



Design Thinking and Innovation through Digital Transformation

LCLM 6002 — Design Thinking and Innovation: Written Portfolio

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1. Introduction

Since 2020, the retail and service sector in the United Kingdom has experienced a structural change, expanding e-commerce and digital service delivery far past the big cities and into suburban and rural settings. Small retailers, tradespeople, farmers and independent professionals have been forced to accept the use of online payment, booking and delivery tools that were previously linked primarily to large platforms and much of this has been done in a rapid, informal manner instead of a thought-out use of digital strategy (Klein and Todesco, 2021). Corner shops added QR-codes to payments, market traders created Instagram shopfronts, and hairdressers and fitness instructors went online, and the courier networks like Royal Mail, DPD and Evri were scaled up to handle record amounts of parcels. This assignment considers that situation to be the beginning of two connected activities. Task One adopts a Design Thinking lens, with the aid of user pain points, market gaps, technological enablers and scalability and sustainability potential, to find and rationalize the opportunities in the UK market, where innovation and new venture creation has the highest probability of success. Task Two puts a UK entrepreneur in the spotlight and uses the five steps of Design Thinking Empathise, Define, Ideate, Prototype and Test to create one of these areas of opportunity into a particular new venture idea, including a minimum viable product (MVP) and a testing and refinement plan. A brief critical analysis of Design Thinking as an innovation approach is provided at the end, as the module demands both evidence of critical, and not merely descriptive, interaction with the framework.

The two activities are interrelated and not independent as exercises. Task One operates at the level of the entire UK market and scans through a number of potential opportunity spaces suggested by the scenario and employs an explicit set of criteria to explain why one space is more appealing than the rest. Task Two then focuses to one perspective of an entrepreneur and one opportunity, demonstrating how the same vocabulary of Design Thinking can shift off a general market analysis to a narrow, testable opportunity. This framework is supposed to show not only the depth of analysis that is supposed to occur at Level 6 but also the depth of application of a single, well-fleshed-out concept as opposed to the spread of the same amount of attention uniformly among a variety of ideas that are not related to each other.

2. Task 1: Key Opportunity Areas for Innovation and New Venture Creation in the UK Market

2.1 A Design Thinking Lens on the Digital Commerce Shift

Design Thinking is a human-centred, iterative, approach to innovation that is grounded in the lived experience of the people who will be impacted by a problem as opposed to basing it on the current capabilities of a firm or a new technology (Brown and Katz, 2019). In the case of a market-scanning task, the implication of this lens is that the opportunity areas cannot be delimited by using macro-economic statistics in isolation, but rather by paying close attention to the frustrations, workarounds and unmet needs of particular groups as outlined in the scenario: small retailers, rural consumers, farmers, and the delivery workers who circulate goods among them. According to Dunne (2018), Design Thinking often benefits organisations the most when applied to identify a problem that is not detected by existing planning mechanisms, which is nearly applicable to the scenario of most UK small and medium-sized enterprises (SMEs) that digitised because of necessity, rather than a thoughtful approach (Klein and Todesco, 2021). The extent of such digitisation is also influenced by leadership behaviour as companies whose leaders actively advocated new digital tools were discovered to be converting short-term adoption into more sustainable capacity instead of a one-time shift (Porfirio et al., 2021). The opportunity analysis is structured around four themes as discussed below: user pain points, market gaps, technological enablers, and scalability and sustainability potential, which are based on the requirements of this task.

2.2 User Pain Points

The situation outlines a few sets of groups with actual and definite pain points. Small independent retailers and market traders were pressured into adopting card-only payment and QR codes, which often did not fully understand the systems they were adopting and the transaction fees they were associated with; a study of mobile and contactless payment adoption during the pandemic reveals that perceived ease of use and trust, rather than price alone, determined whether small operators would continue to use a new payment method once the acute crisis was over, and that less digitally confident users were always the slowest and most hesitant adopters (Daragmeh, Lentner and Sagi, 2021). A related, but slightly different pain point to farmers and small producers who are coordinating direct-to-consumer sales through Facebook, Instagram and WhatsApp is the fact that

these are communication tools, and no orders, payments or delivery scheduling can be automatically tracked, which limits the number of customers a single grower or baker can serve before the administrative cost of direct sale outweighs the benefit. Another pain point of rural and suburban consumers is the reliability and cost of delivery. The literature in the field of logistics has long recognized last-mile delivery as the least efficient and most expensive segment of the supply chain, and low-density rural postcodes are structurally disadvantaged in comparison to dense urban zones, as delivery trucks travel farther to deliver each parcel and companies tend to impose this cost on by increasing the delivery window or charging more (Muriel et al., 2022). Lastly, the couriers that enable this growth of home delivery bear their own pain points. The growth in delivery capacity of the gig-economy platform work has consumed much of the recent increase, and a study of the sector in the UK defines it as hyper-flexible yet often precarious, with unstable income, poor bargaining power and low employment security of individual couriers (Tassinari and Maccarrone, 2020). Courier working conditions should be viewed as a real user pain point that any venture that is founded on the back of this trend must approach as opposed to being a mere cost line to be reduced.

2.3 Market Gaps

A number of tangible market gaps are based on these pain points. First, a discontinuity exists in low-cost, minimal, all-in-one digital storefronts based on very small non-specialist retailers and producers, as opposed to the general-purpose e-commerce platforms developed with the larger medium and large sellers, having in-house marketing and technical resources. Second, there is a lack of trusted, ongoing digital-payment assistance specifically targeting older or less confident small business owners; overall results on fintech adoption indicate that one onboarding session is not sufficient, and that enduring confidence, rather than initial sign-up, keeps small operators using a new payment method (Daragmeh, Lentner and Sagi, 2021). Third, there exists a logistics disjunction between parcel networks designed to deliver to high-density urban locations and the lower-volume and more expensive routes to rural locations in England, Wales, Scotland and Northern Ireland; established courier majors has added capacity to the demand, yet the scale of this addition has not bridged the underlying cost and reliability gap faced by rural recipients (Muriel et al., 2022). Fourth, the coordination gap: individual small retailers, farmers and service providers within the same town or region seldom share their delivery paths, marketing expenses or reservation infrastructure, although it might help to lower the cost per transaction of all of them

and make each seller more visible than they would otherwise. This is the most commercial gap, as it is not being filled by either of the big national platforms, which are operated under single large sellers, or by the current local authority or community efforts, which often provide directory listings and not functioning commerce and delivery infrastructure.



Figure: Key Opportunity Areas

2.4 Technological Enablers

Various technologies render new ventures targeting these gaps feasible currently in a manner that it would not have been the case a decade ago. The low-cost technical foundation that a new venture can build without the need to invest heavily in custom-made systems and onto which the broadening base of readily available cloud tools is positioned is the cloud-based collaboration and

booking software of the type that SMEs already utilise to conduct remote meetings, virtual consultations and online booking, and SME digitalisation research views it as one of the key structural facilitators of the post-pandemic SME digital transformation (OECD, 2021). Extensive e-commerce and payment infrastructure such as the QR-code and mobile-wallet payment rails are highly developed and thus a new venture can take advantage of existing services instead of developing payment functionality on its own (Daragmeh, Lentner and Sagi, 2021). The route-optimisation software and parcel-locker or consolidated drop-point models, along with increasing interest in solutions that are lower-emission in the last-mile, provide an effective means of reducing the cost of serving the dispersed rural customers without the venture owning a large fleet of delivery vans on day one (Muriel et al., 2022). Lastly, the informal use of social media that is already used by farmers and traders to access the direct-to-consumer market is already a low-cost mode of customer-acquisition that a new venture could formalise and expand; a study of the social media marketing of small enterprises has found that social media platforms like Facebook and Instagram can have a significant influence on engagement and purchase behaviour when managed intentionally, rather than by chance, as an additional channel (Dolan et al., 2017).

2.5 Scalability and Sustainability Potential

A business opportunity area must be commercially viable to be of interest; i.e. it must be able to expand beyond one or two localities and be sustainable. Scalability here relies on the ability of the core value of a solution, a shared storefront, a shared delivery round, a payment-support service, etc, to be reused across a significant number of towns without each new town being disproportionately expensive or difficult to manage. Recent work on scalability views this as contingent on three levels: the larger system the venture is in, the design decisions of the venture itself, and the ability of the entrepreneur to cope with growth, as opposed to considering scale to be merely a factor of headcount or funding. The potential of sustainability should also be evaluated on the environmental and social but not solely on financial basis. A local system of consolidating deliveries by many small local sellers into local rounds or drop points has the beneficial effect of reducing the number of separate vehicle movements per household in contrast to each individual seller or platform having its own courier network, which aligns with a sustainable entrepreneurship model where ventures are anticipated to create environmental and social value in addition to commercial return, and sustainability is not an add-on once the business has been established (Belz and Binder, 2017). Social sustainability is a concern, too: since the opportunity presented here

involves delivery labour, any business taking it up must be evaluated in terms of the risk of contributing an additional unstable courier job to an already unsustainable local labour market (Tassinari and Maccarrone, 2020).

2.6 Prioritising the Opportunity

Combining pain points, market gaps, technological enablers and scalability, a single new payment application or a single new delivery-drone application is not the most viable opportunity area, but an integrated local-commerce model: a shared digital storefront and pooled delivery service designed specifically around small, non-metropolitan retailers, producers and service providers in the UK. This opportunity lies at the cross-section of a real unmet need, which is a coordination and delivery cost to small, dispersed sellers; a defensible market gap, given the existence of existing platforms serving either large retailers or individual consumers but seldom clusters of small local sellers; an enabling technology, such as cloud booking, mobile payment and route optimisation; and a plausible scalability, based on a model that can be replicated town by town using a broadly consistent operating template instead of a model being rewritten every time. Task Two extends this opportunity into a particular venture idea through the five steps of Design Thinking.

Two areas of opportunity which were contemplated and excluded, but which it is well worth briefly mentioning, were that credible prioritisation must demonstrate what has been excluded and the reasons, rather than merely what has been adopted. An all-rural-drone or autonomous-vehicle delivery venture was shelved due to the fact that though technically encouraging, it requires regulatory approval and capital investment far beyond what a new UK venture could raise in a short time, and would not help solve the above coordination gap. A project to provide digital marketing training to small retailer was shelved as well, as training in isolation will not fix the underlying issue of delivery cost that causes rural and suburban customers to hesitate to place an order with a small local seller to begin with; it would address a symptom rather than the root cause of the problem. The common storefront and shared delivery idea was chosen specifically because it solves the coordination and cost issue head-on, with already proven but not experimental technology.

3. Task 2: A New Venture Concept Developed Through the Five Stages of Design Thinking

3.1 Empathise: Understanding the Affected Users

Empathise stage involves putting assumptions aside and developing a real sense of the individuals the venture is intended to serve, which is usually achieved by observing and talking to people and not just summarizing the understanding through desk research (Brown and Katz, 2019). There are three user groups that are the most important in this concept. Small retailers and producers, including hairdressers who provide appointments, market traders, farm shops and independent bakers are time-poor and in many cases self-educated about the use of digital tools; their major bottleneck is not that they are unwilling to sell online but that they do not have time, technical confidence and financial support to do so effectively and continue to do so after the initial set up is completed. The rural and suburban shopper desires the convenience they have become accustomed to of the national service, but would be charged a higher delivery fee or longer delivery time than urban consumers, and would make purchases of local sellers out of choice and not just obligation. Delivery partners desire predictable, well-compensated work; current studies of the gig-economy indicate that flexibility is actually highly appreciated by certain couriers, but is often coupled with income instability and lack of employment security that a responsible new venture would not just reenact under a new brand name (Tassinari and Maccarrone, 2020). As a matter of practice, empathy work on this venture would consist of systematic discussions and brief shadowing of a small sample of traders, rural households and couriers in one pilot town, as opposed to making assumptions that have been lugged over without analysis of the broader situation.

3.2 Define: The Problem Statement

The synthesis of these observations is as follows: the small, non-metropolitan retailers, producers and service providers in the UK have no affordable, easy method to sell online and deliver goods to customers reliably, since the current e-commerce and delivery infrastructure is designed to work with either large retailers or individual couriers, not with clusters of small, local sellers collaborating. This fact meets the main criterion of a Design Thinking problem definition, which is that it must be precise enough to serve as a guideline during the ideation phase but not be structured around a solution that the team has already made up its mind about (Dunne, 2018).

3.3 Ideate: Causal Mapping, Brainstorming and Generating Solution Concepts

A brief causal map was offered before brainstorming on specific solutions to ensure that the problem was organized instead of going directly to the ideas. Causal mapping is a problem as a system of cause and effect connections instead of a statement, which assists a team in viewing where an intervention will produce the most extensive impact instead of merely treating the most apparent symptom (MacLennan and Markides, 2021). In this venture, the map follows a simple path: that the low population density means that the delivery cost per parcel is higher, which means that couriers and platforms will charge rural customers more or deliver less frequently, which means that rural consumers are discouraged to order products through small local sellers, which means that these sellers will have fewer orders and so will find it harder to justify making their own delivery or online-ordering system, which in turn forces the starting point of this chain back to the high cost of delivery per parcel and low population density. When mapped as in this manner, consumer behaviour is not a high leverage point of intervention and neither is the web site of any individual seller, but rather the cost of delivery per parcel when many orders are aggregated on the same round should many of the downstream effects in the chain become loosened simultaneously. This understanding then informed a guided brainstorming session against the problem statement in section 3.2, which yielded three solution concepts, which were compared. The first option was to have one national application that would get all small retailers in the UK linked to the single delivery network; this was ruled out as too capital-intensive and too time-consuming to develop the local trust necessary to be adopted during a pilot program. The second option was a pure payment-support service that assisted small traders in utilizing digital payment means with comfort; it solved part of the identified pain point in section 2.2 but did not solve the discoverability gap. The third option that is being developed is option three, which is a town-by-town shared digital storefront and shared delivery cooperative, provisionally called LocalLoop. Within this concept, a group of small retailers, producers and service providers in a particular town will share a single simple online storefront and booking platform, and their orders will be combined onto shared local delivery routes operated by a small set of direct-contracted, fairly paid couriers instead of a purely gig-based system, and respond directly to calls in the platform-work literature in search of less precarious alternatives to standard gig contracting (Tassinari and Maccarrone, 2020). This idea was preferred as it operates on the highest-leverage node noted in the causal map so that no new infrastructure needs to be developed from the ground up (OECD, 2021) and provides a

realistic route to duplication in new towns with a widely standardized template, which suits the need to scale found in section 2.5 (Belz and Binder, 2017).

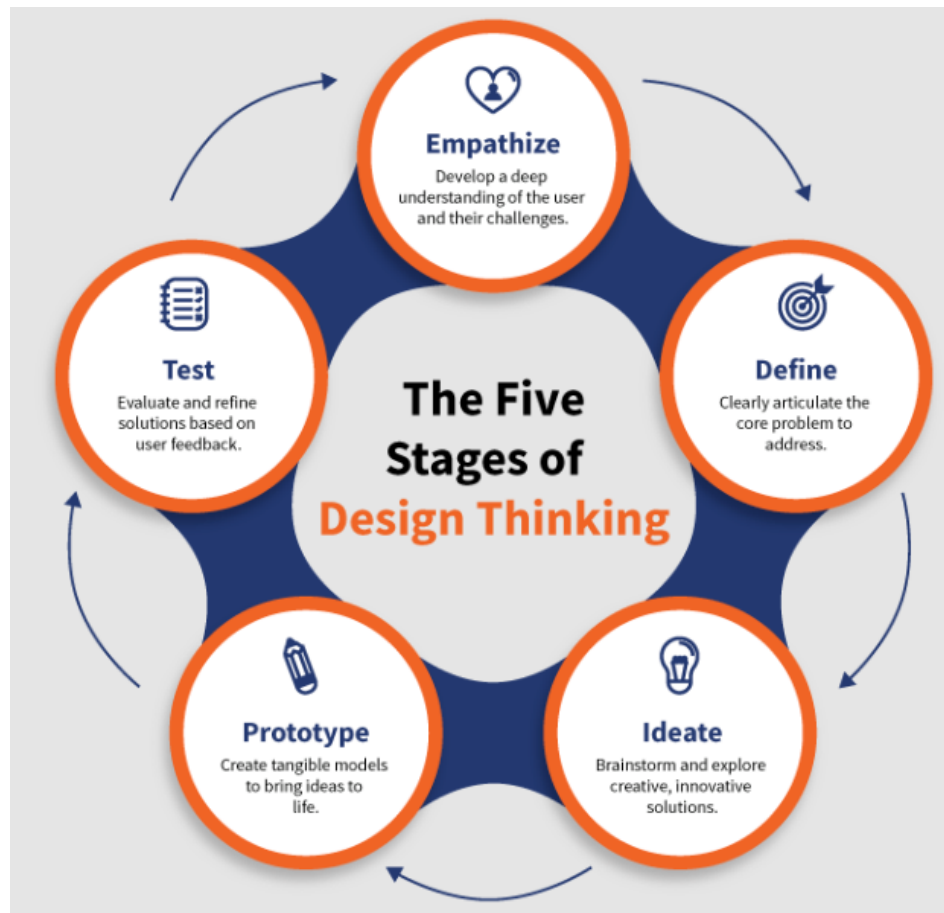


Figure: Design Thinking Stages

3.4 Prototype: The Minimum Viable Product

Instead of attempting to develop the full platform at once, the suggested MVP is a barebones pilot in one town: a shared web storefront with five to ten participating sellers, developed off the back of an existing low-cost e-commerce template instead of bespoke software, with two weekly delivery rounds provided by two directly employed local couriers serving the town and the surrounding villages. This resembles the lean-startup philosophy that an MVP must be the barebones of a solution that can produce actual customer feedback, but not a watered-down version of all the future features (Dennehy et al., 2019). The concept of maintaining the MVP purposefully small is also a response to an identified weakness of some implementations of the lean methodology, which is that an MVP that is created with the sole aim of minimising initial effort may not yield any substantial learning experience, in case it is too narrow to model the actual

customer experience; the LocalLoop MVP is thus scoped to one full end-to-end journey, including browsing, ordering, payment and delivery, rather than a feature test that merely partially addresses the key question of delivery cost (Felin et al., 2020). The initial, face-to-face relationships that market organisers and local business associations already have successfully employed would be used to recruit the sellers, rather than digital advertising at a cost, and keep the initial customer-acquisition cost low until the model is proven.

3.5 Test: Validating and Refining the Concept

A pilot period would last between eight and twelve weeks, and include testing order volume per seller, delivery cost per parcel, customer repeat-purchase rate, and courier earnings and staff turnover. All three user groups (identified during the Empathise phase) would provide structured feedback, not only customers, as the satisfaction of sellers and couriers is just as important to the viability of the model to be replicated in other locations. Design Thinking does not view testing as the last step but as a chance to reiterate earlier steps (Brown and Katz, 2019); in case, for instance, the shared storefront seemed too generic by the sellers to reflect their own brand, the team would go back to Ideate to consider the possibility of lighter customisation within the shared platform, and in case delivery costs turned out to be too high in the most sparsely populated rural rounds, the team would revisit the Define stage to reconsider what types of settlements the model can reasonably serve initially, instead of attempting to serve all geographies simultaneously. This loop is in line with the entrepreneurship research that Design Thinking has practical value in the creation of new ventures not in its five stages followed strictly in a sequence but in the discipline of repeatedly testing the assumptions against the actual user behaviour until it makes a commitment of further resource (Klenner, Gemser and Karpen, 2022).

4. Critical Evaluation of Design Thinking as an Innovation Approach

Design Thinking would be a valuable prism in this assignment since it compels one to focus on actual user experience and not begin with technology or an already existing business model, but it is not without its problems, and the cognitive and intellectual skills criteria of the module demand that this be merely brought out into the open and not obscured. Laursen and Haase (2019) suggest that in its popularised form consisting of five stages, Design Thinking is not deep and methodological guidance that the authors identify as designerly thinking, and provides a checklist of stages without providing sufficient direction on how exactly to select, configure and apply a particular tool at each stage; a student or founder can go through Empathise, Define, Ideate, Prototype and Test in name but still generate shallow, underdeveloped insight at every stage. Dunne (2018) also concludes that organisations that have attempted to implement Design Thinking frequently have problems with ambiguous objectives, low legitimacy, and lack of follow-through into action once the initial workshop adrenaline has worn off, which is indeed a risk to a venture like LocalLoop when it comes to moving beyond its pilot town and into its second and third locations. Another weakness, which is directly applicable in the given situation, is that a completely human-centred process may underestimate structural constraints, like an employment status, minimum wage law, and courier contracts terms, that are outside the empathy of an individual user but that have a significant impact on whether a venture is viable and responsible in practice (Tassinari and Maccarrone, 2020). Lean-startup thinking utilized during the Prototype phase, and which is parallel to Design Thinking, has a similar risk of promoting incremental, readily visible experiments at the cost of a more ambitious underlying theory of the business (Felin et al., 2020). These reasons have led to the application of Design Thinking here as a tool and not as a framework in and of itself, alongside entrepreneurship, digital transformation and sustainable-entrepreneurship literature, to the extent that it can answer all the questions new venture poses.

5. Conclusion

A Design Thinking lens on the UK post-pandemic transition towards digital commerce suggests a particular and justifiable opportunity: collective, low-cost digital front office and common delivery to small, non-metropolitan vendors, rather than an individual new app or payment button considered in isolation. Applying Empathise, Define, Ideate, Prototype and Test with causal mapping and systematic brainstorming yields a tangible venture idea, LocalLoop, the MVP of which is small enough to test inexpensively and has a viable growth trajectory due to its reuse of existing technology and a repeatable local template instead of necessitating the creation of new infrastructure on a ground-up basis. The critical assessment above demonstrates that the primary value of Design Thinking to this assignment is its strictness to repeatedly revisit real user evidence, as opposed to making an initial commitment to a particular solution, so long as its drawbacks in terms of methodological depth, follow-through in implementation and structural blind spots are mitigated by integrating it with broader innovation, digital transformation and sustainable entrepreneurship literature, which has been attempted throughout this portfolio.

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