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# DMCC: Economic Impact

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DMCC: Economic Impact

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## Executive summary

**The Digital Markets, Competition and Consumers (DMCC) Bill is currently being considered in the House of Lords.** It would create a novel competition regime for digital markets and this report seeks to help MPs, Peers and other policymakers anticipate potential impacts of the new law and the scale of risks that the current Impact Assessment (IA) has not properly assessed.

Possible impacts of an ex ante regime without sufficient legal and consumer safeguards include:

- ❖ UK consumers and business users receiving worse, and less diverse, services;
- ❖ the UK becoming a less attractive destination for investment; and
- ❖ smaller businesses, that are less able to shape and benefit from regulatory interventions, being put at a disadvantage.

Those risks, not properly assessed in the IA, could materially affect the **overall estimate for the economic impacts of the DMCC:**

- ❖ With a flawed characterisation of digital markets, described in more detail below, the DMCC risks creating a self-fulfilling prophecy. There are flaws in the existing quantification in the IA, but the most fundamental problem is its failure to quantify the risk that, its interventions could suppress effective sources of dynamic competition, apparently vindicating escalating regulatory oversight while diminishing the quality of digital services available to British consumers.
- ❖ Existing research suggests such risks are common in regulated markets and their scale can be estimated by assessing (a) potential delays to innovation, with regulation meaning that there is an ongoing consumer loss from missing out on potential innovations not yet reflected in better services; and (b) some potential innovations being prevented entirely, creating a deterrent to investing in new services and/or bringing them to the UK.

❖ In an Appendix to this report we model these two impacts, finding that over a ten-year period (even in our more conservative six month delay scenarios) there risks being a

- ❖ **£55bn-£160bn net present value impact on consumer welfare** resulting from delays over 10 years, reaching £8bn-£35bn a year by year 10; and
- ❖ a loss in investment in digital services of 4% to 8%.

The priority for policymakers should be to strengthen those checks and balances through appropriate amendments to DMCC **including those introduced by the Government in the Commons. Appropriate amendments can promote restraint in the CMA's implementation** including ensuring that consumer impacts are fully-considered at each stage of the process, allowing greater consideration of merits in appeals and managing the extent of conduct requirements.

- ❖ There are structural weaknesses in how consumer interests would be considered, which means there is a greater risk of over-regulation. There is also a shift from a merits to judicial review standard for tribunal review of interventions, outside of decisions over penalties, despite their being similar to those under the Competition Act 1998, which are subject to full merits appeal.
- ❖ Outside the immediate legislative process, it is important that policymakers scrutinise a novel and flawed conception of digital markets based on “tipping” and widespread market power, not dynamism and competition among major players. This “revisionist” view is wrong and would lead to erroneous use of existing Competition and Markets Authority (CMA) powers, has contributed to problems in the DMCC framework and would lead to mistakes in implementation of the DMCC.

These problems reflect limitations in the underpinning analysis, which are reflected in the **Impact Assessment**:

- ❖ **Drawing inappropriate conclusions from challenges with existing policy.** The IA argues that the DMCC can mitigate the costs associated with delays in competition policy, but (as the IA argues) these are created by the complexity and dynamism of digital markets. These same characteristics mean that mistakes in regulation will be more frequent and more important if regulators intervene too early or with too limited an understanding of competitive constraints in the market. These challenges with existing policy constitute a reasonable case for improving the analytical resources available to regulators, but not for the DMCC's changes to the competition law framework.
- ❖ **Generic rejection of UK competition norms.** It uses general arguments about the UK market (e.g. that margins may be rising) to argue for a digital-specific change in competition policy.
- ❖ **Missing important market characteristics.** It does not take proper account of supply-side substitution and deems large digital platforms to have market power on an incomplete and overly high-level basis. It then regards attempts to enter new markets as threatening to extend that market power into new settings, rather than as a practical source of competitive discipline and beneficial innovation.

The UK has traditionally taken a sceptical view of the extent to which ex ante competition interventions in digital markets can improve outcomes for consumers, with ministers and officials noting the extent of dynamic competition and the risks of premature interventions. For example, Alex Chisholm, an earlier CEO at the CMA, argued that the “most significant risks, in my view, arise from premature broad-brush ex ante legislation or rule-making in markets that are still rapidly evolving.”

The DMCC risks embedding a flawed revisionist attitude to these markets, adopting what academics have in other contexts called an “end-of-history” illusion that although dynamic competition and entry may have occurred in the past, entry is now infeasible.

❖ **The UK Government’s earlier view that emphasised the role of dynamic competition, supply-side substitution and resulting limits to power remains a better characterisation of most digital markets.**

Entry is common and means competition can arise from market actors that do not currently sell into a certain segment, but have the potential to do so. This can include:

- ❖ **Supply-side substitution:** where firms enter a new segment based on extension from their existing customer relationships, role in the market and/or technical infrastructure. For example, online intermediaries such as e-commerce and gig economy platforms entering the digital advertising sector.
- ❖ **Vertical extension:** where firms that operate at one point in a vertical supply-chain extend their offering either downwards (closer to the final consumer) or upwards.
- ❖ **New entry:** where entirely new platforms enter the market, but often with significant resources, or a new approach, e.g. e-commerce platforms that have distinctive supply chain relationships or generative AI platforms that provide a novel way to answer existing search queries.

In light of that contestability in digital markets, **many of the requirements in the DMCC create distinctive risks to dynamic competition and valuable improvements in digital services:**

- ❖ Intervention risks undermining new entry (making entry less attractive and more technically challenging) and distorting competition between users of digital platforms by favouring users better able to mobilise to engage with regulators.
- ❖ Constraints on platform interactions with users will complicate the process of improving services over time, creating bureaucratic obstacles to new ideas within digital platform companies (as any changes require more regulated processes to change), create immediate compliance costs and may alter the consumer experience in ways they find confusing and unwelcome.
- ❖ Requiring platforms to enable new kinds of interactivity between services will often create practical challenges to the delivery of quality services (and meeting other policy objectives) and will diminish the potential of new players to innovate and differentiate by compelling a standardisation in services.

# 1. Recommendations

Given the scale of the potential risks and the problems with the underpinning analysis described in this report, we recommend the following.

## 1.1 Recommendation #1 – introduce regulatory restraint in the DMCC

The risks identified in this study raise the importance of restraint in the CMA’s implementation of the DMCC. At present, the Bill has been designed instead to emphasise speed of action, which increases the risks of premature intervention. The Bill could be amended to introduce greater restraint, including:

- ❖ Improving the procedural framework, ensuring that consumer impacts are fully-considered at each stage by the CMA, shifting the consideration of countervailing benefits to the start of the conduct requirement process (as well as maintaining it as a defence when a breach is found) and - as the Government has done with an amendment at the Commons stage – shifting from the ‘indispensability’ standard for countervailing benefits. The indispensability standard can be replaced with a more flexible requirement, based on the nature of the practice – e.g. there may be more evidence available for more mature services -and this can hopefully be achieved as the Government amendment is implemented.
- ❖ Allowing full merits appeals, as in existing Competition Act cases, removing the shift to a Judicial Review standard, is likely to mean fewer mistakes. This could mitigate the risks described in this study to some extent, and create a more transparent process (as any appeals will address the merits of the intervention, enabling a public assessment of the CMA’s logic and evidence for acting), meaning that interested parties can better engage with the regulatory process. The Government has introduced this for penalties and doing so more widely (possibly on a time-limited basis as recommended by Sir Robert Buckland) would improve outcomes and – Linklaters research suggests – allow the end-to-end process to move faster on average.
- ❖ Managing the extent of conduct requirements, either in the aggregate by requiring the CMA to minimise the range of requirements in each SMS firm code of conduct, or by removing some conduct requirements as interventions that should require separate and specific approval by Parliament outside the DMCC (e.g. establishing new economic regulation by regulating prices and other commercial terms).
- ❖ Requirements for regular reviews of the DMCC’s operation as a whole, with a particular mandate to test for impacts on dynamic competition, and specific SMS conduct requirements, so they are revised if the underlying competitive environment changes.

The changes made so far and further improvements should reduce the likelihood of premature regulation and the scale of unintended consequences.

## 1.2 Recommendation #2 – test the revisionist view of competition in digital markets

New analysis is needed to update and more widely improve the understanding of the role of dynamic competition reflected in the DMCC IA. The revisionist view of competition in digital markets has a range of consequences:

- ❖ Without the DMCC, it could drive premature regulation by the CMA using its existing powers, including merger control and in acting on market investigations.

- ❖ In shaping the DMCC, it creates a bias towards hastening action, versus considering potential unintended consequences and likely market solutions.
- ❖ When the CMA is called upon to implement the DMCC it could increase the risk of over-regulation using those new powers.

In other words, the flawed revisionist view of digital markets competition is likely to create problems whatever happens to the law, but the problems will be more profound if the DMCC goes without appropriate amendments. There is a need for a review of the thinking that underlies the DMCC and the Impact Assessment reviewed in this study regardless.

New analysis of competition in digital markets is needed that addresses:

- ❖ New trends, such as rising competition in the critical digital advertising segment.
- ❖ Consequences of obstacles to supply-side substitution, vertical extension and dynamic competition more broadly, building on the initial analysis in this paper.
- ❖ Impacts of regulation in multi-sided markets, developing rigorous processes to anticipate winners and losers with regulatory intervention.
- ❖ Impacts on investment, innovation and the quality-adjusted cost of consumer and small business services, including - beyond the scope of this study - how it interacts with other new regulatory requirements (e.g. the Online Safety Bill).
- ❖ Any lessons from the implementation of the EU DMA, particularly in the event the DMCC can be delayed to allow for a proper review of any challenges exposed by its implementation.

This investigation could be requested by Ministers, or insisted upon by Parliament as it considers the Bill. It could form part of a revised Impact Assessment, which might also address more specific issues such as the lower-than-plausible estimate for compliance costs.

## 2. Introduction

### 2.1 Traditional UK government view of digital competition

The UK government has traditionally taken a sceptical view of the extent to which competition interventions in digital markets can improve outcomes for consumers, noting the extent of dynamic competition and the risks of premature interventions.

This has been true at the political level, with Baroness Neville-Rolfe, then a Government spokesman for the Departments for Business, Innovation and Skills and the Department for Culture, Media and Sport, saying:<sup>1</sup>



The OECD found that consumer switching has a low cost and that the level of new consumers entering the market is high, which is providing dynamic competitive pressure. This high level of dynamism and certainty means that leading players may face more competitive pressure at first than you think. So you have seen a succession in this dynamic process over time as new disrupters come along. You may feel that there are some platforms that are unassailable, but we know from the history of innovation that things can change very quickly. So it is crucial to judge the effects of each situation individually and carefully before intervening too strongly.

1 'Online Platforms and the EU Single Market, House of Lords Select Committee on the European Union – Internal Market Sub-Committee. 14 December 2015. <https://committees.parliament.uk/oralevidence/5141/html/>



The same view was echoed by regulators at the time, with then CEO of the CMA Alex Chisholm saying:<sup>2</sup>

// I see 3 types of risk: (i) acting prematurely, (ii) inadvertently ossifying evolving market structures, and (iii) acting too late. The most significant risks, in my view, arise from premature broad-brush ex ante legislation or rule-making in markets that are still rapidly evolving.

As of 2017, in response to proposals from the European Commission, the Department for Business, Energy, Infrastructure and Skills offered a series of “hypotheses”:

// Competition in these industries may be less obvious, but just as effective in terms of delivering positive consumer outcomes. In particular the use of innovation to enter and re-define the boundaries of markets, competition for the market, and stronger competition on one side of the market than on the other (in multi sided markets) may all be able to produce positive competitive outcomes. Furthermore it may be hard to define the boundaries of a market or of a sector if current and future competitive constraints on firms may come from sectors that have traditionally been thought of as not part of the same market.

Whilst network effects and tipping points may make market entry more difficult, they may also make the reward for a successful market entry greater, and encourage competition for the market.

Regulatory interventions may stifle innovation in one of two ways. Firstly, there is a risk of reducing the ability to innovate by increasing the direct cost of innovation or by mandating certain standards. Secondly, there is a risk of reducing the incentive to innovate by expropriating investments made in novel products, and allowing free riding.

Research into these hypotheses looked across a number of the sectors that would be regulated by the DMCC and found that “network effects, which might otherwise act as a barrier to entry, encourage dynamic competition”, meaning that “online platform market shares tend to be fragile, limiting the extraction of material rents”.<sup>3</sup>

This reflected the expectations of pioneers in the economics of digital platforms, with Evans & Schmalensee writing that they expected: “better, or at least different, matchmakers [digital platforms] will come along and have their turn at disruption”, calling the view this would not happen an “end-of-history illusion”. This reflected an analysis that digital platforms “just like any other businesses, can differentiate themselves”, participants had proved an ability to switch (often via multihoming<sup>4</sup>) and network effects were often negative (e.g. more competition for prominence among creators on a more popular platform).<sup>5</sup>

This view led naturally to a sense that interventions by regulators in digital markets should be at least as cautious as in conventional markets; that there was a need for a more sophisticated understanding of direct and indirect impacts on consumer welfare; and that there was an increased risk of unintended consequences.

2 ‘Alex Chisholm speaks about online platform regulation’, Speech given by CMA Chief Executive, Alex Chisholm, at the Bundesnetzagentur conference in Bonn, October 2015. <https://www.gov.uk/government/speeches/alex-chisholm-speaks-about-online-platform-regulation>

3 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/602816/Digital\\_Platforms\\_report\\_new\\_BEIS.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/602816/Digital_Platforms_report_new_BEIS.pdf)

4 Multihoming is the ability of users to use more than one platform, e.g. having multiple messaging apps on their phone.

5 Evans, D. S. & Schmalensee, R. Matchmakers: The New Economics of Multisided Platforms. 2016.

## 2.2 Background to the bill

The DMCC reflects a change in the UK government’s attitude to competition in digital markets, informed originally by the Furman Review. This argued that “competition is currently insufficient with winner-takes-most dynamics in many markets” that reflected “platforms’ anti-competitive behaviour and acquisition strategies” and “network-based and data-driven platform business models” that, despite limited evidence particularly over the longer-term, “tip markets towards a single winner.”<sup>6</sup>

The Furman Review looked at a series of sectors and concluded that the top two providers were growing fastest. In some cases, its evidence base reflected trends that have since changed (e.g. digital ads). Other providers are growing faster than the largest two in the crucial digital advertising sector, for example. However, its recommendations (e.g. the creation of a new Digital Markets Unit to regulate the sector) are in large part reflected in the DMCC now proposed.

Following the Bill, there were a series of investigations by the CMA which argued that it could intervene more effectively with a new legal framework. This process ultimately concluded, after consultations and a Government White Paper, in the proposed DMCC Bill.

## 2.3 Next steps and the purpose of this study

The goal of this study is to help Peers and other policymakers understand the potential impacts of the measure. The scale of these powers means that the risk of premature regulation, or regulation that ossifies evolving market structures, is real and the scale of the consumer benefits associated with evolving digital services means any mistakes will have major economic consequences.

The DMCC is a broad bill and includes changes to the consumer protection framework (e.g. measures that purport to address subscription traps). This report focuses on the measures that address competition in digital markets. These are the measures that are considered in Annex 1 of the Impact Assessment: A new pro-competition regime for digital markets.

The rest of this report will cover:

- ❖ **The DMCC** – unpacking the rationale and risks for the different kinds of intervention it allows and its likely incidence, how the costs and benefits are likely to be distributed among the users of digital markets.
- ❖ **Contestability in Digital Markets** – reviewing the scale and importance of existing routes to entry in digital markets, particularly supply-side substitution, vertical extension and “pure” new entry.
- ❖ **The Impact Assessment** – reviewing the analysis that the Government has conducted thus far on the impact of the Bill – and particularly Annex 1 in the Impact Assessment.
- ❖ **Impact Quantification** – an illustrative quantification of the impacts of any ossification of digital platform markets resulting from the DMCC and particularly obstacles to supply-side substitution.
- ❖ **Our Conclusions.**

6 Furman et al. Unlocking digital competition: report of the Digital Competition Expert Panel. 2019.

## 3. DMCC framework

### 3.1 Overall framework

There are two broad kinds of measure envisaged in the DMCC:

- ❖ Conduct requirements, these would be applied to large digital platforms, found to have “strategic market status” (SMS) and constrain their behaviour in a range of ways (considered below)
- ❖ Pro-competition interventions (PCIs) which are highly interventionist remedies available after identification of an adverse effect on competition in existing market investigations, but aim to move faster and intervene sooner.

These will be implemented by a new Digital Markets Unit (DMU) within the CMA (already created pending a statutory role). The broad objective has been to create a framework where the CMA can intervene in digital markets in an ambitious way and quickly. Besides the specific constraints that might be imposed on platforms, there are two stark departures from the current regulatory approach in these proposals.

First the consideration of consumer benefits is far less explicit than is currently the case in competition investigations. This is crucial because digital platforms, like most multi-sided markets, serve a vital function in enabling transactions (and thereby competition) between parties.

There is no requirement in setting conduct requirements to show actual or even potential harm, or state how the intervention would address or prevent that harm.

In the subsequent implementation of conduct requirements, companies can point to countervailing consumer benefits to justify certain behaviours. This mirrors the existing “objective justification” defence in competition law – an important mechanism to protect consumers from inadvertent over-regulation. This obviously comes with considerable risk as firms would have to knowingly breach their code of conduct (with large potential penalties) before asserting consumer benefits as a defence to that breach, and is therefore not an effective means to ensure consumer benefits are front and centre in the design of conduct interventions.

The core challenge lies around the “indispensability” standard and the failure to adapt this mechanism from backward looking (*ex post*) regimes for a forward looking (*ex ante*) one. In Competition Act cases today, competition authorities have to prove to a high standard that the conduct in question has anti-competitive effects. Once the authority has established a clear anti-competitive harm, companies can justify their conduct on the basis that it creates “indispensable” consumer benefit, i.e. that there is no less anti-competitive alternative means of producing these benefits that outweigh the negative effects on competition.

But the new SMS regime does not require the DMU to undertake detailed analyses of anti-competitive effects: the DMU will not, we understand, have to establish the scale and extent of anti-competitive harm in the same way as under the current regime. Simply looking at whether a practice fits into the category of ‘self-preferencing’ or other categories of conduct says very little about whether and to what extent the conduct actually harms competition.

Presumptively prohibiting conduct that could plausibly be good or bad for consumers (such as self-preferencing), while setting an ‘indispensability’ standard for showing consumer benefits, will lead to over-enforcement, meaning UK consumers may miss out on beneficial products or services.

Furthermore, as a forward looking regulator, the DMU will have to make assessments on the competition impacts of novel technologies where there is likely to be less evidence to draw on. As such, it will be almost impossible to understand what other possible means exist of achieving the similar consumer benefits. This will make the “indispensability” standard unattainable for some of the newest innovations that the UK wants to maximise.

For all these reasons, the Government amendment in this area that changes the language from indispensability is an important clarification that will help promote regulation based on a more complete understanding of consumer interests.

There are also concerns around the framework for so-called pro-competitive interventions, which could have significant impacts on affected sectors, similar to those currently only imposed after an in-depth market investigation and identification of a specific adverse effect on competition. Stephen Dnes argues that without “stronger evidentiary requirements, the PCIs risk discretionary government control over large companies”.<sup>7</sup>

Second, there are limits on appeals with the Competition Appeal Tribunal only able to review under Judicial Review. This is a departure from the existing competition regime, which allows appeal on the merits. It is also a largely procedural review and does not examine the merits of the case, i.e. whether the right or wrong decision was reached. It will be riskier to invest in innovation in the UK if incorrect decisions cannot be appealed. The change will also diminish the transparency of the process as a whole, as the substantive merits of a CMA case for a contentious intervention cannot be explored if court cases focus only on the process, likely further weakening the position of consumers versus more connected economic interests seeking to exploit the regulatory process. It may also weaken the incentive for the CMA to act with appropriate caution, increasing the risk of “broad-brush ex ante legislation or rule-making in markets that are still rapidly evolving.” The former head of the Government Legal Service, Sir Jonathan Jones and Verity Egerton-Doyle, have argued that this change “raises concerns about due process”.<sup>8</sup>

// The new DMU will be taking highly significant decisions in a new and developing regulatory context. There is a strong case for subjecting those decisions to a standard of appeal that allows the tribunal to determine whether the decision is ‘materially wrong’.

They also point out that this may not accelerate progress to the extent that proponents of the DMCC hope:

// A successful JR (applying the “traditional” narrow test) may well not be the end of the matter, but may simply have the effect of restarting the clock – by requiring the decision maker to retake the decision, re-run a consultation or otherwise repeat its processes. This may well take much longer than the appeal/review proceedings themselves. An appeal on the merits, on the other hand, can look at the substance of what went wrong, making it easier (and quicker) for the decision maker to put it right.

There has been an amendment in this area from the original bill, with a shift to merits review of penalties imposed. This will not affect the substantive progress of interventions in digital markets, unlike an ex post regime the penalty is not the principal means by which the regulation has an effect on behaviour. The CMA intervenes by setting conduct requirements, not by taking enforcement action against a generalised ex post regime. It will provide some reassurance to regulated firms, however. Sir Robert Buckland, MP proposed to go further and have a full merits review in the early years of the DMCC being implemented, when the CMA’s interventions are most novel and there is the greatest potential for error.

7 <https://truthonthemarket.com/2023/05/31/no-more-kings-due-process-and-regulation-without-representation-under-the-uk-competition-bill/>

8 <https://www.competitionlawinsight.com/regulatory/the-new-digital-markets-unit-153432.htm>



These kinds of changes are welcome because, in simple terms, the priority that has been placed on enabling rapid interventions will enhance the risk of premature regulation in complex, evolving markets which could stifle innovation, or in itself create barriers to entry.

The CMA noted in its AI Foundation Models review:<sup>9</sup>

**Overly burdensome regulation may make it unnecessarily difficult for competition and innovation to flourish, and at worst may lead to concentration and become a significant barrier to entry in its own right.**

The risk to innovation and acting too quickly in a market that regulators do not properly understand similarly led the Prime Minister to recently state that with respect to AI the “UK’s answer is not to rush to regulate.”<sup>10</sup>

Over time, the role envisaged in the DMCC, and weaknesses in the accompanying checks and balances, could make the attitudes of the CMA and its leadership increasingly important to economic outcomes across a broad range of sectors. This is likely to politicise the regulator, undermining its broader role.

## 3.2 Types of requirements

There are a broad range of potential conduct requirements considered in the DMCC, and we will not cover all of them here, but we will consider the potential impact of some of these measures, including the potential unintended consequences if their use is not properly constrained.

### 3.2.1 Regulating prices and other commercial terms

Digital platforms will need to justify that their commercial terms (including prices) are “fair and reasonable” with the DMU deciding whether that requirement has been met, often consulting with business users. This is an approach normally used in the regulation of essential facilities or a patent required in a standard. In the event that an agreement cannot be reached, there is a final offer mechanism where the DMU will outright decide the appropriate price.

The ex ante setting of fair and reasonable conditions will be challenging and create new risks.

First, as we have set out in Section 4, digital markets have often proved contestable in the past and many if not most are subject to at least potential entry in the future. There is a risk of a self-fulfilling prophecy if a regulator, captured by a theory of digital competition that regards monopoly as near-universal, sees a market with high market shares and intervenes ex ante but, in doing so, makes the market both less attractive and more technically challenging for new entrants. This is not the case in the FRAND regulation of more traditional natural monopolies.

Second digital platforms are by their nature multi-sided markets. Their prices often reflect an exchange between two different users on the platform (e.g. user and advertiser) as much or more than they reflect their own income. As Ricard Gonçalves noted in a Europe Economics Staff Working Paper: *“A network, in its attempts to set prices so as to maximise its profits, actually produces a socially optimal outcome, because the objectives of the network exactly coincide with those of society.”* This because *“a reduction of output in one market may raise profits in that particular market, but because of the network externality, it reduces profits in the other market proportionally more, thus reducing overall profits.”*

If regulators intervene, they will often not just affect the relationship between a digital platform and its users, but between different categories of business users. In some cases, those users

<sup>9</sup> <https://www.gov.uk/government/publications/ai-foundation-models-initial-report>

<sup>10</sup> Prime Minister’s speech on AI: 26 October 2023, <https://www.gov.uk/government/speeches/prime-ministers-speech-on-ai-26-october-2023>

will not be as well-placed to understand and mobilise to defend their interests, particularly consumers or small businesses. There is therefore a risk over time that producer interests are systematically advantaged vs consumers (exacerbated in the DMCC by the structural weakness in this area described above), or large businesses enjoy an advantage against smaller rivals less able to justify the fixed costs associated with regulatory engagement. If designations over time result in a broad range of activities being affected, directly or indirectly, this could result in the CMA becoming de facto responsible for setting prices across much of the economy.

Finally, it is not clear that the regulator will be able to make a reliable and stable judgement over what are appropriate commercial terms in the event it gets drawn into an arbitration role. In many existing cases where similar duties have been put in place before a straightforward issue is in dispute; ample precedent exists on which regulators can base their decisions; and/or the sector at issue moves sufficiently slowly that awards need not be re-litigated at regular intervals.

The combination of these challenges is particularly important: if a market is regulated prematurely, the effective balancing of prices and other conditions between different groups using a digital platform as an intermediary is likely to be upset, undermining the performance of the network as a whole compared a scenario where the platforms have an incentive to balance those interests optimally. If this results from a regulatory requirement and therefore applies to most or all of the competitors in a sector (or the incentive to enter the market is diminished), however, then unlike in a dynamic market context an underperforming network will not then be supplanted by other digital platforms better able to balance the interests of different kinds of users. Regulators may therefore make mistakes with lasting consequences in deciding between final offers, much more likely if such powers are not limited to exceptional circumstances by an insistence on free, fair and reasonable negotiations and allowing for the potential of a “no deal” outcome.

This kind of outcome is particularly likely if imposed *ex ante* in reflection of a flawed theory of competition, than *ex post* or (quasi-)voluntary ones where significant market power has been found, after detailed consideration, in a specific case.

Overall, therefore, we draw three key points from the DMCC’s discussion of fair and reasonable conditions.

1. Given that fair and reasonable conditions (or their FRAND/RAND equivalents) are used to address essential facilities, the DMCC’s proposed use of such conditions implies that policymakers see digital services as not merely monopolised but essential (akin to a patent required in a standard or an essential facility) – which reflects a flawed characterisation of those markets, as noted later in this report.
2. The correct objection to “fair and reasonable” requirements is not to FRAND per se as a response to significant market power but, rather, to the flawed theory of competition that makes the DMCC’s proponents believe there is widespread (near-universal) digital monopoly in the first place.
3. Although some form of FRAND requirement would be likely as a response to a determination of monopoly in the digital sector under any competition regime, the DMCC would be more likely to result in *ex ante* FRAND requirements across the board, rather than FRAND being used as a competition or merger remedy, a competition test or a quasi-voluntary commitment or contractual obligation. And *ex ante* FRAND requirements are more likely to cause damage, if imposed in reflection of a flawed theory of competition, than *ex post* or (quasi-)voluntary ones where significant market power has been found, after detailed consideration, in a specific case.

In implementing FRAND regulation, DMCC includes a final offer mechanism whereby CMA can step in and decide between two final offers in the event the parties do not reach a deal. In addition to the impacts of a FRAND requirement in general, there are specific issues that are likely arise with using such a mechanism that is untested in digital markets, often used to solve disputes where parties are close together and threatens freedom of contract if appropriate safeguards are not in place.

### 3.2.2 Regulating how digital platforms interact with their users

There are a wide range of potential requirements that will shape how digital platform companies interact with their users. These include:

- ❖ Regulating how complaints, particularly by business users, are handled.
- ❖ Regulating how information is communicated to users and when services change.
- ❖ Regulating how the company uses data, often requiring separation between datasets collected in different circumstances.

These requirements will have potential consequences beyond the consumer effects.

First, these changes will create immediate compliance costs.

Second, they may also alter the consumer experience (e.g. requiring new kinds of communication) in ways that (whether or not they address regulators objectives) are hard for consumers to understand and complicate their experience. Straightforward examples might include multiple services not working as well together, users being sent communications about changes that do not necessarily impact their experience, or an overly formal complaints-handling process.

Third, they make it harder to improve services over time, which harms consumers using those services, with more bureaucratic obstacles to new ideas within digital platform companies. This is true both for measures that specifically address changes to services, dictating how this can be done directly, and through requirements that are not about changes explicitly but in practice require platforms to check for compliance with a tick box exercise, legal checks or even negotiation with the regulator and other interested parties.

### 3.2.3 Regulating how digital platforms interact with each other

This will include both:

- ❖ Requirements for choices within digital platforms, e.g. requiring that multiple browsers options are presented to users in a mobile operating system
- ❖ Requirements for digital platforms to work with other services, e.g. operating alternative virtual assistants in a mobile operating system.

The objective in both cases is to try and diminish apparent obstacles to even competition.

These kinds of measures can create simple practical challenges and thereby undermine the quality of digital services. If a user has problems with an interoperable service, which of the two platform providers is responsible for helping them fix it? These problems can create further costs and in many cases diminish the convenience of consumer services.

The deeper risk is that this kind of requirement can make it harder for platforms to differentiate themselves, again risking a self-fulfilling prophecy where regulators intervene and undermine the potential for market entry. In all kinds of markets, it is common for incumbents to have advantages associated with their incumbency, such as already having the required fixed capital in place or having established relationships with customers. These advantages are overcome, in part, by new firms providing a service that is differentiated. That differentiation will often require a different commercial model (e.g. integrating new kinds of services) or technical approach (e.g. new data included with messages). Compulsory standardisation can undermine this by requiring that people build platforms (either from the start, or once they have attained sufficient scale to be regulated) that work with the others in the market. The contours of how a service functions needs to be similar so that these interchangeable parts can be presented to users as choices required by regulation.

Some degree of interoperability can be preferable, with benefits such as bringing higher safety standards from one platform to another and larger effective networks. However interoperability is most likely to be a net positive when it is developed as a market collaboration or, failing that, imposed cautiously by regulators based on a thorough procedural framework.

### 3.1 International comparison

While many jurisdictions have considered changes to their competition regime in light of the growth of digital markets, the comparator that is most similar in terms of its scale and ambition is the EU Digital Markets Act.

There are important differences, however, beyond specific requirements. DMCC gives much greater latitude to the CMA as a regulator. This is intended to give flexibility, but also means that the UK regulator will have much greater discretion to take quasi-legislative decisions over, for example, the distribution of benefits between different classes of users of digital platforms. It also means that an impact assessment necessarily needs to consider the potential impacts based on how the mechanism is likely to be used, based on that mechanism's design, versus the more direct impacts of a given policy.

The other major difference is likely to be that, because the DMCC relies upon specific conduct requirements being developed by CMA, its impacts are likely to be more uncertain and apply more unevenly across the market, particularly at first. The DMA's requirements will apply to every firm meeting relevant thresholds after designation, whereas the impact of the DMCC will spread over time as conduct requirements are developed (and potentially challenged). This difference is not absolute, however, as there will still be a need for the European Commission and regulated firms to implement its requirements, fleshing out the detail.

### 3.2 Categories of cost, scale and incidence

Overall, we can see two broad kinds of costs and/or risks with the DMCC, which will be distributed across consumers, business users and regulated firms:

- ❖ Static regulatory costs including:
  - ❖ Administrative costs, e.g. reading and understanding the DMCC and subsequent guidance for its implementation.
  - ❖ Compliance costs as affected businesses will be required to engage with the process and then make substantial changes to their operations.
  - ❖ Wider regulatory impacts as platforms are required to change prices and terms and conditions.
- ❖ Dynamic impacts as obstacles rise to innovation, entry and thereby efficiency in digital platform markets, worsening outcomes over time.

In a Technical Appendix to this report quantify those impacts, including in particular the longer-term dynamic impacts. We find that over a ten-year period (even in our more conservative six month delay scenarios) there risks being a

- ❖ **£55bn-£160bn net present value impact on consumer welfare** resulting from delays over 10 years, reaching £8bn-£35bn a year by year 10; and
- ❖ **a loss in investment in digital services of 4 per cent to 8 per cent.**

It is also worth considering how we should expect those costs to be distributed, who will bear the costs of the DMCC?



In-scope companies will face the most direct consequences of the DMCC. These consequences will depend to some extent on whether the DMCC reflects part of an international trend or whether it (and the EU's Digital Markets Act) remain somewhat exceptional in their scope and ambition. However, we can anticipate three kinds of impacts: direct impacts on compliance costs; shorter-term impacts on profitability; and longer-term impacts on the ability of these businesses to adapt over time.

This regulation will create tangible costs both in terms of pure compliance– understanding the implications of the regulation and putting in place processes that will mean they can evidence compliance if required; technical changes – e.g. creating choice screens, enabling interoperability, support as those new options create new challenges for consumers; and executive attention. This will then have impacts on firm behaviour, including:

- ❖ Opportunity costs, resources that could go into innovation will instead go into compliance. This might include scarce resources such as those with deep expertise in how platforms operate, people who are vital to the innovation process but also need to support compliance.
- ❖ Cultural impacts as the requirements of the DMCC, combined with large potential fines, could create an organisational aversion to innovation, as new or updated services will mean new compliance work and new regulatory risks, some workers in regulated firms may simply not choose to pursue innovation.

Complying with this regulation will also affect regulated companies' ability to respond to other public policy priorities. Regulatory costs and technical requirements, e.g. interoperability, could combine to undermine other regulatory objectives (e.g. platforms might be under new requirements to share data, or send messages originating from other platforms). These risks may be worth bearing in some instances, but the emphasis in the DMCC on acting quickly and with fewer checks necessarily exacerbates the risk of unintended or disproportionate impacts on other priorities.

If the regulation works as intended, the Government anticipates in its Impact Assessment that the margins of regulated businesses will fall. The combination of technical obstacles to the development of new services and a regulatory environment that diminishes the return on successful digital networks is likely to reduce innovation and market entry. If we consider this in a similar way to how other burdens on companies are normally studied, the incidence of this burden can fall on shareholders; workers or consumers.

There are two plausible scenarios:

- ❖ To the extent that the DMCC remains somewhat exceptional and the regulated market is relatively competitive, the incidence might largely be first on UK consumers as fewer digital services are launched or prioritise the UK market. There may then be an impact on UK investment and thereby workers. If the UK is a less advanced consumer market for digital services, it is likely to become a less attractive market in which to invest in building such services over time, weakening investment and therefore employment, taxes and other outcomes. A large and cutting edge domestic market will tend to mean specific characteristics and preferences in that market, which producers will find it advantageous to be “on the spot” to understand (to have their “finger on the pulse”). If the market is smaller or less advanced it is more likely that firms will produce globally, with domestic consumers getting more imported and more generic variants of the product rather than having their own idiosyncratic needs and preferences met. Over time the burden will therefore be borne in large part by workers, with consumers also seeing diminished services, but less than if such regulations are duplicated globally.
- ❖ To the extent that the DMCC is matched in other countries, the impact may initially be more on shareholder returns but, over time, this will raise its cost of capital diminishing innovation and the quality-adjusted cost of consumer services. Over time the principal burden will therefore be borne by consumers with workers likely also losing out, but less than if the regulation is UK-specific.

Small businesses are likely to be affected in three ways by these measures, downstream of these consumer and worker impacts:

- ❖ As consumers of digital services, they will be affected in the same way as consumers.
- ❖ As suppliers or distributors of digital services, they may lose out to the extent that the UK becomes less competitive.
- ❖ As smaller organisations, they will be less able to pay the fixed costs associated with participating in regulated markets – e.g. meeting and developing submissions to regulators, or accurately assessing the impacts of interventions on their interests, as discussed earlier in the section on regulation of commercial terms.

The common theme across most of these measures, driving consequences for UK workers and consumers over time, is that regulation is likely to make entry and particularly supply-side substitution more challenging. This would endanger dynamic competition that has been important in the development of digital markets thus far and appears likely to continue to drive improvements in services now.

## 4. Supply-side substitution, new entry and vertical extension in digital markets

In this chapter, we explore cases of supply-side substitution and vertical extension (which we shall sometimes refer to later, collectively, as ‘extension’ because they involve existing firms using their existing features and resources to challenge firms established in other markets, rather than entering them as new firms), and of pure ‘new entry’. The boundaries between these three cases are not always clear or strict, but the examples we give are chosen to illustrate cases broadly fitting each type.

### 4.1 Supply-side substitution

One very important form of activity in digital markets is what economists call “supply-side substitution”. We can explain and illustrate its significance most straightforwardly with some examples.

- ❖ A classic case of supply-side substitution is Instagram Threads. In this case, at the point Threads began, there was a digital service, Twitter, based mainly around short publicly-accessible text messages / blogs (along with some private messaging) with the possibility of adding images and video content, and another digital service, Instagram, based around sharing videos and images. In July 2023 Instagram’s user base and sign-up system were repurposed to create a similar service competing directly with Twitter. The fact that Instagram’s productive capacity could be redirected in this way to supply services competing directly with Twitter suggests that Instagram’s services (along with any services that were a substitute for Instagram’s) were latent competitors to Twitter.
- ❖ In digital advertising, e-commerce businesses (e.g. Amazon), gig economy platforms (e.g. Uber) and others have been entering the market based on their existing relationships with customers. These provide alternatives to social media and search as a means for advertisers to reach customers at a moment they might be interested in making a purchase. In competing with existing digital media advertising, however, they have to be able to integrate advertising effectively with their existing consumer offer which could be limited by restrictions on the use of data or regulation intended to combat self-preferencing.

- ❖ Public cloud services, are generally based initially on extending the software tools and IT infrastructure that a firm has developed for its consumer services to support cloud customers. Becoming competitive in this market may require new capabilities however (either business functions, e.g. enterprise sales, or technical capabilities, e.g. AI) which might face competition policy obstacles in the form of merger control or restrictions on combining data or supposed self-preferencing.

## 4.2 Vertical extension

Closely related to supply-side substitution is what we shall refer to as “vertical extension” – that is to say, a firm that operates at one point in a vertical supply-chain extending its offering either downwards (closer to the final consumer) or upwards. Some examples of this process are as follows.

- ❖ TikTok entered the social media and digital advertising markets, becoming a major player in both despite obvious network effects on both sides of the market. It did so on the basis of a form that consumers appreciated (short video) and a resulting ability to recommend videos they would find interesting. In doing so, it repurposed assets from earlier platforms. Its creator-centric advertising model works based on greater integration within the platform and is not open to third party advertising platforms (something regulators in some countries have required other digital platforms to enable).
- ❖ Google Maps created a new service, competing with existing satellite navigation but also answering a broad class of searches (looking for local amenities). This in turn faced competition from Apple Maps and from existing providers of maps services, including in-car navigation where many buyers of new cars can use Google Maps through their phone or the navigation that the manufacturer provides.
- ❖ Amazon’s extension into pay TV (Amazon Prime Video) is another example of such extension. Amazon’s extension from an initial offering in books into a wide range of other forms of e-commerce (e.g. by developing the Kindle e-reader) is another straightforward example. Indeed, Amazon has extended further, using its Amazon Fresh e-commerce brand to extend into having Amazon Fresh physical stores, illustrating how the boundaries between digital markets and non-digital markets are also not always clear.

## 4.3 The implications of supply-side substitution and vertical extension for market definition

Naïve analyses of alleged market power in the digital sector often miss or mis-interpret the significance of the roles of supply-side substitution and vertical extension (which we refer to together as ‘extension’). These processes illustrate the importance of one of the “hypotheses” offered in what was until recently BEIS’ position on digital platforms (described above in Section 1): *“it may be hard to define the boundaries of a market or of a sector if current and future competitive constraints on firms may come from sectors that have traditionally been thought of as not part of the same market.”*

The DMCC proceeds as if it were an established fact that certain large tech firms have overwhelming market shares in many key markets. But without a formal analysis of the market definition (and even then) it can be very difficult in digital markets to determine the correct scope of the market, the “relevant market definition”. Actual supply-side substitution and vertical extension are demonstrably important and potential supply-side substitutability and vertical extension could be very widespread. To the extent that digital players are able to enter existing markets by utilising such processes, the broad picture that the DMCC wants to offer of a half dozen to a dozen large tech players with significant market power in each of their own sets of markets may be wrong. A more realistic picture might instead be a fairly broad “relevant digital market” in which perhaps a half dozen to a dozen major players compete more-or-less vigorously with each other, threatening to extend or actively extending into each

others' activities in a cycle of innovation and dynamic market evolution. In reality, of course, this competition across sectors is combined with the potential for new entrants in individual sectors (e.g. new businesses building generative AI systems as alternatives to search engine for some consumer needs).

One further particularly relevant point to note in the above is the roles of information and of brand extension in supply-side substitution and service extension. Ex ante regulatory restrictions that deter firms from using their information to enter new markets or deter firms from extending their service offerings into new markets run a high risk of undermining key mechanisms of competition in digital markets, particularly where there is a lack of appropriate checks and balances. Such restrictions do not belong to that class of interventions that are "fairly harmless even if they prove misguided". Rather, they strike at the heart of key processes by which competition is delivered. Policymakers responding to erroneous analyses of market power by restricting the use of information in new markets or of service extension into new markets are liable to *create* market power by undermining the current mechanisms of competition.

## 4.4 Entry and displacement of digital networks over time

There is a long history of large digital platforms being overtaken by others that were able to differentiate themselves and better serve one or more sides of the market. This covers a broad range of important sectors, including:

- ❖ **Search engines**, where early search engines such as Yahoo! and AltaVista were displaced by Google and Microsoft Bing.
- ❖ **Music**, where earlier platforms were eventually displaced by streaming services: Spotify, Apple Music and others.
- ❖ **Social networks**, where Friends Reunited, MySpace and others were replaced by Facebook, Twitter, LinkedIn and, most recently, TikTok.

In every case, the true market definition is complex with, for example, Facebook providing an alternative to Google in serving digital adverts, direct messaging on LinkedIn or Twitter providing an alternative to WhatsApp or Facebook in sending instant messages.

## 4.5 New entry and challenges in current digital markets

Above we have rehearsed a few historic well-known examples of new entry into digital markets. But if we review current major digital platform markets, we can see that this is not simply a historical period now passed. Instead, there is plausible entry, or growth among existing challengers, in all of them.

### 4.5.1 Online intermediation services

This is a broad category used in European legislation that includes e-commerce in particular. It includes both large e-commerce businesses with offerings across multiple sectors (e.g. Amazon) and companies that are often smaller in terms of global turnover but are large in specific sectors (e.g. ASOS) or have distinctive physical networks in particular geographies (e.g. supermarkets).



There are two categories of challengers outside those categories which are important at the moment:

- ❖ New e-commerce platforms that often have distinctive consumer experiences and relationships with suppliers (particularly in China). Shein and Alibaba are prominent and fast-growing examples.
- ❖ Backend platforms that aim to support consumer brands in building direct relationships with customers, e.g. Shopify. These platforms are intended to enable businesses to build alternative online routes to market besides wider platforms (though many brands will offer their goods on both).

### 4.5.2 Search engines

The major general purpose search engines are Google and Microsoft's Bing, with numerous entrants in the market including Brave, Opera and others. Additionally, innovations, like generative AI, offer a competitor to existing general purpose search engines. OpenAI's ChatGPT is the most famous but there are a number of such platforms and the competitive impact can be seen in both Google and Microsoft working to launch their own services of this sort, or integrate them with their search engines.

It is also important to remember that free search engines are not, in themselves, valuable or necessarily distinct as a market. There are alternatives for both sides of the market, in many cases growing in importance (and themselves facing a competitive constraint from search engines as an alternative):

- ❖ For consumers, a wide range of services provide an alternative means to find the content they want from going direct to preferred sources, portals, social media, e-commerce platforms (the latter particularly important for the most commercially-salient searches).
- ❖ For sellers, search engines are media in which they can advertise. Social media, in particular, will often provide an alternative means to connect with people who are interested in certain topics, or otherwise reveal a propensity to purchase. Equally if a business does not believe it can attain sufficient prominence in a search engine, it can try to get that prominence (organically or paying) in an e-commerce platform.

### 4.5.3 Social networking services

There are a number of large social networking sites. Many of the same issues apply as to search engines, these are means for consumers to share information with friends and family, creators and brands to reach consumers. There are often alternatives in other kinds of digital platform.

At the same time, there has been growth in challenger social networking services. This includes outright new entrants, which often grow to the point of clearly having viable scale as networks. These either persist or fall off to the extent that consumers do not find the service satisfying at scale. The inability of some platforms (e.g. ClubHouse) to last as they grew speaks to the potential for reverse network effects in social networking. These platforms can grow in part because people like their exclusivity. This gets them to a scale at which, if their underlying proposition to consumers is attractive enough, they can compete with larger platforms (if it is not, without that exclusivity their progress can start to slow). This desire for new and exclusive platforms will continue to create risks for large platforms and opportunities for smaller entrants. BeReal would be a more recent and active example.

In many cases, instant messaging applications operate in a kind of hybrid space with social networking services. Discord, for example, is a fast-growing entrant used intensively by some communities (e.g. gamers) and acts as a kind of hybrid between instant messaging, VoIP and social network.

#### 4.5.4 Instant messaging services

Instant messaging is the most extreme example of where users often use multiple services interchangeably. This can include:

- ❖ Dedicated instant messaging services, e.g. WhatsApp
- ❖ Direct messaging in social networks, e.g. LinkedIn
- ❖ Hybrids, such as Discord or Telegram

Some entrants in this market are explicitly premised on offering consumers an alternative business model, e.g. Signal and its focus on privacy.

#### 4.5.5 Operating systems, browsers and virtual assistants

Operating systems have often been displaced when new kinds of device enter the market. Windows for example, was the most popular PC operating system, but marginal in both the preceding mainframe market and the subsequent smartphone market. Those providers and third parties produce key software such as browsers and virtual assistants and there are trade-offs that different mobile ecosystems have to strike between more or less openness, that will reflect different user needs and other circumstances over time.

To the extent that users are choosing smartphones, they can choose between Android and Apple phones, each of which includes a wide range of popular devices. Android, in particular, then has to navigate a multi-sided market including: third party manufacturers (e.g. Samsung); app developers, consumers and business users (as the associated revenue for Google is mostly related to advertising). Many of these are businesses with their own software expertise and past ability to coordinate (there have been earlier smartphone operating system alliances) in the event that the Android offering did not meet their needs. Android provides a free platform that manufacturers can modify to create specific offerings, supporting further competition.

### 4.6 Cloud computing

Cloud computing is different to some of the other sectors considered here in two ways. First it represents a basket term for a particularly broad range of digital services, from software as a service offerings such as Salesforce through to renting compute from a public cloud provider.

In terms of the infrastructure as a service rental of storage, compute and other IT services that is most emblematic of cloud computing, this is necessarily offered by large companies. The point of the offer is to make available IT infrastructure with a flexibility and scale that smaller or less IT-intensive organisations could otherwise not deploy. Competition within this segment takes place at multiple levels, however:

- ❖ There are three major public cloud businesses, with the smallest Google – which can maintain competitive services given its needs in servicing its own consumer facing businesses. There is every sign that these businesses compete for major deals, often interacting with enterprise customers that are capable of thinking strategically about their purposes. Recent polling by Public First for the CCIA found that most companies multi-home (using more than one cloud provider) and, while they use cloud as a means to deliver reliable and secure services, they choose between providers based on competitive criteria such as service quality and value for money.<sup>11</sup>
- ❖ To the extent the market offering from the existing players weakened, other technology businesses that operate large IT infrastructure (i.e. other tech companies) could rent that out in the same way that Amazon originally did. This has happened with Microsoft

11 [https://www.publicfirst.co.uk/files/CCIA\\_Survey.xlsx](https://www.publicfirst.co.uk/files/CCIA_Survey.xlsx)

and Google and reflects that supply-side substitution is a path to entry in this market. In addition, IT companies with established customer relationships, including Oracle and Hewlett Packard amongst others, have used these relationships, and well-known brands to expand into cloud computing.

- ❖ Many organisations have the option of using on-premises IT where the cloud offer does not meet their needs. The recent polling for CCIA mentioned above found that: 29 per cent of cloud infrastructure customers who had switched cloud providers in the past, switched to on-premise.

## 4.7 Digital advertising

Digital advertising is important in that it represents a major revenue stream for many other kinds of digital services, including:

- ❖ Search
- ❖ Social media
- ❖ Operating systems

To some extent, these services can be seen as different means to enter the digital advertising market, which also includes the wider media sector (e.g. TV, newspapers). Many businesses in this sector (not just major tech companies) operate to some extent as intermediaries, helping businesses connect with their final consumers.

The digital advertising market is seeing major waves of market entry, particularly:

- ❖ Online intermediation services (e.g. Amazon, Uber) entering with either search-related or other context-driven adverts.
- ❖ Other media entering, for example subscription video on demand platforms (Disney+, Netflix) creating advertising-funded tiers.
- ❖ New social media, able to offer advertising on the back of market entry in that inherently unstable segment, of which by far the most prominent recent example would be TikTok.

All of this means that the market share of the largest two players, increasing at the time of the Furman report, is now expected to decline over time (albeit with the largest firms still growing in absolute terms as wider ad budgets grow and continue to transition from linear TV).

## 4.8 The challenges of entry: tipping/“winner takes all” vs beachheading

The DMCC impact assessment sets out a number of market characteristics that it says mean a number of digital markets tend to have a “tipping point” beyond which market power becomes vested and it becomes impractical for rivals to compete. The most important of these market characteristics are “network effects”, whereby the value of a digital service is connected with the number of users. These can be network effects operating on the same side (eg in a social network the value of the network to any one user might be increased by the number of other users that there are) or on another side (e.g. the value of a digital marketplace might be increased for product sellers by the number of buyers attending that marketplace and the value to buyers might be increased by the number of sellers attending).

If one network has one billion users and another has 500 million users, and that the average user can never interact with more than a few thousands of other users. In such a case the actual practical advantage of theoretical access to an additional 500 million users may be nugatory – the scope for genuinely valuable network effects has already been exhausted well before the

entire user base is occupied. And when aggregate network effects become sufficiently small, they will easily be dominated by other forms of heterogeneity. For example, suppose there are two social networks based around discussion, and users of one tend to like a slightly more belligerent environment than users of the other. In that case even if there are fewer users on the less belligerent users' network, the gain to users from lower belligerency may easily dwarf even modest differences (let alone nugatory differences) in network effects from sheer mass of users. The same effect may be produced by different choices in platform design: favouring shorter- or longer-form videos, for example, or videos versus text or audio.

In some cases, particularly in competition between larger platforms, network effects may even be negative beyond a certain scale. There are a range of reasons consumers might prefer smaller platforms, including reduced competition on one or more sides of the market the platform facilitates (e.g. creators might prefer platforms with fewer established rivals), larger platforms attracting more unwanted content, or simply a preference for an exclusive platform (younger people may not want to be on the same platform as older people). If positive network effects of scale max out, challenges with scale could start to dominate instead.

Such factors mean that it is by no means the case that network effects always (or perhaps even typically) create a winner-takes-all structure when the total potentially accessible user base is large enough. Tipping is an empirical question about the magnitude of the network effect, the relative size of the networks of different players at issue, opportunities to differentiate a new platform's offer and whether users multi-home. And that, in turn, means that in order to compete, a new entrant does not have to succeed in ousting an incumbent entirely. Instead, it may be sufficient merely to secure a sufficient mass of users to establish a beachhead, with users who were either indifferent, multi-homed or, through preference difference, found the new entrant network preferable. There are a wide range of strategies that firms use to beachhead: investing in attracting one side of the market for example; focusing on niches they can satisfy with modest overall user numbers; or – crucially – starting from a brand, customer relationships or technical infrastructure from other existing services. This last route is where the DMCC might create the lack of contestability that the thinking behind the regulation assumes is already the case.

## 4.9 Overall picture

Across all of the markets above there is a clear pattern. The largest players often have been displaced in the past. However this is not just a historic feature of these markets but an ongoing phenomenon with implications for regulation:

- ❖ In many cases, there are entrants from adjacent markets challenging those existing players already.
- ❖ In those where that is not the case, there is in every instance clear potential for such market entry.

This means that the risks of regulation impeding encroachment or entry are clear and should be top of mind in analysis of the impacts of the DMCC. Unfortunately this appears not to have been the case in the Government's recent change of thinking, where supply-side substitution is completely neglected, vertical extension is seen as purely a threat to competition and pure new entry is deemed broadly infeasible, as we will consider in the next section.



## 5. Impact Assessment

Across the main impact assessment document there are a number of claims made about a decline in competition in the UK.<sup>12</sup> Such contentions may be of broad interest to policymakers and explain a context to the DMCC of the UK government feeling that UK competition in general is declining. But they do not indicate anything specific to the *tech sector* that justifies the DMCC.

We shall now consider key claims from different sections of Annex 1, which addresses the main measures addressing competition in digital markets.

### 5.1 Status quo policy: delays

The case for change in the impact assessment is predicated on a sense that current policy tools (or market solutions, in the form of entry from existing or new market participants) move too slowly. It notes that:

// ‘Ex-post’ enforcement, which refers to intervention following a finding of abuse of market power or an adverse effect on competition (AEC), can mean a long time lag between anti-competitive harm first being identified and it being addressed. As a result, consumers can often experience prolonged, irreversible harms.

Crucially this is true of any ex post enforcement, and (like the findings that are also cited in the Impact Assessment suggesting a general rise in margins) does not justify a distinctive regime for digital markets.

More than that, this general case against ex post enforcement is balanced by the risks that come with ex ante regulation: acting prematurely and potentially ossifying the market with mistakes.

The case the report sets out that such delays are a general feature of digital markets is based on their complexity:

// For instance, the CMA has powers to monitor and intervene in markets through its markets regime, including to impose a wide range of structural and behavioural remedies. Since these tools were not designed with fast-moving digital markets in mind, they are not currently well equipped to deal with the unique challenges these complex markets pose. For example, the prevalence of digital ecosystems that span multiple adjacent markets can often require intervention with a focus that is wider than a single market. Equally, markets prone to quickly tipping and rapid technological change may require a more proactive and dynamic approach to regulation that cannot be achieved through static studies and one-off interventions.

This could make a case for new capabilities for the CMA as a competition regulator. It might be true that, in response to the complexity and fast-moving nature of digital markets, there is a need for specialist teams, more resources, or new analytical models that can better understand digital markets. It would be possible to imagine, for example, that the Bill focused on establishing and resourcing the Digital Markets Unit within the CMA, not a fundamentally different competition policy framework for digital markets.

It is not an effective case for accelerating decisions, or generally for ex ante regulation. The complexity of digital markets increases the potential impact of mistakes in the application of competition regulation.

12 For example, at paragraph 25 the IA reports a rise in overall markups.

It does this in part because the complexity of digital markets means greater potential for outright mistakes unless appropriate external challenge is allowed. It also means market solutions are unlikely to be obvious in anticipation. There will be a tendency to over-regulate, intervening when challengers that might enter from adjacent sectors or offering services that compete on one side of the market (e.g. advertising) but not on another (e.g. search, social media). Furthermore, the rapid growth and dynamic nature of such markets means that the costs of policy errors would be particularly high.

Given that complexity and dynamism of digital markets the risks with ex ante regulation are particularly great versus offline markets, whereas the merits of ex ante regulation are broadly similar: mitigating a delay in improving consumer outcomes. This is why UK policymakers previously took the view that ex post regulation is generally preferable in fast evolving digital markets (see Chapter 1). Indeed, it is at least arguable that insofar as digital competition cases are in fact slower than other cases, that is in itself an indicator of the complexities of defining markets, assessing dominance and determining what is and is not proper conduct – all factors that speak against the likely efficacy of ex ante regulation.

Coming to the same decision as reliably and more quickly will generally improve outcomes for all parties. However it is crucial to distinguish between resolving delays via a genuine efficiency versus doing so by reducing the requirement for the CMA to evidence that its interventions support consumer interests and diminishing external challenge of its most important decisions. To the extent that the regime is faster because those checks and balances are reduced, then the regime will move fast by making more mistakes, which in turn create new “prolonged, irreversible” harms and also have wider impacts on the incentives to build or improve digital services.

Despite the DMCC’s aspiration for proactive measures to dominate, even ex ante regulation will have to respond to apparent market abuse. In the case of the DMCC, this would mean after platforms are designated as having SMS. The idea of the CMA policing digital platform markets to address *potential* tipping towards winner takes all markets is not possible with or without this framework. Given that reality, and the complexity and importance of digital markets, there is a stronger case for decisions to be distinctively cautious than reducing delays by risking greater unintended consequences.

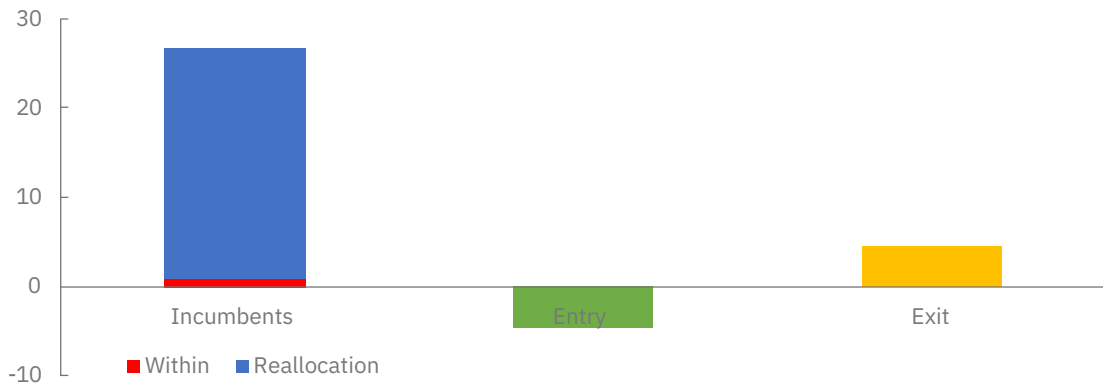
## 5.2 Do rising mark-ups really indicate declining competition?

First, in the Background section, we encounter the following text:

“While the size and presence of ‘big’ digital firms is not inherently bad, there is a growing consensus that this concentration of entrenched market power amongst a small number of tech companies is undermining effective competition, restraining growth and innovation, and causing harm to the consumers that rely on them. For example, the International Monetary Fund (IMF) has found that market power in the tech industry increased significantly between 1995 and 2016, including an increase of over 30% in mark-ups (i.e. firms’ “prices” over marginal costs) and an increase over 10% in concentration, globally.”

This contention is supported by reference to an IMF document, where in turn we see that the source of this claim is the following chart.

**Figure 1: IMF chart on rising mark-ups in the tech sector: Decomposition of Markup Increases in Tech Industry (Percent)**



Sources: *Worldscope*; and IMF staff calculations.

Note: The bars plot the change in overall markups explained by each component, after applying a Melitz-Polanec decomposition to the markup changes between 1995 and 2016. See IMF (2019) for details on the decomposition

Note: In this chart “Incumbents” refers in the general sense simply to firms that already existed, rather than in the sometimes-used sense of an “incumbent” meaning a firm with vested market power.

As the IMF document text explains, what this chart illustrates is that 95 per cent of the “mark-up increase” in the tech sector is accounted for by firms with higher-than-average mark-ups expanding their market share, and that is still 85 per cent of the effect even in more recent years.

But is this really an indicator of market power, as the DMCC IA Annex 1 contends? What it tells us is that in the tech sector, firms that are effective at producing products consumers value and do so cost-efficiently enough that they have higher-than-average mark-ups tend to increase their market share over time. That is not evidence of market power. It would, for example, be what happened if firms were engaged in vigorous Bertrand competition and some had lower marginal costs than others. In a competitive market with differential marginal costs and differential product quality, those with lower marginal costs (and hence higher margins, for a given price) will tend to increase their market share at the expense of less efficient rivals. Firms with higher mark-ups increasing their market share can be evidence of competition working, not competition failing.

Moreover, mark-ups might also change for other non-market-power-enhancement-related reasons. For example, mark-ups are known to differ by sector (e.g. where fixed costs are high but marginal costs are low) and by type of product (which might change over time in a given sector). So an increase in mark-ups could result from a change in the mix of products sold in the sub-sectors falling under the broad “Tech industry” category the IMF refers to. Mark-ups will also often be hard to estimate to the extent users are not all being charged the same price.

### 5.3 Is a backward looking, adversarial system of competition enforcement intrinsically a bad one?

At paragraph 4 we encounter the following:

“Existing competition tools are not suited to the specific challenges in digital markets and competition enforcement is backward looking, adversarial, and notoriously slow.”

Let us set aside the point about the current system being notoriously slow for now, considered later in this chapter. The other alleged weaknesses here are that competition enforcement is “backward looking” and “adversarial”. Yet are these genuinely weaknesses? The norm for competition enforcement – indeed enforcement of almost all conduct restrictions – is “backward looking”. If something improper is alleged to have happened there is an investigation to inquire whether it actually occurred and there may be a court case or tribunal to determine whether the conclusions of that inquiry were correct, or perhaps a court case in which a plaintiff alleges improper conduct and claims damages and a defendant seeks to justify its conduct. Such a process is intrinsically “adversarial” in that allegations of impropriety or unlawfulness are tested in an adversarial setting. But the adversarial nature of UK law is often regarded as one of its key strengths or at least idiosyncratic characteristics rather than weaknesses. To state that the current regime is flawed *because* it is backward looking and adversarial is to build in, from the start, an assumption that the only proper competition system involves *ex ante* regulatory controls, begging the very question at issue.

## 5.4 Market characteristics: Why is there no discussion of supply-side substitution?

The Summary of the document identifies “*weak contestability*” as one of the key characteristics of these markets. Paragraph 4 specifies a key objective of the reforms being to “*make markets more contestable*”. And there are repeated references throughout the document to alleged “weak contestability” in digital markets.

As we explained in Section 4, supply-side substitution is a key source of contestability in digital markets. However neither the DMCC IA nor its Annex 1 refer to supply-side substitution.<sup>13</sup> The analysis does not recognize the concept of supply-side substitution at all.

This is notable because supply-side substitution is such an important and widespread phenomenon in the digital sector, as we saw in Section 4.

Far from recognising how crucial such supply-side substitution is to competition in digital markets, the DMCC IA proceeds in almost precisely the opposite direction. Not accounting for supply-side substitution, and the threat thereof, as a key contestability mechanism, the DMCC approach unreflectively deems large digital firms to have market power, and then regards their attempting to enter new markets as threatening to extend that supposed market power into new settings.

Using *ex ante* regulation to prevent large digital players from entering new markets, risks damaging competitive dynamics rather than enhancing them. By ignoring supply-side substitution, the risk is that intervention could inadvertently vest market power in digital players that would otherwise have to innovate and keep prices down for fear that a competitor would repurpose its infrastructure to enter their market as a challenger and replace them. Having thus created the market power they feared, competition authorities would then presumably feel obliged to create yet more restrictions to limit the freedom of action of firms that regulation itself had turned into monopolists.

## 5.5 Market characteristics: tipping and its alternatives

In Section 4 we have discussed the wide range of actual and potential extension by existing digital players and of market entry by new players – dynamics excluded from the IA. There the picture is that, after perhaps an initial brief period in which it is determined which “winner takes all”, markets “tip” (especially because of network effects) and entry or encroachment become infeasible.

<sup>13</sup> The closest it gets is a passing elliptical reference in the second bullet of 2.60.

This picture seems wrong both in theory and practice. Large digital players ought to be able to extend into existing markets and in practice do so frequently. And all else equal new entry ought to be feasible more often, with much lower start-up costs for digital firms than for many industries (where large capital injections are required to purchase plant and machinery, quite apart from costs of innovation), whilst in practice, as we have seen, such entry has been frequently observed and continues to occur. Beachheading may allow new entrants or encroachers to gain a foothold in large markets even when network effects are significant. Yet the IA does not appear to recognise this possibility at all, let alone have any discussion of what the required size of such beachheads might be and hence how potentially relevant they might be in the digital sectors affected.

Such extensive extension by existing firms and new entry (both in scope and actuality) obviously raises the concern that premature interventions might at best be irrelevant, as market solutions address concerns around market power, and at worst create a self-fulfilling prophecy by making it harder for new entry or extension by existing companies to take place. It is a key reason why the longstanding position of the UK government was sceptical about the merits of imposing regulations in dynamic digital markets.

The response appears to be that this may have been true in the past, but is not true of digital markets now that they have matured and digital platforms have obtained scale advantages that make market entry impractical. This is what Evans and Schmalensee called the “end-of-history illusion” around digital markets and, whether or not it seemed credible at the time of the Furman Review, our Section 4 review of the main digital platform markets now makes clear that it does not reflect the current reality.

## 5.6 Market characteristics: vertical integration

In Section 4 we have set out a number of important cases of vertical extension in digital markets and argued that, along with supply-side substitution, such extension is an important mechanism via which existing digital players can extend into rivals’ markets without the need to enter from scratch. Amazon’s Fire Stick, for example, enabled it to extend its pay TV offering (Amazon Prime Video) into a pay TV network competing with, say, Sky’s Now boxes. In that case, vertical integration resulted in an increase in competition at a level of the pay TV supply chain (pay TV platforms), rather than a decrease.

By contrast the IA does not see vertical extension as a pro-competitive mechanism but rather, as an anti-competitive threat. It identifies vertical integration as creating the “*potential for these firms to leverage their power in one activity, to undermine competition in other stages of the chain*”. It is uncontroversial that vertical integration combined with market power at some point in a supply chain can create competition concerns (albeit the exact nature of those concerns is debated). However, it is far from clear that vertical integration creates any special issues in digital sectors that could justify *ex ante* regulation. Often, rather than active vertical integration tending to vest market power in digital services markets, it may well be a key mechanism for undermining it. Obviously merger assessments may need to take a view on such matters when vertical extension proceeds via takeover of an existing player, but it will be especially difficult for *ex ante* regulation to anticipate such processes without being reduced to “picking winners” in advance.



## 6. Conclusions

The impact of the DMCC will ultimately depend on how those powers are used by the CMA. This open-ended quality means that it is both harder and more important to fully-consider the impacts and distinctive risks associated with the Bill, because there is a greater range for potential impacts. Besides the importance of digital services in themselves to many consumers, the DMCC will give the CMA the power to intervene across a broad range of sectors where digital platforms have a role as intermediaries.

The DMCC and the Impact Assessment reviewed in this study reflect a revisionist view of digital markets which underplays the role of supply-side substitution (and dynamic competition more broadly) and the risks associated with premature intervention in multi-sided markets. There is a risk that this sharp change in perspective, reflecting transient market trends and changing institutional circumstances after the UK exit from the EU, leads the UK down a path of escalating regulation of digital markets. Premature regulation could result in a stagnation of digital platform markets and then justify further intervention, where market solutions could have yielded more effective competitive discipline. All of this is discussed more in the rest of this report.

There will sometimes be competition problems in digital markets, as there can be in offline markets. However, given these conceptual problems, policymakers should be wary of the scale of the revision to the existing competition policy framework envisaged in the DMCC. The Government has taken steps in the Commons and more can be done to mitigate those risks: amending the Bill to mitigate some of its risks.

# 7. Technical Appendix: Measuring the impact of the DMCC

## 7.1 Approach in the Impact Assessment

The Impact Assessment attempts to quantify the costs and benefits associated with the regulation and a set of expected interventions.

There are a number of flaws in the quantification, for example:

- ❖ Estimates for compliance costs are narrow, for example assuming that only SMS firms need to familiarize themselves with the regulations whereas, given the nature of many of these rules, this may also be required for firms that have the potential to become SMS and therefore want to design their services to meet expected conduct requirements; and for business users, which might seek to influence or enforce their rights under conduct requirements. It also explicitly does not take into account the need for disseminate this information throughout the organisation, which would almost certainly be necessary given the substantial requirements envisaged for conduct requirements (with different product and functional teams needing to identify and act upon implications of the requirements).
- ❖ Estimates of the cost of interoperability and other technical requirements focus on the costs of developing the technical systems needed, but much of the cost will consist of the standards, processes and checks needed to do so safely and effectively. Reducing this to the challenge of creating an API or an app underestimates the challenge that comes with integrating services, many of which were not designed for such an integration, along lines that may not reflect how they are intended to function.
- ❖ Some of the upsides involve value transfer from very different settings, e.g. equating TfL sharing open data (often on a reciprocal basis) to enable transport apps to a search engine being required to share data to enable potential competitors. In other cases they reflect gross analyses of whether consumers would value certain rights (e.g. choices over how their data is used) without considering the net economic impact when accounting for the impact on advertising function and thereby ad-supported services.
- ❖ There are also a range of impacts missing, e.g. opportunity costs as regulated firms respond to DMCC requirements instead of addressing consumer priorities, some of which are likely to be material.

Overall, however, the estimated costs and benefits are small relative to the scale of the markets concerned and the greatest risk is that unintended consequences could therefore easily dominate these estimated impacts. This is the risk that we will attempt to illustrate with the quantification in this section.

## 7.2 Existing research

There are a number of studies that have tried to capture the impact of regulation on innovation. For example:

- ❖ Hausman multiplied the length of the delay by the consumer welfare associated with new telecoms service. He found “the approximate ten-year regulatory delay cost consumers billions of dollars. Applying the methodology to the cost of regulatory delay in the introduction of cellular telephone service, I estimate the cost to consumers to be closer to \$100 billion in total, with more than \$25 billion lost in a single year.”<sup>14</sup>

14 Hausman, J. A., Pakes, A & Rosston, G. L. Valuing the Effect of Regulation on New Services in Telecommunications, *Brookings Papers on Economic Activity*. 1997.

- ❖ Braeutigam develops a theoretical framework for considering these kinds of impacts and concludes that: “Higher discount rates, higher costs of engaging in the administrative process, and longer regulatory delay all serve to reduce the amount of R&D undertaken by the regulated firm.”<sup>15</sup>
- ❖ Prieger studies a period in which strict economic regulation was relaxed for US telecommunications networks and finds that “The number of services the firms created during the interim is 60–99% higher than the model predicts they would have created if the stricter regulation had still been in place. Overall, firms would have introduced 62% more services to consumers during the study period if the regulation had not been in place.”<sup>16</sup>

## 7.3 Our approach

Our approach builds on a key insight from these past studies: that consumers lose out if investments and new innovations are delayed or never happen at all (because they are blocked, or the incentive to invest in innovation is diminished to the point it is no longer feasible to go ahead). Regulation can cause this to happen in a number of ways. For example:

- ❖ Delaying the realisation of benefits from investments – this could be because it takes longer for digital platforms to deliver new services when they need to ensure they will meet regulatory requirements, delays relating to negotiating with the regulator and potentially commercial counterparties, and/or outright waiting for regulatory approval. It will mean that benefits occur further in the future, reducing their value, and that there is less time before they become obsolete.
- ❖ Reducing the likelihood that investments are successful – this could be because they are outright rejected by the regulator, because they are found to be impossible within the strictures of ex ante regulation, or because that regulation makes them unattractive to consumers.
- ❖ Reducing the benefits if that investment is successful, for example by requiring that the platform share those benefits with competitors or with their commercial counterparties.
- ❖ Delaying the UK launch of innovations that have already been launched elsewhere in the world.

We estimate two kinds of resulting impacts on digital services:

- ❖ **Delay impacts – round 1 effect:** if services are delayed, consumers will not be able to use them in the interim. Even in the steady state, there will be more services in the process of being developed as those that are completed are replaced by other delayed services over time.
- ❖ **Deterrence impacts – round 2 effect:** if services are delayed, more likely to fail, or less likely to realise returns to innovators then that will reduce the incentive to invest.

Regulation could of course have a number of other complex effects, creating additional potential impacts that we shall not attempt to quantify here, such as if regulation explicitly forbid certain products that would otherwise be valuable or if price regulation had the effect of restricting the return on high-return products to the average. Future research could explore the quantification of these effects.

Our quantification uses as its data inputs a combination of established facts and reasonable indicative scenarios for parameter values.

15 Braeutigam, R. R. The Effect of Uncertainty in Regulatory Delay on the Rate of Innovation, *Law and Contemporary Problems*. 1979.

16 Prieger, J. E. *The Timing of Product Innovation and Regulatory Delay*, UC Davis Department of Economic Working Paper No. 01-9, 2001

For our Round 1 model we estimate the loss to consumers if, as a consequence of the DMCC, the delay between when products are first developed and when they are launched lengthens. One way to think about this effect is to imagine that there is a stock of innovations, at any one point in time, that have been developed but not yet launched. As a consequence of the DMCC the size of that stock increases. The larger the stock, the greater the loss to consumers. As detailed in the next section, where we explain the data we have used, we have obtained estimates of the current value of digital services to consumers, and the rate at which new digital services are launched relative to the current stock. The increase in the stock, at the commencement of the DMCC, would therefore be equal to the amount of launch that would have occurred during the period of delay the DMCC creates – e.g. if the DMCC would create a year’s delay it is the additional digital services that would have been launched that year but aren’t. But because there is growth in digital services over time, the loss from delay, likewise, increases over time. We estimate what that total loss is after ten years, under scenarios for how much delay the DMCC might create.

In our Round 2 model we estimate the impact on the required annuity-equivalent period cash-flow (after the initial investment), i.e. the annual cash-flow which, if it were the same every year, would have the same overall value as the presumably more complex and volatile actual cash flows. The deterrence impact on that annual value depends upon whether one assumes the delay shortens the investment life or is purely a delay.

- ❖ The “delay scenario” will be more relevant if the key reason for the end of an investment life is the emergence of a new competing technology and new competing technologies will in future be subject to the same amount of delay. Alternatively, the delay scenario could be understood as reflecting a world in which the UK adopts a regime that deters internationally-developed innovations from being launched in the UK for a time.
- ❖ The “loss scenario” (i.e. shortened investment life) will be more relevant if it is not the emergence of competing technologies that determines investment life (e.g. if it is some other factor such as the rate of cultural change) or if future emerging technologies would not face the same delay (e.g. if they arose in other sectors unaffected by DMCC). That might be particularly relevant in a world in which other countries adopt similar regulatory regime to the UK so innovations are delayed at the global level.

To estimate these effects, we want to estimate how much higher period returns need to be in order to justify an investment (i.e. in order for the NPV of an investment to be zero or higher). We will then use that, in combination with a distribution of returns, to estimate what proportion of investments that would occur without any such “delay” or “loss” will not provide those required higher period returns. This in turn gives us the proportion of investments that will not occur in these scenarios.

This is achieved through a three step calculation.

### Step 1: finding the marginal investment

First we calculate the ratio between the annuity-equivalent period return and the initial required investment outlay that gives an NPV of zero given an investment lifetime, solving for  $x$  in the following equation.

$$I + \sum_{year=1}^{investment\ lifetime} \frac{xI}{(1 + WACC)^{year}}$$

### Step 2: estimating how much higher the returns on a marginal investment need to be to justify investment with delay or loss

Next we solve the same problem but for a case in which the return during the period of delay is zero (the “loss scenario” – we’ll call the required period cash-flow in this case) and for a case in which the return during the period of delay is zero and there is an additional and equal period of returns added at the end (the “delay scenario” – we’ll call the return in this case).

$$\begin{aligned}
 & I + \sum_{year=1+delay}^{investment\ lifetime} \frac{\hat{x}I}{(1+WACC)^{year}} \\
 & I + \sum_{year=1+delay}^{investment\ lifetime\ plus\ delay} \frac{\tilde{x}I}{(1+WACC)^{year}}
 \end{aligned}$$

We then take the ratios  $\hat{x}/x-1$  and  $\tilde{x}/x-1$  to give us the required increase in period returns under the two scenarios. The required increase in period returns will then be used in step 3 below in combination with a distribution of returns to assess the proportion of investments that would no longer be profitable (and are therefore assumed not to go ahead).

### Step 3: estimating the resulting reduction in investment

Next we need to estimate how these increases in required returns might convert into investment reductions. That will depend upon the distribution of projects from which adopted projects are chosen.

We take two approaches to this.

- ❖ First we use an observed realised distribution of returns as a proxy for the future distribution of expected returns. We set out below the detail of the data we use for this and why it is an imperfect indicator below.
- ❖ Second, we use illustrative scenarios.

Our illustrative scenarios are derived as follows. If we assume the distribution of returns is normal, then if we, as a scenario, assume the hurdle rate means rejecting a known percentage of potential investment projects and that a known percentage of investment projects will be loss-making (even on a period return basis ignoring the initial investment outlay and the opportunity cost) we can use the z-scores of the known percentiles to infer the standard deviation and mean of the distribution, using two equations to solve for the two unknowns.

$$\begin{aligned}
 & z_1 = (h_1 - \text{mean}) / \text{standard deviation} \\
 & z_2 = (h_2 - \text{mean}) / \text{standard deviation}
 \end{aligned}$$

The difference in the cumulative percentage of the distribution that lies above the revised required hurdle rate then gives us the share of investment that is lost.

## 7.4 Data and assumptions

We can source data for the models described above from existing analysis of the digital platform company market along with reasonable assumptions where necessary:

- ❖ Consumer welfare estimates are available from Coyle & Nguyen.<sup>17</sup> This provides estimates by service and we have chosen those provided by large digital platform companies as a reasonable proxy for the total value, but this is likely to be a conservative estimate as the study necessarily only surveyed consumers about a selection of services (albeit, provided the many of the most important).

17 Coyle, D. & Nguyen, D. *Free goods and economic welfare*, ESCoE Discussion Paper 2020-18. 2020



- ❖ Consumer surplus growth was estimated in Brynjolfsson & Oh,<sup>18</sup> estimating values from time use data. While these studies relate to the US (and conclude in 2011) they provide a sense of the year-to-year growth.
- ❖ Estimates for the WACC and ROCE in two large digital platform companies have been produced by CMA based on 10-K forms. While the overall estimate has been criticised by the firms studied, it provides a usable estimate for our purposes.<sup>19</sup>
- ❖ We assume a lifespan of 10 years.
- ❖ We consider scenarios for a regulatory delay of six months or one year.
- ❖ For our observed data proxy we use the data on exit valuations for US venture capital firms.<sup>20</sup>
- ❖ We model the future distribution of expected returns in two ways:
  - ❖ We use data on actual realised returns in the venture capital sector as a proxy for the distribution of expected returns to future digital projects.
  - ❖ We consider illustrative scenarios for the future distribution of expected returns in the digital sector.

## 7.5 Results

### 7.5.1 Round 1 effects

#### Scenario 1: one year delay, 20 per cent growth

Using a one year period of delay, aggregate consumer welfare per consumer of £1,500, assumed total digital consumers in the UK of around 48m,<sup>21</sup> annual growth in consumer welfare of 20 per cent and a social discount rate of 3.5 per cent we find that after 10 years the cost to consumers of a one-year delay in new products arising would be £74bn, roughly equivalent to the value of consumer welfare from digital products for one year. Over that ten-year period as a whole the present value of the 10-year loss would be around four times the current annual value of consumer surplus from the sector – around £290bn.

#### Scenario 2: six month delay, 20 per cent growth

If, instead, we assumed a six month delay and a 20 per cent growth rate, the figures above roughly halve – so the loss in the tenth year would be around one half of the average consumer surplus per year (around £35bn by year 10), and the present value of the 10-year loss would be around twice the current annual welfare from digital services – or around £160bn.

#### Scenario 3: six month delay, 10 per cent growth

A less dramatic effect would be created if the future growth rate of consumer surplus from digital services were to be expected to be materially lower than in the past. For example, with a six month delay and only a 10 per cent annual growth rate, the cost is around one eighth of current annual consumer welfare (around £8bn by year 10) and the present value of the 10-year loss is around 70 per cent of current annual welfare – around £55bn.

18 Brynjolfsson, E. & Hee .Oh, J. *The Attention Economy: Measuring the Value of Free Digital Services on the Internet*, Thirty Third International Conference on Information Systems. 2012.

19 [https://assets.publishing.service.gov.uk/media/5fe4951c8fa8f56af8e88105/Appendix\\_D\\_Profitability\\_of\\_Google\\_and\\_Facebook\\_non-confidential\\_WEB.pdf](https://assets.publishing.service.gov.uk/media/5fe4951c8fa8f56af8e88105/Appendix_D_Profitability_of_Google_and_Facebook_non-confidential_WEB.pdf)

20 See <https://research.ccianet.org/reports/irreplaceable-acquisitions-proposed-platform-legislation-venture-capital/>, in particular Figure 4.

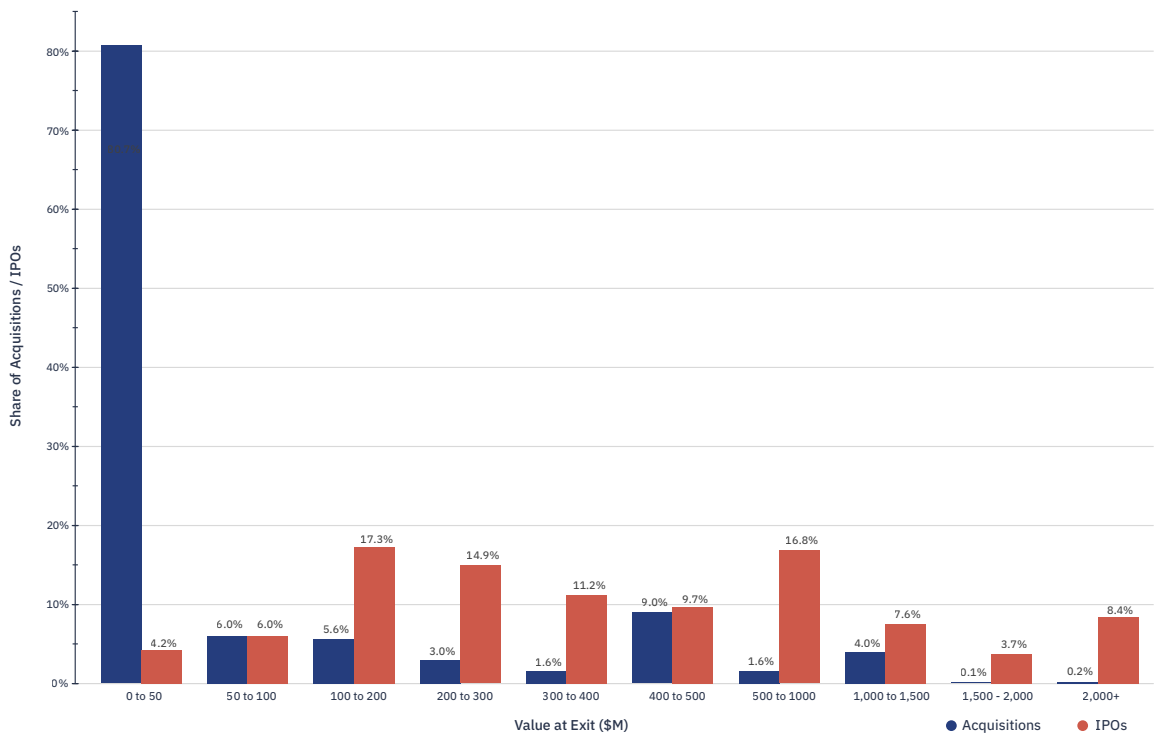
21 UK internet users 18+ - source: Table 24 of <https://publications.parliament.uk/pa/bills/cbill/58-03/0294/ImpactAssessmentAnnex1.pdf>

## 7.5.2 Round 2 effects

Assuming a ten year investment life and a one year delay from the DMCC, we calculate the ratios  $\frac{1}{x-1}$  and  $\frac{1}{x-1}$  using the equations above to give us the required increase in period returns under the two scenarios. The relevant values are 16.7 per cent and 9 per cent respectively. Halving the delay period would roughly halve these values.

The proportion of investment lost, and hence lost consumer welfare, depends on what the distribution of returns will be in the digital sector in future. As noted above, estimating such a distribution in detail would take us outside the scope of this project, but we can illustrate the potential scale through using observed data as a proxy or through some scenarios.

Figure 5-1: Summary of Acquisitions and IPOs by Value at Exit

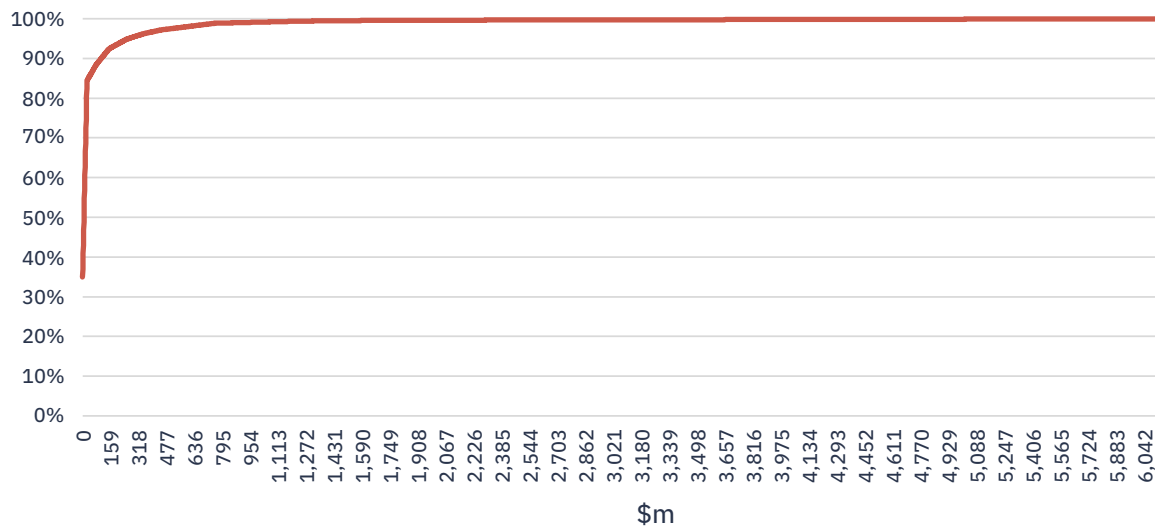


*Excludes biotech companies. Includes exits from August 1, 2002 through March 31, 2020.*

Source: See Footnote 18.

Using this data, along with evidence from the paper giving the proportions of acquisitions vs IPOs and the proportion of shutdowns (which we assume yield zero returns), we create a modelled cumulative distribution of realised returns as follows.

Figure 5-2: Modelled cumulative distribution of returns



We assume the distribution of expected project returns matches this distribution of realised returns and that the mean of the realised distribution (\$89m) reflects our working WACC assumption of 9 percent. That lies just above the 89<sup>th</sup> percentile of the distribution, meaning that just under 11 per cent (10.9) of investment projects would be approved (meet, in expectation, the required hurdle rate) and 89.1 percent would be rejected. If the required expected return were 9 per cent higher (\$97m) that would mean only around 10.5 per cent of projects being accepted, so around 4 per cent of investment projects that would previously have been approved would now be rejected. If the required return rose by 16.7 per cent then investment projects approved would fall by 8 per cent. This is a conservative range for the plausible scale of the round two impacts, a reduction in investment of 4% to 8%.

Although useful as a basis for a distribution of returns, realised actual returns provide only a very imperfect indication of the future distribution of expected returns.<sup>22</sup> It is useful, therefore, to cross-check these data-based findings with figures obtained on the basis of illustrative scenarios using a normal distribution, as described above.

22 We can identify at least four significant reasons this will be so. The first three are associated with the fact that projects will not have identical ex ante characteristics.

- First, projects will differ in their expected returns. Some will have high expected returns and some lower. Each will have a distribution of potential returns around their expected value. The consequence of that is that if, for example, projects with intermediate expected returns are more common than projects with either very high or very low expected returns, some of the weight of high returns and low returns in the realised (observed) distribution will have come from cases where the most common projects – those with intermediate expected returns – have realised returns higher and lower, respectively, than their expected value. Because these projects are more common than the projects with very high or very low expected returns, that overweights those high or low returns relative to those in the middle (or, equivalently, returns in the middle of the distribution are underweighted in absolute terms). This factor would create a distortion even if every project were approved and every project had the same riskiness relative to its expected value.
- Second, some projects are not approved, because there is a hurdle rate. The consequence of that is that the distribution of realised returns is biased upwards relative to the distribution of expected returns.
- Third, projects may not have identical risks. For example, projects with low expected returns might have upwards-skewed potential returns or projects with high expected returns might have downwards-skewed potential returns, relative to projects with intermediate expected returns. Or the projects at the high or low end might have higher variance than those in the middle.

The fourth factor is that observed past returns may provide only a very imperfect indication of the future distribution of expected returns. That will be especially true if they are observed over only a relatively short period, for standard statistical reasons associated with a small sample size. But more generally the future environment may be different from that in the past.

- ❖ For example, let us suppose that, for example, at the assumed WACC of 9 per cent, one third of potential investment projects were accepted and two thirds rejected, and that 5 per cent of investment projects would be loss-making. The z score at 5 per cent is -1.645. The z score at 66⅔ per cent is 0.43. That implies a mean return of 79 per cent of the hurdle return and a standard deviation of 48 per cent of the hurdle return. That in turn would mean that with a 16.7 per cent rise in the required period return (the loss scenario) there would be a drop from ⅓ of projects being accepted to 22 per cent, or a loss of one third of new investment. For a 9 per cent rise in the required return (the delay scenario) the drop is to 27 per cent of projects being accepted, or a loss of 19 per cent of new investment.
- ❖ Alternatively, suppose that at the assumed WACC of 9 per cent, half of potential investment projects were accepted and half rejected and 10 per cent of projects were loss-making. Then 9 per cent rise in the required hurdle period return would mean a 17 per cent loss in the loss scenario and a 9.2 per cent loss of investment in the delay scenario.
- ❖ Lastly, suppose that at the assumed WACC of 9 per cent, one fifth of potential investment projects were accepted and fourth fifths rejected, and that 10 per cent of investment projects would be loss-making. The z score at 10 per cent is -1.282. The z score at 80 per cent is 0.842. That implies a mean return of 60 per cent of the hurdle return and a standard deviation of 47 per cent of the hurdle return. That in turn would mean that with a 16.7 per cent rise in the required period return (the loss scenario) there would be a drop from one fifth of projects being accepted to 12 per cent, or a loss of over 42 per cent of new investment. For a 9 per cent rise in the required return (the delay scenario) the drop is to 15 per cent of projects being accepted, or a loss of 25 per cent of new investment.

These illustrative cross-checks suggest that the estimates based on the observed data may be on the conservative side, and potentially the share of investment lost could be twice or more those given by our figures.