



Desirability, Viability, Feasibility

Your recipe for successful physical/digital innovation



How to capitalise on a physical/digital market opportunity

Everyone knows that technology innovation has the power to transform business, propel growth and create new market leaders. But not everyone knows how to get started – or has the confidence to get started. Hesitancy is of course understandable. Diving into the unknown without a firm belief in a successful outcome is daunting and potentially imprudent. What's the answer?

When a physical/digital opportunity begins to emerge, the perfectly understandable instinct is to develop a concept and test, re-test it and test it again. Actually, that's the right attitude – but we believe it needs a robust, structured approach to really make the idea fly. Without doubt, the best approach is the design thinking process known as DVF (Desirability, Viability, Feasibility.) Tracking the development of an innovation project against these key criteria ensures much greater efficiency in terms of both time and budget.

It's a process that was formulated several decades ago, but in recent years we have honed it for technology-driven opportunities. CC teams use DVF to instil confidence in ambitious clients and help bring bold, new-to-the-world ideas to market. In this eBook, I plan to reveal the methodology, benefits and practical applications of DVF, and explain how it can unlock the next generation of physical/digital products and services.

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DVF – the learn-fast paradigm

The DVF approach represents a learn-fast paradigm that activates success through three parallel streams in an iterative way. It is particularly well suited to physical/digital innovation – that is when companies reach beyond traditional physical products to incorporate technology to expand their business.

At CC, we've coined the term Product+ for this area of innovation. For us it emphasises the additive value that digital services innovation can bring to brands and companies with strong physical product heritage. Many such organisations find the Product+ challenge hard. And many have been kicking the innovation can down the road. The uncertainty is understandable, but it can mean that the market moves on without them.

Design thinking and the origins of DVF

Design thinking is rooted in the idea of building creativity into the process of innovation. It was coined in the 1950s by John E. Arnold, MIT and later Stanford professor. In the 1980s, its practical application was championed by design and consulting firm IDEO who translated the early principles into a practical process – DVF – which has been successfully adopted for a wide range of business challenges beyond product design and engineering.

A word on getting it right...

We know that DVF is particularly well suited to Product+ innovation because – frankly – it is an area where we've seen the most time, effort and money wasted on poorly structured initiatives. When this happens it's often because they were missing out on at least one of the DVF lenses during development (we share some examples of getting it wrong later in the eBook). But another classic failure is to work through the lenses sequentially. The key is to work in parallel, with continual iteration.



More than a process, it's all about expertise

This process is nothing without expertise. DVF works best when it is driven by people with hands-on experience of running all three streams highly proficiently. In our experience here at CC, it pays to take a multidisciplinary approach across your team and ours, marrying industry insight with deep tech expertise.

There is great value in defining and scoping opportunities by blending engineering, technology, design and market sector perspectives. Such an approach is especially relevant for Product+ solutions, where the seamless integration of hardware, software and application (the user need) can make or break an initiative.



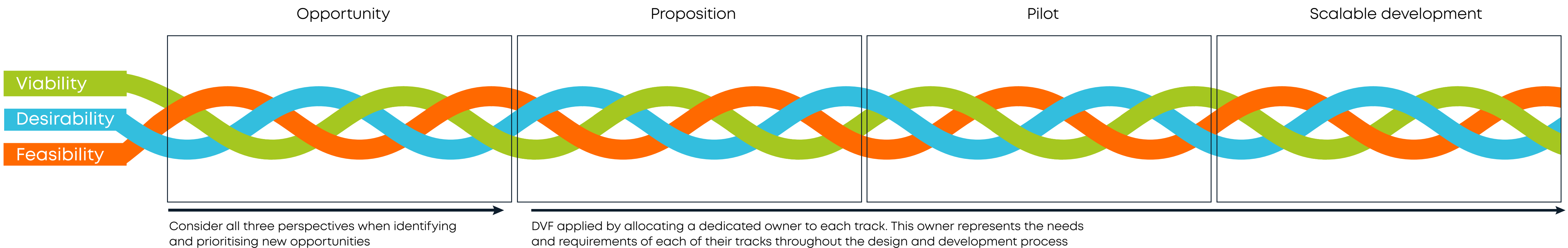


Three streams flourishing in parallel

Innovation tradition says that either the user-driven concept or new technology come first – followed in sequence by each of the missing elements needed to achieve a breakthrough. But this can constrain thinking and lead to the wasted time, effort and money that I've already referred to. Worryingly, it can also lead to pursuit of a dead-end opportunity.

We believe that the answer to this conundrum is to activate the DVF approach and progress the three separate but interconnected workstreams:

- D** **Desirability** - the user need... what is the value proposition that answers an important need?
- V** **Viability** - the business impact... can we make a sustainable business out of it?
- F** **Feasibility** - the technical requirements... can we create a solution that functions as needed?





How DVF works in practice

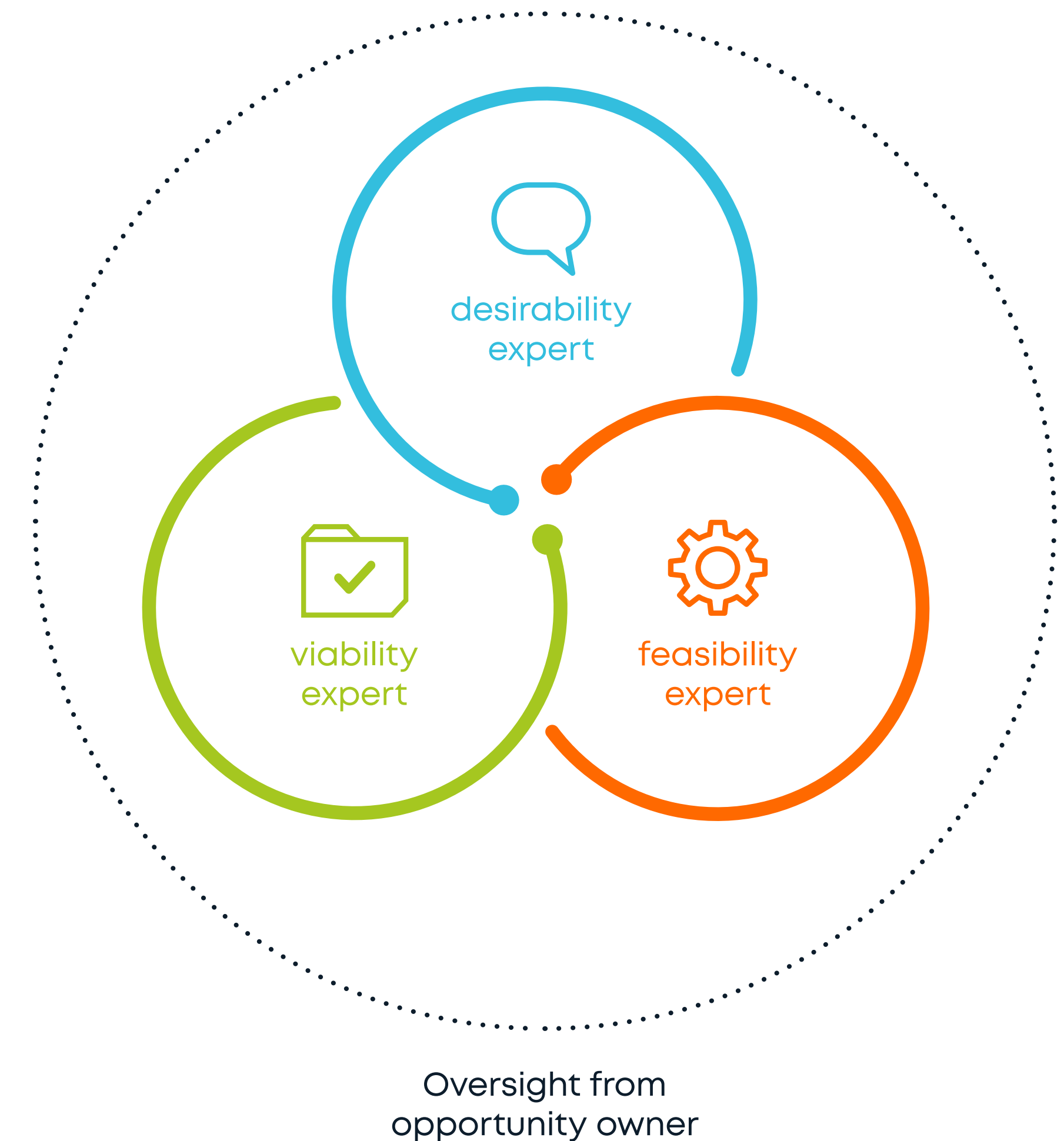
The innovation opportunity is planned and executed through the three lenses of DVF. Each of these lenses, or streams, is led by an expert matched to the requirements of the opportunity who drives the details and delivery in their area. The streams work independently but at regular points converge to share insights and apply their colleagues' relevant learning as they go. Oversight from an opportunity owner ensures the streams maintain this connection and no major insight is lost.

Not only does the process provide a more robust answer to your original market opportunity hypotheses, but it delivers it much faster than if you were following a sequential development path. Using this approach, we've delivered fully tested and approved product into customer hands less than 24 months from the initial concept vision.

Flexibility, flexibility, flexibility

We've talked a lot about the power of running the three streams of a development project in parallel rather than sequentially. But that does not mean the approach is inflexible. On the contrary, agility and flexibility are vital, because not all three streams will have the same weight of importance at every given moment. For example:

- If the hypothesis is based on a well-established customer need but a potential technology solution is unknown, the programme may lean more heavily into the Feasibility stream
- Sometimes the tech is obvious, but the use cases that will drive Desirability are not well defined – resulting in a higher focus on user need





Why is iteration important?

Running DVF in parallel and in a highly iterative way will reveal implications that each workstream must incorporate to ensure a harmonious, holistic solution that is more likely to succeed. I've sometimes witnessed companies utilising siloed project groups for each stream. A big mistake. Open and constant collaboration is vital to achieving a balanced iterative approach. A monthly catch-up simply won't cut it.

Say, for example, the new iteration of your concept promises auto-personalisation for any user, But the Feasibility team has not included user identification in the specification. And the Viability team can't accommodate added technology cost in the business case. It's important all teams are aware so that all assumptions can be tested.





When development projects go wrong

In these examples, at least one element of DVF wasn't up to scratch – resulting in failure

Google Glass

Wearable 'smart glasses' designed to augment user reality. Launched 2013, production ceased 2015, launched Enterprise version 2017.

What went wrong?

The concept lacked the clarity on why the product should exist

Value proposition and user need were ill-defined... a fashionable device for everyday use or specific utilitarian functions

A mismatch between D and F

Airbus A380

World's largest passenger plane launched in 2007 but production ceased just 12 years later due to falling market demand. Airbus invested more than \$25bn into the total development and it took eight years of production to be able to deliver a single aircraft without making a loss.

What went wrong?

The airline hub-and-spoke model couldn't win over point-to-point travel

Convenience (point-to-point) was key for customers, and they were willing to pay more for it

Rising fuel prices meant airlines chose smaller engines over larger jets

A mismatch between D and V

Amazon Fire Phone

Smartphone with a 'Firefly' feature which effectively acted as a mobile price-comparison tool for customers. Launched 2014, discontinued 2015.

What went wrong?

Not enough focus on the user

It met business objectives but not user need

Unappealing design, poor UX

A mismatch between D and V



The 5 key CC principles for adopting DVF:

01.

Aim for integrated decision-making

Thoroughly consider each of the DVF lenses during shortlisting and prioritising, and be mindful of teams' natural biases and associated gaps and risks.

02.

Learnings trump hypotheses

Facilitate early, frequent learning and user-driven iteration, but also communicate the scope of activities and be clear on which parts of it are critical to keep consistent.

03.

Pro-actively articulate and manage unknowns

Be systematic and diligent in capturing the difference between known facts and hypotheses, to demonstrate progress and guide prioritisation when it comes to next steps and research needs.

04.

Carefully consider validation toolkit

Specifically for breakthrough ideas, adopt experience-based, contextual and future focussed validation methods and aim to consider all three lenses when defining research requirements.

05.

Culture as critical enabler for DVF to succeed

Be consistent and pro-active in encouraging collaboration, open-ness and clear communication; draw on tools and proven methods to facilitate this specifically in the early days of adopting a new process.

Ready to get started?

Launching major transformative projects can be daunting, particularly where established processes inadvertently constrain current thinking. The DVF approach provides the certainty in navigating crucial paths. Drop me a note if you want to know more about how we help companies take each vital step – and how we can be a partner with you on your journey.

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About Cambridge Consultants

CC has an exceptional combination of people, processes, facilities and track record. Brought together, this enables innovative product and services development and insightful technology consulting. We work with companies globally to help them manage the business impact of the changing technology landscape.

We're not content to deliver business strategy based on target specifications, published reports or hype. We pride ourselves on creating real value for clients by combining commercial insight with engineering rigor. We work with some of the world's largest blue-chip companies as well as with innovative start-ups that want to change the status quo fast. With a team of around 800 staff in Cambridge (UK), Boston (US), Singapore and Tokyo, we have all the inhouse skills needed to help you – from creating innovative concepts right the way through to taking your product into manufacturing.



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Meet the author

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If you're a business leader intent on transforming digitally and growing in entirely new ways, then Jen's got your back. She is able to draw upon more than 20 years of experience in brand and global business management and has a passion for breakthrough innovation and launching new platform opportunities. As her record with brands like Colgate proves, Jen is adept at turning great ideas into in-market success – thanks to her personal experience of designing, developing and commercialising products and services.

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