Digital markets: formative components, regulation, challenges and insights from the EU Digital Markets Act

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Abstract

There has been very little policy or academic discussion or debate about the value of digital markets in the literature. Most debates in the literature focus on the large technological companies that operate in digital markets, but there are no discussions or debates in the literature about the value proposition and formative components of digital markets. This study examines digital markets, their formative components, regulation and challenges. It also presents a concise definition of "digital markets" and suggests a link between digital markets and digital financial inclusion. It analyses the regulation of digital markets, particularly the recent EU Digital Markets Act, and show that regulation focus mostly on large technological companies. The study also shows the benefits of digital market regulation for users of digital markets and the demerits of the large technological companies who own the world's largest digital transactional platforms in digital markets. The criticisms of regulating large technological companies are also identified.

Keywords: digital markets, digital technology, internet, platform, regulation, large technological companies, EU Digital Markets Act, digital innovation.

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1. Introduction

Recently, there has been increasing advocacy for the development of digital markets. The recent advocacy for the development of digital markets arises from the challenges which physical markets pose to society and the environment. Physical markets are very compartmentalized and the cost of renting a physical space in physical markets is high (Eden, 1998). Labour cost and operating cost in physical markets are also high. These costs are then passed on to the goods and services sold in physical markets. It leads to high costs for consumers, and it diminishes their welfare. Physical markets are mostly concentrated in urban and sub-urban areas, and they have limited presence in rural and remote communities (Ashima and Kumar, 2024). Their limited presence in rural and remote communities leads to the exclusion of people in rural and remote communities and it reduces their participation in the market economy (Shiferaw et al, 2008). Physical markets also pose a risk to the environment by emitting waste into the environment which may not be properly disposed of (Kiel, 2005). These challenges have made digital markets become attractive due to their cost-saving advantages, competition and environmental sustainability benefits.

This study is motivated by the recent advocacy for the emergence and development of digital markets in countries among practitioners and policymakers (Brühl, 2023; Anderson and Mariniello, 2021). This has led to the emergence of country-level and regional-level digital market initiatives such as the European Union (EU) Single Digital Market 2030 agenda, the Mexico Digital Markets 2030 agenda, the UK Digital Development Strategy 2024-2030 agenda, the German Digital Financial Market 2030 agenda, and the Digital Transformation Strategy for Africa (2020-2030) agenda. These initiatives aim to create digital markets that can serve millions of sellers and customers who want to buy and sell goods and services over the internet to foster digital inclusion, economic growth, and sustainable development.

This study explores digital markets, their formative components, regulation and regulatory challenges. By definitions, digital markets are digital platforms or digital ecosystems that enable the buying and selling of physical or digital goods and services over the internet. Digital markets are important to the economy and to society. Digital markets reduce the demand for physical market stores, thereby reducing demand pressure on real estate and the environment (Shaw, 2020; Meinhold et al, 2024). They eliminate the need for customers to

undertake long-distance travel to a physical marketplace to make purchases. Digital markets minimize marketplace discrimination, they expose unfair pricing and give consumers access to a wide variety of goods and services (Tommasi, 2023). Digital markets also offer customers many digital payment options and they ensure price discovery and promote payment transparency (Hansson, 2024). Digital markets also give big and small sellers equal opportunity to access existing digital market platforms to sell their goods and services thereby promoting marketplace diversity, equity and inclusion (Tommasi, 2023). Digital markets do not emit physical waste which means that they contribute to reducing environmental pollution thereby contributing to achieving the sustainable development goals (Meinhold et al, 2024). Digital markets are also important to governments because digital markets reduce the demand for physical cash, reduce the cost of cash management by central banks, and generate tax revenue from digital transactions for the fiscal authorities.

Despite the importance of digital markets, there has been very little policy or academic debate about the value of digital markets, their formative components and the regulation of digital markets in the literature. As digital markets grow in size and importance, most debates in the literature focus on large technological companies that operate in digital markets (Cabral et al, 2021; Birch and Cochrane, 2022) while other studies examine the use of digital technologies to engage in digital marketing to persuade customers to purchase goods and services on digital market platforms (Chaffey and Ellis-Chadwick, 2019; Kannan, 2017). What is missing in these studies is the rational for the existence of digital markets. There is no discussion or debate in the literature about the value proposition of digital markets as a standalone concept or the importance of their formative components. There is also no information about the pros and cons of regulating digital markets. Such knowledge is either non-existent or often overlooked. This study therefore fills this gap in the literature by presenting a discussion on the value proposition of digital markets as a standalone concept. It highlights the formative components of digital markets. It also discuss the importance of regulating digital markets and the issues associated with regulation using the case of the European Union's Digital Markets Act.

This study contributes to the existing literature in several ways. One, the study contributes to the literature examining the building blocks of digital innovations. In the literature, Smith et al (2000) identify the internet as an important building block of digital innovations. But little

is known about other formative components of digital innovations. The present study contributes to the literature by identifying the crucial formative components of digital markets. Two, the study contributes to the literature studying the regulation of digital markets. Scholars such as Petit (2021) supports the idea of regulating digital markets and argues that regulating digital markets could improve fairness in markets while Akman (2021) argues that the digital market regulation developed in Europe can stimulate other countries to regulate digital markets and bring out a change in the business models of the large technological companies. The present study contributes to the literature by providing a case study on digital market regulation using the EU Digital Markets Act, and to identify the historical antecedents, objectives, risks and criticisms of digital market regulation. The study further contributes to the literature studying the role of digital transactional platforms in the digital transformation of society and the economy. In the literature, Van der Aalst et al (2019) show that digital markets can enhance economic activities in the education, travel, commerce, sports, entertainment, social media, telecommunications and gaming sectors. The present study contributes to this literature by arguing that the regulated digital transactional platforms used in digital markets can assist in increasing the level of digital financial inclusion.

The rest of the article is structured as follows. Section 2 presents the conceptual framework, theory and literature review. This section also discuss the definition of digital markets. Section 3 highlights the key components of digital markets. Section 4 presents a close examination of an existing digital market regulation which is the European union (EU) Digital Markets Act. Section 5 presents some risks and regulatory issues associated with digital markets. Section 6 offers some criticisms of regulating digital markets. Section 7 presents the conclusion of this study.

2. Theory and literature review

2.1. Defining digital markets

By definition, digital markets are digital platforms or digital ecosystems that enable the buying and selling of physical or digital goods and services over the internet (Smith et al, 2000). A digital market is a digital hub where goods and services are traded or a virtual marketplace that brings together the suppliers of goods and services and those who need those goods and services (Cennamo, 2021; Cabral et al, 2021). The operational definition of digital markets for the purpose of this study is that digital markets are online digital platforms that bring buyers and sellers together to buy and sell physical or digital goods and services over the internet.

Digital markets are different from physical markets. The distinguishing feature of digital markets is that the market participants meet on a digital platform, the market infrastructure is entirely digital, and price determination is done on digital transactional platforms enabled by the internet. Prominent examples can be seen in the US, China and Europe where Alibaba, Amazon, eBay and Etsy are major digital transactional platforms that bring many individuals and firms together to buy and sell in a coordinated digital marketplace enabled by the internet. These platforms are owned and controlled by large technological companies, and these platforms are increasingly becoming fundamental to the development of digital markets. Due to these developments, many economic agents are moving from reliance on physical markets to reliance on digital markets in response to the popularity of digital transactional platforms and changing consumer expectations of service, and these developments have made digital markets become important to the economy and to society.

2.2. Theories that explain the formative components and usefulness of digital markets. perspectives

Several theories are useful in explaining the formative components and usefulness of digital markets. They include the network theory, the digital innovation network theory and the technology acceptance model.

2.2.1. Network theory

The network theory states that the use of digital innovations (in this case, digital transactional platforms) increases through a network effect (Liu et al, 2022). As more users use digital innovations, they will communicate the benefits of using digital innovations to others who will be encouraged to use the same digital innovations, thereby creating a network effect (Liu et al, 2022). The implication of network theory for digital markets is that the value or usefulness of digital markets depends on user adoption and the network effect of using it (Rochet and Tirole, 2003; Armstrong, 2006).

2.2.2. Digital innovation network theory

Another theory is the digital innovation network theory which is proposed in Hu and Xu (2023). It argues that digital innovations are composed of digital representations of resources (i.e., digital technology and data), digital resource providers, digital resource users and other heterogeneous network subjects who are connected through digital connection. The purpose of the digital innovation network is to promote the initiation, development, and application of digital innovation through convergence, generativity, and modularity of digital innovation (Hu and Xu, 2023). The implication of the digital innovation network theory for digital markets is that people's demand for useful online information about limited resources and their ability to generate additional value from a digital marketplace leads them to patronise digital markets.

2.2.3. Technology acceptance model

The technology acceptance model also explains the patronage of digital markets by individuals. The technology acceptance model, proposed in Davis (1989), explains the reason why people accept and use digital innovations. The technology acceptance model begins with the introduction of a new digital innovation and ends with the user accepting and using the digital innovation. Technology acceptance model argues that users prioritise perceived usefulness and perceived ease-of-use when deciding to use digital innovations, and their decision to use digital innovations may also be influenced by social influence or behaviour intention which determines user attitude towards digital innovations (Davis, 1989, 2024). The implication of the technology acceptance model for digital markets is that people's willingness to participate in digital markets depend on the perceived usefulness and perceived

ease-of-use of digital markets to time. If they find digital markets useful and easy to use, they will accept and patronise digital markets.

2.3. Literature review

In the literature, existing studies examine the link between digital platforms, digital markets and large technological companies. For example, Smith et al (2000) show that the internet has developed into a robust channel for commerce and the internet has led to the development of electronic (or digital) markets. They show that digital markets are still in the early stage of development and internet markets tend to be more efficient than conventional markets in pricing. Van der Aalst et al (2019) argue that digital markets are important because they are built around digital transactional platforms that are owned by large technological companies and the platforms can be found in almost any domain, ranging from learning education, travel, commerce, sports, entertainment, social media, telecommunications, gaming, etc. They further show that these digital platforms combine new business models with technological innovations, and they ultimately enjoy the winner-takes-all advantages. Anderson and Mariniello (2021) argue that digital markets enjoy huge efficiency gains. However, they also create winner-take-all dynamics that, if left unchecked, can lead to monopolistic markets and hurt consumers in the long-run. They further noted that slow-moving competition policy tools, no matter how robust, cannot fully address these digital concerns.

Regarding competition, Calvano and Polo (2021) show that digital markets have been at the forefront of public policy debates because digital markets are commonly associated with antitrust issues, and they are often concentrated due to network effects and due to their need to collect large amounts of data for production and commercialisation. Cennamo (2021) examines competition in digital markets. The author presents a platform-based view of competition in digital markets and argue that digital platforms, which is an important element of digital markets, vary in their unique identity and size, and these factors explain the dynamics of competition in digital markets. Newman (2019) also shows that digital markets facilitate the creation and maintenance of durable market power, and they adopt anti-competitive strategies. Prado (2020) also shows that large technology platforms can use their market power in digital markets to make their end users unlikely to switch to smaller competitors, even when the smaller competitors offer better services, and this justifies the

need to regulate the large technology platforms. Parker et al (2020) also point out that digital platforms are at the heart of online economic activity, and they connect producer and consumer markets. However, their market power and their privileged position in the digital ecosystem raise concerns that they may engage in anti-competitive practices that stifle innovation and diminish consumer welfare. They further argue that the changing nature of digital platforms and the technology they operate with means that traditional ex-post antitrust rules will be less effective in regulating digital platforms unless regulation is combined with a proper ex-ante regulatory framework.

Some studies focus on the regulation of digital markets. For example, Petit (2021) shows that attempts have been made to regulate digital markets such as the proposed Digital Markets Act (DMA) which aims to improve fairness and contestability in digital markets. The DMA identifies some companies to be 'gatekeepers' because they control core platform services due to incumbency advantages and the gatekeepers' actions which lead to high concentration, trading partner dependence, and unfair conduct. Akman (2021) acknowledges that the European Union's Digital Markets Act initiative, is an important legislation because it can stimulate countries to regulate digital markets and bring out a change in the business models of the large technological companies. Still on regulation, Krämer and Schnurr (2022) analyse the role of user data in the dominance of data-rich incumbents in digital markets. They argue that data access regulation is needed to limit the collection of user data by data-rich incumbents. They also suggest that regulation should allow the sharing of the raw user data collected by data-rich incumbents in digital markets. However, Larouche and de Streel (2021) criticize the regulation of digital markets. They focus on the Digital Markets Act and claim that such regulation does not have reasonably well articulated policy goals, and it relies on rigid rules to ease compliance and enforcement.

While the existing literature has examined some digital platforms and the competition and concentration issues associated with digital platforms, the existing literature has not examined digital markets which are broader in scope than digital platforms. The literature has also not examined the formative components of digital markets. Furthermore, the literature is yet to explore deeply the regulation of digital markets and the challenges that may be encountered in the regulation of digital markets. Therefore, this study fill these gaps in the literature by examining (i) the formative components of digital markets, (ii) the regulation of

digital markets using a case study of the EU Digital Markets Act, and (iii) the challenges that may be encountered.

3. Formative components of digital markets

There are nine components of any digital market. They are the digital transactional platform, sellers, buyers, the digital device used to transact on the platform, the information and communication technology (ICT) infrastructure, embedded add-on services, internet access, digital public infrastructure and regulation. With these components in place, the exchange of goods and services and payments can be made digitally between buyers and sellers. The formative components are described below.

i. **The digital transactional platform** is the hub, app or website that allows buyers and sellers to exchange goods and services, and to make and receive payment (Trabucchi and Buganza, 2020). It also enables customers to store value and exchange money for goods and services.

ii. **The digital device** refers to a computer, mobile phone, or point-of-sale (POS) terminal that buyers and sellers use to transmit information or instruments (e.g. payment cards) to the digital transactional platform (Hein et al, 2020). Owning a digital device is a reliable way to access digital markets but it is not the only way.

iii. **The ICT infrastructure** is the infrastructure that receives and transmit information and transaction data (Parra-Sánchez et al, 2021). The seller's device and the digital transactional platform are connected to the ICT infrastructure to enable the transmission and receipt of information and transaction details such as purchase requests, invoicing and to process payments.

iv. **Embedded add-on services,** in the context of digital market, are products and services which are offered to customers as an added option at the point of checkout (Ozili, 2022). Embedded add-on services are the additional pre-purchase services (e.g. loans) and post-purchase services (e.g. insurance) offered on the digital transactional platform by third parties to provide convenience and enhance the check-out experience of customers (Ozili, 2022).

v. **Internet access** is essential for the functioning of digital markets. It ensures

internet connectivity to a computer, mobile phone, or other network device. Online vendors need internet access to communicate with online customers, facilitate payments and finalise purchases. Without internet access, digital markets cannot exist.

vi. **Digital public infrastructure** is an enabler of digital transformation in public services. It enables governments, businesses, and citizens to safely share and use public or social services that are crucial for the smooth functioning of digital markets (Gupta and Nair, 2023). An example of a digital public infrastructure is digital identity systems which are used to verify the profile of buyers and sellers.

vii. **Regulation** ensures that all parties, especially the sellers and the owners of the digital transactional platform, act fairly and in an ethical manner. Regulation in digital markets aim to align the private behaviour and private interests of sellers and large technological companies with public interest (Tan, 2022). This ensures that customers are not exploited. An example of regulation in digital markets is the European Union Digital Markets Act.

4. Regulating digital markets

4.1. Digital markets and digital financial inclusion

The customers participating in digital markets will have digital access to existing financial services, which is essential for digital financial inclusion. They will have access to formal financial services such as a formal deposit and savings account (Ozili, 2018). They will also have a digital means of payment, such as a credit card, debit card, other types of payment cards, bank apps and QPR codes, to finalise purchase on a digital transactional platform (Ly and Ly, 2024). This suggests a positive relationship between digital market patronage and digital financial inclusion. This relationship presents many benefits. One, customers will increasingly use digital financial services as they continue to access and use digital transactional platforms in digital markets (Ozili, 2018). Two, many digital transactional platforms offer low fees which is beneficial for both sellers and buyers in digital markets. Three, there is access to additional embedded financial services to give customers a satisfying check-out experience such as instant insurance, loans and storage services (Telukdarie and

Telukdarie, 2022). Four, it eliminates the need to carry cash around thereby reducing the risk of theft and other financial crimes associated with cash-based transactions.

4.2. The case of the EU Digital Markets Act

4.2.1. History and Objective of the Digital Markets Act

Historically, the European Union has a competition law or antitrust law which was introduced in 2003. The law discouraged unfair practices among companies in the European Union (EU, 2003). However, the rise of large technological companies after the 2008 global financial crisis and the unique digital business models they employ made them immune to the EU competition law because they could operate in European countries without needing to have a physical presence in the European country and the large technological companies use unconventional competition tactics **(Felix, 2022).** For example, people in Germany can download a Google app, register it, use it, advertise on it, while Google on the other hand can intentionally prevent European start-up technology companies from gaining visibility on all Google platforms, thereby stifling local competition. It was difficult for the EU to take action against such firms because the large technological companies do not operate from Europe, and even when they are fined, they may not comply, and their apps cannot be banned because European users want to continue using the apps. The large technological companies were also reported to have engaged in other unfair practices such as coordinating with themselves to fix prices, abusing their dominant position, and other infringements. These issues led to the need to create a legislation or regulation that is fit and proper for existing digital markets and targeted at the large technological companies who are the dominant players in European digital markets.

The European commission recently issued new legislation called the Digital Markets Act (DMA) (see figure 1). The DMA complements existing competition laws in the European Union (EU). The objective of the DMA is to make the markets in the digital sector fairer and more contestable. The DMA was established to comprehensively regulate large technological companies (i.e. 'the gatekeepers') and their gatekeeper power in digital markets. Examples of the gatekeepers are Alphabet, Apple, Amazon, ByteDance, Facebook parent company Meta, and Microsoft. The gatekeepers are large technological companies that provide core platform

services, such as social media networks, online search engines, app stores, messenger services, internet browsers, and other major digital services.

4.2.2. The Do's and Don't's of DMA

The DMA require gatekeepers to comply with all the rules and regulations listed in the Act. It spells out a list of do's and don't's. Examples of the do's, as stated in the DMA, are that the gatekeepers must (i) allow third parties to inter-operate with the gatekeeper's own services in certain specific situations; (ii) allow their business users to access the data that they generate in their use of the gatekeeper's platform; (iii) provide companies advertising on their platform with the tools and information necessary for advertisers and publishers to carry out their own independent verification of their advertisements hosted by the gatekeeper; (iv) allow their business users to promote their offer and conclude contracts with their customers outside the gatekeeper's platform.

Examples of the don'ts, as stated in the DMA, are that gatekeepers cannot (i) treat services and products offered by the gatekeeper itself more favourably in ranking than similar services or products offered by third parties on the gatekeeper's platform; (ii) prevent consumers from linking up to businesses outside their platforms; (iii) prevent users from un-installing any pre-installed software or app if they wish so; (iv) track end users outside of the gatekeepers' core platform service for the purpose of targeted advertising, without effective consent having been granted.

4.2.3. Benefit for consumers

The DMA empowers citizens to navigate the digital landscape with more choice and flexibility. Under the DMA, consumers are spoilt with choices. Consumers can now choose the best app, browser and search engine and install them directly from the web or app stores on their smartphone. Two, consumers will gain ownership of their data. Consumers will have the power to decide whether companies can use their data across different services and whether consumers will allow tracking and profiling for advertising purposes. Three, the DMA ensures seamless data portability in the interest of customers. Customers will have the right to transfer their data to whomever they want. This will give consumers better control of their digital footprint. Four, consumers will have streamlined access to platforms, and they will no longer have to log in with one platform to access another platform. Five, consumers will have

unbiased search results that reflect relevance, and they will discover the most pertinent information and without unwanted promotions.

4.2.4. Benefit for businesses

One, businesses will enjoy non-siloed app distribution. It will unlock closed ecosystems for businesses by allowing businesses to run their own app store, distribute their apps through alternatives app-stores and sideload their apps on all designated computer and mobile operating systems (iOS, Android mobile and Windows PC). This means that businesses will be able to communicate directly and freely with their customers. Two, businesses are guaranteed interoperability so that they can develop and offer innovative services to users of designated computer and mobile operating systems (iOS, Android mobile and Windows PC). Gatekeepers must also allow interoperability free of charge. Three, DMA promotes fair play among businesses and reduces conflict of interests. This is because the data generated by businesses on designated platforms will not be used by gatekeepers to outcompete the businesses that own the data. Four, the DMA promotes fair ranking of the goods and services of businesses. Gatekeepers can no longer use their platforms to unfairly promote their own products or services above that of other businesses in search results or ads. Five, the DMA gives businesses back their data by ensuring that businesses have effective access to the data generated by their business on the gatekeeper's platform. Businesses will have access to data generated by their services or user interactions on gatekeeper platforms, including performance metrics and user behaviour. Businesses will be able to use this data to make informed decisions. Six, the DMA promotes fair sales terms and practices which is in the best interest of businesses. The DMA allows businesses to have control of their pricing strategy on designated gatekeepers' platforms and it brings an end to restrictive conditions that dictate pricing.

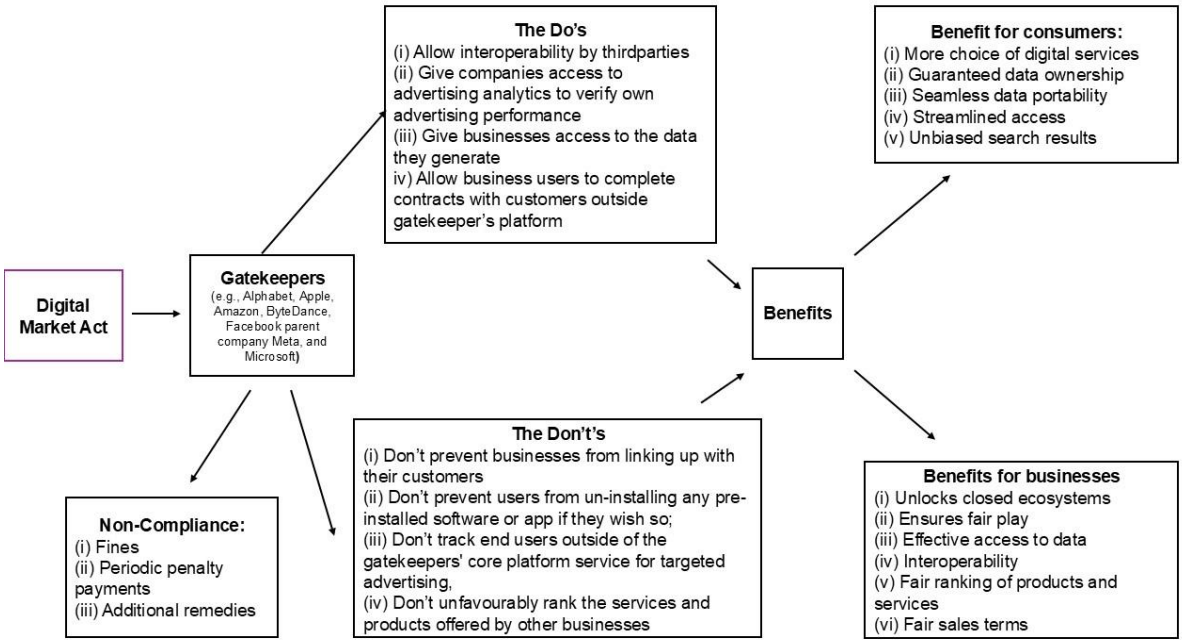
4.2.5. The future of DMA and consequences of non-compliance

The European commission will ensure that the Digital Markets Act keeps up with the fast-evolving digital sector by carrying out frequent market investigations that will enable the commission to: (i) qualify more companies as gatekeepers; (ii) update dynamically the obligations for gatekeepers when necessary; (iii) identify gatekeepers that break the rules, and (iv) design remedies to tackle systematic infringements of the Digital Markets Act rules.

The DMA also proposes fines and penalties for non-compliance. This includes (i) fines of up to 10% of the company's total worldwide annual turnover, or up to 20% in the event of repeated infringements, (ii) periodic penalty payments of up to 5% of the average daily turnover, and (iii) additional remedies which may be imposed on gatekeepers after a market investigation.

From the case study above, we learn that digital markets will have dominant players (e.g. gatekeepers) who may engage in unfair ad unethical practices. Therefore, there is a need to issue legislation or regulation to protect customers and businesses from the actions of the dominant players in the digital marketplace.

Figure 1. EU Digital Markets Act



Source: The EU Digital Markets Act[1]

1

4.3. Comparing the EU Digital Markets Act with competition laws in other countries

The EU Digital Markets Act is a type of antitrust or competition law. This section compares the EU Digital Markets Act with the competition laws of other countries to determine where they converge or diverge (see table 1). In the UK, the Competition Act governs behaviour in all markets including digital markets. The UK Competition Act prohibits anti-competitive agreements between businesses and the abuse of a dominant position in all UK markets. Unlike the EU, the UK does not have a separate competition law that is designed for digital markets which are dominated by digital transactional platforms owned by large technological companies. The same existing competition law which governs all UK markets is the same competition law that is applicable to digital markets in the UK. However, where the EU Digital Markets Act and the UK competition law converge is that they both seek to promote fair competition for consumers in the European Union and in the UK (see table 1).

In contrast, the United States has three competition laws which serve different purposes (see table 1). They are the Sherman Act, the Clayton Act and the Federal Trade Commission Act. Although the three competition laws seek to promote fair practices, greater choices and lower prices for consumers and businesses, they have different focus. The Sherman Antitrust law only declared that monopolies are illegal in the United States, but it did not take any further actions. The Clayton Antitrust law closed the loopholes in the Sherman Antitrust Act by taking specific actions against monopolies to ensure that there is enough competition in the market while the Federal Trade Commission Act promotes fair competitive practices in trade and commerce in the United States. When compared to the EU Digital Markets Act, the United States is a special case because it has one of the oldest competition laws in the world. More importantly, the United States does not have separate competition laws that are designed for digital markets which are dominated by digital transactional platforms owned by large technological companies. The same existing competition laws that govern all US markets is the same competition law that is applicable to the US digital markets. However, where the EU Digital Markets Act, and the US competition laws converge is that they both seek to promote fair competition for consumers and businesses in the United States and in the EU (see table 1).

The competition law in South Africa and India are quite similar (see table 1). The competition

authorities prohibit anti-competitive practices in India and South Africa. Unlike the EU, India and South Africa do not have a separate competition law that is designed for digital markets which are dominated by digital transactional platforms owned by large technological companies. The same existing competition law governs all markets, including digital markets, in India and South Africa. However, where the EU Digital Markets Act and Indian and South Africa competition law converge is that they both seek to promote fair competition for consumers and businesses in their countries (see table 1).

Table 1. Comparison of the EU Digital Markets Act with competition laws in other countries

Category	Europe	The United Kingdom	USA	South Africa	India
Name of law / regulation / policy	EU Digital Markets Act.	The Competition Act.	The Sherman Act, the Federal Trade Commission Act, and the Clayton Act.	The Competition Act.	The Competition Act (amended).
Year formulated	2022	1998	The Sherman Antitrust Act (1980), the Federal Trade Commission Act (1914), and the Clayton Antitrust Act (1914)	1999	2023
Purpose	To make the markets in the EU digital sector fairer and more contestable.	To prohibit anti-competitive agreements between businesses and the abuse of a dominant position in a market.	Purpose of the Sherman Antitrust Act is to prohibit competitors from entering agreements to fix prices or wages, rig bids, or allocate customers, workers, or markets. Purpose of the Clayton Antitrust Act is to promote fair competition and prevent unfair business practices that could harm consumers. The purpose of the Federal Trade Commission Act is to ban unfair methods of competition and unfair acts or practices that affect commerce.	To dismantle monopolistic structures and promote fair competition for the benefit of all South Africans.	The Act prohibits anti-competitive agreements, abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control and M&A), which causes or likely to cause an appreciable adverse effect on competition within India.
Benefits to consumers and businesses	It increases choice, it gives consumers and businesses greater control of their data on the platform of gatekeepers, and they benefit from lower prices and higher-quality services.	It gives consumers and businesses the option to choose from available trade-offs between different prices and quality, and they can choose the products they value most.	It gives consumers and businesses lower prices, higher quality goods and services, more choices, and greater innovation.	It gives consumers and businesses fair pricing, and protects choice in the marketplace.	It gives consumers and businesses good quality services and goods at lower price.
Implementing authority	The European Commission.	Competition and Markets Authority.	Federal Trade Commission's Bureau of Competition.	The Competition Commission.	Competition Commission of India.

Source: Paraphrased from country-specific competition authority's websites.

5. Risks and regulatory issues

Digital markets also pose risks for participants. The risks include consumer-related novelty risk, seller-related risk, digital technology-related risk, operational risk, financial crime risk, and cyber security risk. Consumer-related novelty risk is the risk faced by first time users. First time users of digital transactional platforms may experience common problems such as lack of familiarity with the products and services offered, and inability to make product selections from start to check-out without assistance (Horowitz et al, 2024). For example, first time borrowers of online loan in digital loan markets may fail to obtain the appropriate loan. As a result, borrowers may unknowingly choose a loan type that is difficult to repay. They may seek help from a third-party who may exploit them or subject them to financial abuse. Seller-related risk arises when sellers offer products and services that are not subject to consumer protection provisions. For example, an online retailer may sell harmful or defective products that are not regulated to customers via a digital market platform. The affected customers may not be able to seek redress through a regulator if the products are not regulated. Digital technology-related risk is the risk that arises from disrupted service, loss of data, payment processing failure, etc. For example, users of digital market platforms may experience system errors, internet disruption, hardware and software failure when using their digital devices to access digital markets. Operational risk is the risk that the digital transactional platform may malfunction, thereby creating a frustrating user experience for customers and sellers (Girling, 2022). For example, the digital market platform may experience prolonged downtime which could cost vendor millions of dollars in losses. Financial crime risk is the risk of identity theft or card fraud which leads to loss of customers' money. For example, the customers using a digital market platform may be defrauded when making payments for goods or services. Fraudsters may hijack the digital payment platform and redirect customers to make payment through a cloned payment website that is controlled by them. Cybersecurity risk is the risk of cyber-attacks on digital transactional platforms, data security breach, or a breach of data privacy of buyers and sellers (Nikkel, 2020). For example, cyber attackers may launch a ransomware attack on the digital market platform which may put customer data at risk.

Collectively, these risks reinforce the need for effective regulation and supervision of digital markets (Ma, 2022) Those responsible for the effective regulation and supervision of digital

markets should anticipate, and be aware of, major regulatory issues posed by digital markets particularly the regulatory issues related to sellers exploiting buyers, non-compliance with anti-money laundering and countering financing of terrorism (AML/CFT) rules, consumer protection breaches, ineffective payment system regulation, and unfair competition. The challenge is that many of these issues fall within the competencies of multiple regulators. As a result, communication, collaboration and coordination among the multiple regulators may be difficult.

6. Criticism of regulating digital markets

Existing and emerging digital markets regulation often focus on the large technological companies such as Alphabet, Apple, Amazon, ByteDance, Facebook parent company Meta, and Microsoft (Bradford, 2023; Birch and Cochrane, 2022). This can be seen in the EU's Digital Markets Act which focuses solely on regulating these large technological companies, and the UK's Digital Markets, Competition and Consumers Act which focuses solely on regulating firms who are designated as having strategic market status (SMS), which is equivalent to the large technological companies. The regulatory focus on large technological companies is because they control the world's digital transactional platforms (Bradford, 2023). While regulating the large technological companies is important to mitigate certain risks, the deliberate focus on only the large technological companies without focusing on the users of the digital transactional platforms may seem unfair to large technological companies.

Many criticisms have emerged against regulating only large technological companies. One, there is the argument that the new regulation of digital markets is not borne out of the need to minimise risks, but rather, it is borne out of the need to penalise large technological companies for being systemically important in people's lives and very profitable. This may be a good thing and not necessarily a bad thing. Two, the regulation of digital markets have the potential to distract global market leaders from what really matters in digital markets, which is customer preferences. Three, focusing regulation on large technological companies to reduce their profit is an infringement on the property rights of large technological companies (Jacobides, 2020). Four, the recent regulation of digital markets shields less competitive firms and rewards them for not competing enough while punishing large technological companies

for being very competitive. Thus, the regulation does not encourage less competitive firms to be very competitive (Stucke, 2013). Five, the regulation of digital markets always introduces vague ideas of fairness which may not be truly fair to large technological companies. Any criteria of fairness should be fair to both users and the large technological companies who are the owners of the digital transactional platforms used in digital markets. But, in many cases, the chosen criteria of fairness is only fair to users but not fair to the large technological companies. Six, the regulation of digital markets focuses too much on the large technological companies but does not penalise buyers or sellers who undertake unethical practices on the platforms of large technological companies. Seven, in a bid to control and stifle powerful large technological companies, regulation often end up hurting consumers, stifling innovation and reducing choice for consumers (Jacobides, 2020; Crisanto et al, 2021; Basu et al, 2021). Eight, rather than creating a collaborative relationship between regulators and large technological companies, introducing regulation would make every issue or infraction look like an antitrust case, thereby creating tension and frequent standoffs between regulators and the large technological companies.

7. Conclusion

This study presented a discussion on digital markets, their formative components, regulation and challenges. It also proposed a concise definition of digital markets and suggested a link between digital markets and digital financial inclusion.

7.1. Summary of results

The study showed the different elements that make up digital markets which are the digital transactional platform, sellers, buyers, the digital device used to transact on the platform, the information and communication technology (ICT) infrastructure, embedded add-on services, internet access, digital public infrastructure and regulation. These elements make it possible for digital markets to function effectively and to meet the needs of customers and sellers.

The study also used theories to explain the formative components and usefulness of digital markets. The relevant theories are the network theory, the digital innovation network theory and the technology acceptance model. The network theory showed that the value or

usefulness of digital markets depends on user adoption and the network effect of using it while the technology acceptance model showed that people's willingness to participate in digital markets depend on the perceived usefulness and perceived ease-of-use of digital markets to people.

The study also offered insights into how digital markets could accelerate digital financial inclusion. It was argued that digital markets are beneficial for digital financial inclusion because they enable access to digital payments, online loans and other digital financial services that promote digital financial inclusion. With regard to regulation, the study undertook a case study of the EU Digital Markets Act which is designed to ensure that big technological companies allow small players to thrive through fair competition.

The study also highlighted the risks of regulating digital markets which includes consumer-related novelty risk, seller-related risk, digital technology-related risk, operational risk, financial crime risk, and cyber security risk. It also offered some insights into the problem of regulating large technological companies in digital markets. It pointed out the fact that new regulation of digital markets may be borne out of the need to penalise large technological companies for being systemically important in people's lives and very profitable. Regulation may also reduce the profit of large technological companies. There is also the concern that new regulations may be discriminatory if it seeks to shield or reward less competitive firms for not competing enough while punishing large technological companies for being very competitive.

7.2. Implications

The theoretical implication of the discussion is that the value or importance of digital markets depends largely on coordination between its individual components. The value of digital markets also depends in part on its perceived usefulness and ease-of-use for users as well as the network effects of using digital markets.

The environmental and social implication is that digital markets can lead to a reduction in the demand for physical market stores which reduces demand pressure on real estate and the environment, and it eliminates the need for consumers to undertake long distance travel to a physical marketplace to make purchases. It also gives big and small sellers equal opportunity

to access existing digital market platforms to sell their goods and services thereby promoting marketplace diversity, equity and inclusion.

The practical implication of the discussion is that digital markets have the potential to serve millions of sellers and customers. It gives consumers many digital payment options, it ensures price discovery and promotes payment transparency. However, the use of digital markets by members of society brings not only benefits but also risks due to the challenges associated with digital technology and the challenges faced by users of digital transactional platforms. Some of the risks include consumer-related novelty risk, seller-related risk, digital technology-related risk, operational risk, financial crime risk, and cyber security risk. Some of these risks are well known while some risks are new and may take different dimensions in the context of digital markets. Moreover, the increasing patronage of digital markets, despite the presence of these risks, suggests that the benefits seem to outweigh the risks of participating in digital markets. Notwithstanding, there is a need to continuously regulate and supervise digital markets.

It is also important for policymakers to bear in mind that even though regulation is important, regulation may not help to form collaborative partnerships between regulators and large technological companies for the development of digital markets. In fact, the regulation of digital markets could infringe on the property rights of large technological companies, shielding and rewarding less competitive firms for not competing enough while punishing large technological companies for being very competitive, and regulation could introduce vague ideas of fairness which may not be truly fair to large technological companies, and failing to penalise buyers or sellers who undertake unethical practices on the platforms of large technological companies. Regulation could end up hurting consumers, stifling innovation and reducing choice for consumers. Regulation can also create tension between regulators and the large technological companies and encourage frequent standoffs between them.

Going forward, there is a need for policymakers to find a way to use light-touch regulation to regulate large technological companies and promote the development of digital markets without stifling the innovation of large technological companies since their digital platforms have become an integral part of people's lives such as Facebook, YouTube, iPhones,

WhatsApp, Amazon, etc.

7.3. Limitation of the study

A limitation of the study is that it did not use data to measure the usefulness and effectiveness of the digital markets in Europe, US, Africa and Australia and Asia. This was due to the absence of reliable data to make such an assessment. Another limitation of the study is that it did not use empirical data to assess the effectiveness of the EU Digital Market Act regulation. We also did not use empirical data to assess the relationship between digital markets and digital financial inclusion.

7.4. Directions for future research

Future studies should use available data to assess the usefulness and effectiveness of the digital markets in Europe, US, Africa and Australia and Asia. In terms of regulation, future studies should explore the possibility of introducing light-touch regulation that enable the smooth functioning of digital markets. Future studies should also consider the possibility of issuing regulation for users of digital transactional platforms to prevent users from conducting unethical practices in digital markets.

7.5. Future research direction in EU DMA

With regard to the EU DMA, future research should suggest regulatory mechanisms that regulators can use to regulate designated gatekeepers to ensure they comply with the rules stipulated in the DMA to promote fair competition in the EU. It will also be interesting for future studies to investigate ways to protect the interests of gatekeepers as well as the interest of small players who are at a disadvantage but want to compete fairly with the gatekeepers in the EU single digital market.

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