve hot beverage machine.

## 2. Focus on options, not solutions

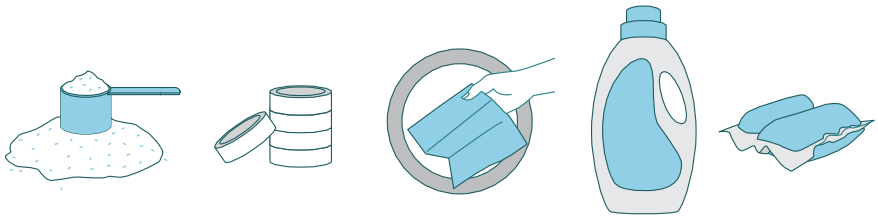
Minimising time to market is important, but too much focus on the rapid development of solutions can be counterproductive. When creating an MLP it's useful to take a step back to consider the bigger picture. This can reveal important insights and alternative options that may help the product gain an edge in the lovability stakes.

Two techniques can be applied here: analogous ideation and systematic inventive thinking. Let's look at each of them in turn.

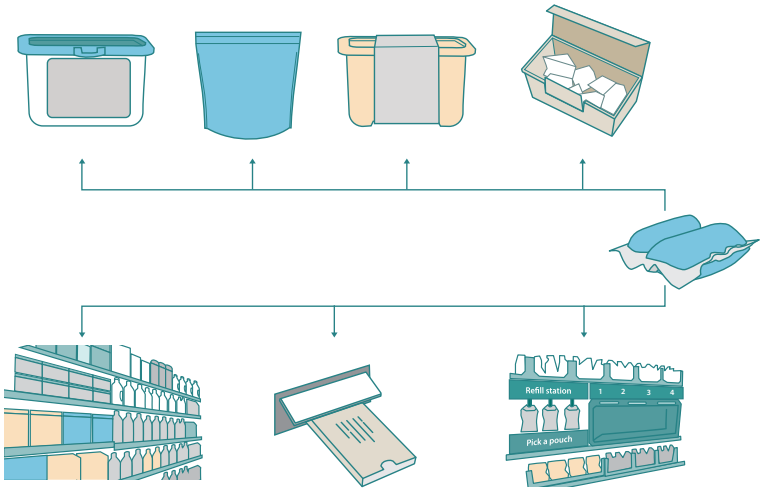
Analogous ideation considers relevant, pre-validated developments in other products or product categories, assessing whether they hold MLP potential for the product in hand. For instance, innovation surrounding a new coffee product might look at whether there is a more lovable alternative to the coffee pod. As Figure 3 indicates, an adjacent product type, such as gravy, might provide inspiration for alternative forms of primary packaging. This product spectrum ranges from jars or individual sachets of dry product for reconstitution to cans or packets of the finished wet product. Better still, non-direct adjacencies can also offer useful ideas, as the detergent example shows.




Primary packaging analogies from direct adjacencies



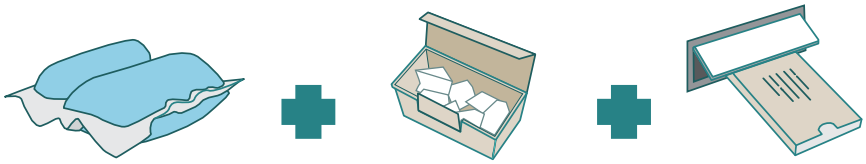
Primary packaging analogies from non-direct adjacencies




Secondary packaging and business model options

*Figure 3: Comparable adjacent product types and non-direct adjacencies can both provide MLP inspiration.*

Considering different options for primary packaging naturally leads to a review of secondary packaging formats. This in turn can stimulate ideas for new business models, such as direct-to-consumer or refillable options. AI platforms such as **Midjourney** give product developers free rein to experiment with the visualisation of new concepts, such as ‘a coffee product in tablet format’ or ‘a laundry pod for coffee’. This can bring various options to life in a cost-effective way to elicit reactions from user panels and factor them into the development process. Figure 4 illustrates a potential option for mail order coffee in dissolvable pods with pulp-based outer packaging.



Option: Dissolvable coffee capsules using mail order card base packaging.

*Figure 4: AI can be used to visualise various options in a cost-effective way.*

Systematic inventive thinking is a practical technique to break away from established patterns of thinking during the innovation process. e.g. Need>Idea. Instead, it involves the functional decomposition of a product and recomposition into options. Teams are encouraged to use creativity to think of added value the new compositions might bring for different types of user, e.g. Idea>Need. Forcing empathy in this way can be beneficial for teams. Figures 5 to 9 illustrate how the method works, using a bike as an example. Core functions are listed on the horizontal axis, with elements for ideation listed in the vertical. A systematic process of ‘subtraction, multiplication, division, and task unification’ forces teams to challenge preconceived ideas.

## Functional decomposition

Step 1 - List functions in the horizontal

Step 2 - Ideate elements in the vertical

| Fuel | Motive force | Input | Drive train | Translation | Motion | Chassis | Steering | Concept |
|---|---|---|---|---|---|---|---|---|
| N/A | Legs | Pedals | Chain | Sprocket | Wheels | Tubes | Single pivot | **Bike** |
| Petrol | Arms | Shaft | Torso | n/a | Paddle | monocoque | Rack and pinion | **Car** |
| Diesel | Cam Shaft (ICE) | Pedal | Drive shaft | | | Cast | Ore | |
| Nuclear | Pressure | | | | | | | |
| Steam | | | | | | | | |

*Figure 5: Functional decomposition of products can stimulate new ideas for improved user experience.*

At the subtraction stage, a given element considered essential to the product is removed, such as the pedals from the bike. Instead of discounting the idea, teams are encouraged to think of any added value this might bring for different types of user. Here, it offers scope for enabling children to learn how to ride and balance, and the resultant product is a balance bike.

## Subtraction - Remove an element

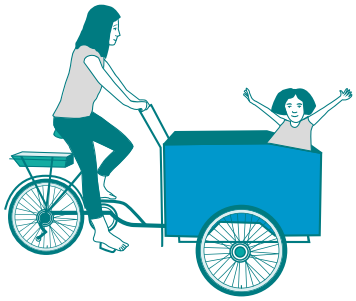
1. Remove the pedals
2. Don't discount the idea
3. Think of the value it might bring e.g. children learning to ride and balance
4. New product and market offerings – balance bike

| Fuel | Motive force | Input | Drive train | Translation | Motion | Chassis | Steering | Concept |
|---|---|---|---|---|---|---|---|---|
| N/a | Legs | Pedals | Chain | Sprocket | Wheels | Tubes | Single pivot | **Bike** |

*Figure 6: Removing pedals from the bike is advantageous for children learning to balance and ride.*

## Multiplication - Duplicate an element

1. Duplicate the rear wheels
2. Don't discount the idea
3. Think of the value it might bring e.g. a parent on a sustainable school run
4. New product and market offerings – adult trike

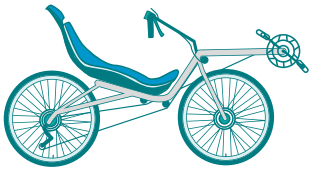


| Fuel | Motive force | Input | Drive train | Translation | Motion | Chassis | Steering | Concept |
|---|---|---|---|---|---|---|---|---|
| N/a | Legs | Pedals | Chain | Sprocket | **Wheels (x2)** | Tubes | Single pivot | **Bike** |

*Figure 7: Duplication of wheels triggers ideation of a cargo bike.*

## Division - Move an element in time or space

1. Move the pedals and chain in front of you
2. Don't discount the idea
3. Think of the value it might bring e.g. a user with no/poor arm function
4. New product and market offerings – recumbent

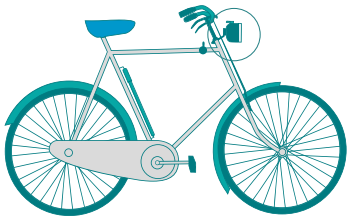


| Fuel | Motive force | Input | Drive train | Translation | Motion | Chassis | Steering | Concept |
|---|---|---|---|---|---|---|---|---|
| N/a | Legs | **Pedals** | **Chain** | Sprocket | Wheels | Tubes | Single pivot | **Bike** |

*Figure 8: Moving the pedals and chain enables the creation of a recumbent bike.*

## Task Unification - Merge elements or functions

1. Merge wheel rotation for a different purpose (energy recovery)
2. Don't discount the idea
3. Think of the value it might bring e.g. many people have lights, why not power them?
4. New product and market offerings – dynamo!



| Fuel | Motive force | Input | Drive train | Translation | Motion | Chassis | Steering | Concept |
|---|---|---|---|---|---|---|---|---|
| N/a | Legs | Pedals | Chain | Sprocket | **Wheels** | Tubes | Single pivot | **Bike** |

*Figure 9: Energy generated by the wheels' motion can be harnessed for a dynamo bike light.*

The same principle applies to multiplication, with a given element duplicated. In this case, increasing the number of wheels provides the inspiration for a cargo bike enabling commuting parents to transport their children. It's a similar story for division where elements are moved in time or space. Putting the pedals and chain in front of the user, results in the creation of a recumbent bike for users with upper body limitations. Finally, task unification, where elements or functions are merged, can add further value for users. In our bike example, this manifests as a dynamo bike light powered by the energy generated from the motion of the wheels. Each of these options improves the bike experience for specific groups of users. The same process can be applied to an MVP to generate ideas that would help evolve it into an MLP.

## 3. Validate the user experience

Thinking about different product options creates fertile ground for the generation of exciting new product ideas. But it's important to go full circle and return to the notion of empathy. Do the new features add up to a better experience overall? Or do they have repercussions that might detract from product lovability?

User experiences surrounding reusable nappies illustrate this point nicely.

If we apply PCA analysis to reusable nappies, it's easy to see how the perception and cognition aspects would stack up favourably. They are marketed, and widely perceived, as being more environmentally sustainable, reducing the volume of disposable nappies destined for landfill. Parents thinking about the future health of the planet for their offspring might easily conclude that reusable nappies are the best solution.

However, when it comes to action, or day to day use, things are less straightforward. Factors such as changing nappies away from home, disposing of waste from used nappies, and storing quantities of used nappies for washing, all have implications which threaten the quality of the user experience. What's more, if used nappies are wrapped in single-use plastic bags or laundered in small quantities, the core environmental credentials are less clearcut.

From an MLP perspective, thorough validation of a product and its features is a crucial step. Apply human thinking and consider how the product will fare in real-world scenarios.

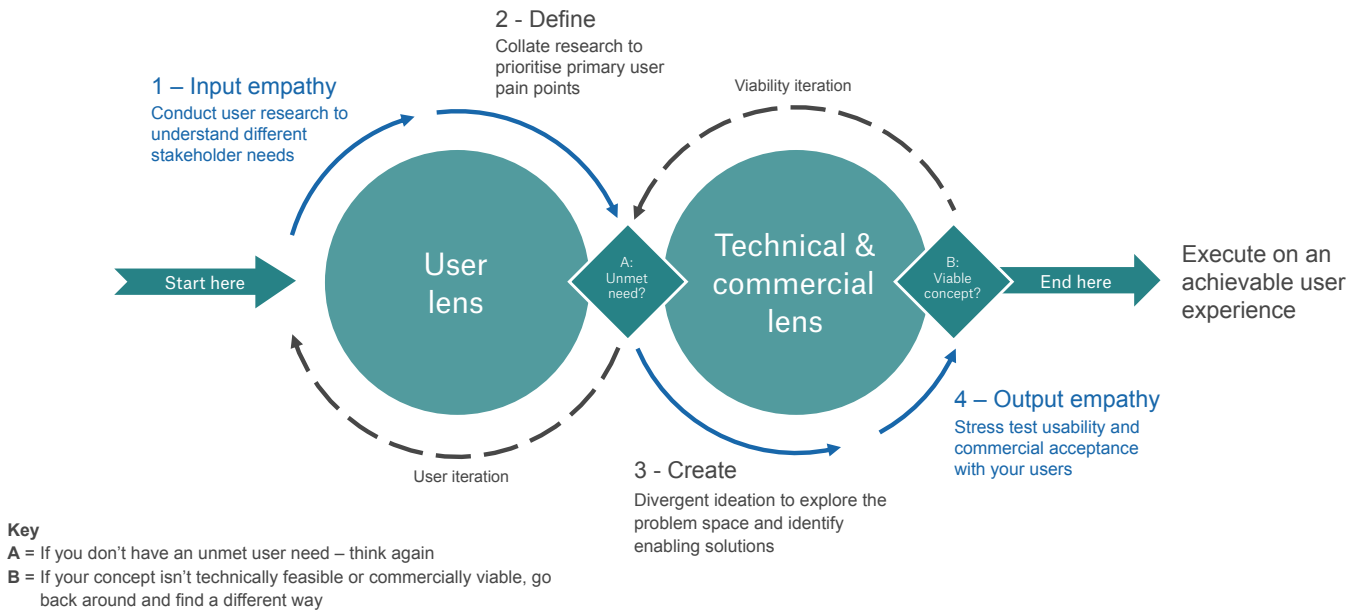



*Figure 10: Shows the iterative process to ensure the empathy is present, alongside the technical and commercial considerations, to enable a MLP design to be created.*

## MLP facilitates and accelerates mainstream success

A MLP is likely to achieve mainstream uptake more quickly than its MVP equivalent. Indeed, in highly competitive markets, failure to produce a MLP may result in failure to cross the early/mainstream chasm. Understanding the difference in mindset between early adopters and the early majority is key. Ultimately, it comes down to humanising product experiences, so they are more enjoyable, relevant, and longlasting. Applying a practical framework to this subjective discipline is the best way to facilitate and accelerate mainstream success.

Contact **info@sagentiainnovation.com** to speak with Carl Hewett and find out how we can support your company.

## About Sagentia Innovation

Sagentia Innovation provides independent advisory and leading-edge product development services focused on science and technology initiatives. Working across industrial, chemical, energy, food and beverage, and consumer markets, Sagentia Innovation works with start-up disruptors through to world leading brands to extract maximum value from R&D and innovation investments.

sagentia.com/innovation

For further information visit us at:
sagentia.com/innovation or
email info@sagentiainnovation.com


**Sagentia Ltd**
Harston Mill
Harston
Cambridge
CB22 7GG
UK

**Sagentia Ltd**
First Floor
17 Waterloo Place
London
SW1Y 4AR
UK

**Sagentia Inc**
1150 18th Street
Suite 475
Washington
D.C. 20036
USA


sagentia
INNOVATION