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# Digital Platforms in Developing Countries: “A Case-Study of Jumia Egypt”

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## Abstract:

Digital platforms in developing countries are gaining momentum due to the increase in the apps economy that is taking place in these countries. This paper analyzes digital platforms in developing countries using a reference framework that identifies the following: definition, business models, platform enablers, and platform dynamics. The study applies this framework to Jumia Egypt and concludes with policy recommendations to promote digital platforms in developing countries.

## 1. Introduction

The global market of digital platforms hereon referred to as DPs recently gained significant momentum. Moreover, the trend toward platform adoption is expected to continue. To date, less than 15 percent of Fortune 100 companies have a developed platform model. The Institute of Democracy and Cooperation (IDC) think tank, predicts that by 2018 more than 50 percent of large enterprises will create or partner with industry platforms (Accenture, 2016a). The platform revolution that began in the business-to-consumer, (B2C), area through eCommerce, FinTech and circular economy business models is expanding into the business-to-business (B2B) space with innovation-based ecosystems and data-enabled business models. (Accenture, 2016 a,b)

Digital platforms are described in terms of the following types of definitions: a functional definition, an economic one and a third type based on the digital aspect of digital platforms. The functional definition of a digital platform presents it as a set of components used in common across a product family whose functionality can be extended to third parties (Parker et al., 2012). Industry platforms or industry markets are defined as common foundations that a firm can reuse in different producer variations (Parker et al., 2012). Besides, an industry platform has relatively little value to users without complementary products or services (Parker et al., 2012). In a business digital platform, there are usually vendors (sellers), on one the side and buyers as well as third party actors on the other (Constantinides et al., 2018, Jacobides et al., 2018). The economic definition entails that a digital platform is part of the production processes, related to the supply-chain, or a multi sided industry platform. In this case, the platform manager unites external resources from complements. As for the economic definition, it is frequently used in mature markets, and reflects a progression in consumer behavior (Rossotto et al., 2018, Gawer, 2014). The third definition reflects the digital nature of the platform. Digital platforms are created and cultivated on top of digital infrastructures, which, in turn, are defined as the computing and network resources that allow multiple stakeholders to plan their service and content needs (Constantinides et al., 2018). Furthermore, digital infrastructures provide the necessary computing and networking resources. They differ from other types of infrastructures in

their ability to collect, store, and make digital data available across a number of systems and devices (Constantinides et al., 2018). It is noted that digital platforms, per se, are not required to own physical assets in the form of infrastructure resources, nor do they generate value through product sales. (Constantinides et al., 2018)

The current paper is divided into the following sections: section 2 investigates the existing research which points out to distinct economic characteristics of digital platforms. Section 3 highlights the experience of digital platforms in Africa. This is followed by examining the case study of Jumia Egypt. Finally, the paper concludes with policy recommendations.

## **2. Literature Review**

Upon reviewing the existing research, there exist specific economic characteristics for the new phenomenon of online platforms, which are worth highlighting and analyzing. This section introduces special characteristics that include: firstly, the concept of network effects; secondly, the reduction of transaction costs and searching costs; thirdly, the asymmetric pricing structure and finally the plethora of users' data.

### **a. Network Effects**

Industry-wide platforms enjoy network effects. 'Direct network effect' or 'positive direct network externality' explain the benefit being accrued to users by the spread of the network, and 'externality' refers to the impact one user has on another (marketplacer.com). 'Network effects' is not a new concept. The term was originally used in the telecom network in relation to expansion, i.e. as subscribers to the telecom network increase, the network effects increase proportionally. If the network effects do not reach a critical mass both sides of the platform or market would start looking for another platform. Moreover, network effects largely refer to a situation where a group of customers is influenced by another group of customers; additionally, the link between the 2 groups is denoted by the indirect network effects (Katz et al.,1986, Graef et al., 2015). These network effects are termed as indirect due to the fact that they are internalized by the market or the platform that provides the intermediary services. The goal is to enable different groups of customers to interact with each other. However, the main beneficiary from their interaction is the platform, as the increase in customer base attracts more customers and increases the data produced by the digital platform, i.e. big data. It is worth noting that reaching the necessary critical mass of users, enables the platform "to bring enough value" of this specific platform to either groups.

According to the literature, there are various types of network effects to Multi Sided Platforms hereon referred to as (MSPs); they are also called matchmakers (Evans et al., 2016). It is worth noting that MSPs are also inclusive of the two-sided platforms. MSPs refer to the case that involves more than 2 different groups of customers participating in a type of business (Graef et al., 2015). MSPs provide a technical interface to help customers carry out interactions in a practical, fast and cost-effective manner. They basically act as an intermediary between the buyers and sellers; Whatsapp and Facebook are good examples of MSPs. These intermediaries

bring together users from different communities seeking to interact with each other such as buyers and sellers of used and new cars in a platform that serves this purpose.

It is vital for digital platforms to achieve properly proportioned and timed network effects on both the buyer and seller sides of the market. This is a challenge that many online platforms have to surmount as they embark on their new online business platforms. There are two main types of network effects, namely, Direct (Same-Side) within group external effects and Indirect (Cross-Side) outside group external effects. These are defined in terms of “the wellbeing of the members of one group depends on the participation of the members in another group” (Belleflamme et al., 2016). This concept can refer to positive *cross group external effects*, which comprises the notion that each group benefits from large participation of the other group/s. Nevertheless, cross group external effects can also be negative, which would result in negatively affecting the utility of one group if there is increased participation in the other group. (Belleflamme et al., 2016)

The second type of indirect network effects is the *within- group external effects*. In this new concept, the appeal of a specific platform or market belongs to one group and is contingent on the participation of members in the same group. It may be negative in nature in case of competition or congestion among the same group members. “Buyers also experience a within-group network effect — for example, in a online auction site, buyers face an increasing disutility with every additional user visiting the platform, as the presence of other buyers makes it hard for the buyer to purchase the goods at a bargain”. (Li et al 2010, p. 247)

Network effects pertain to other factors such as willingness to pay and user adoption; these factors would have an impact on the value of the platform (Shapiro et al., 1999). In case of two-sided platforms, network effects are manifested in the increasing attractiveness of the platforms for developers as this includes an increase in the number of consumers of that platform (Parker et al., 2008,2012).

## **b. Reduction of Transaction Costs/Searching Costs**

Two-sided platforms have distinct economic implications that include reduction of transaction costs and a change in the nature of the transaction costs; according to the gravity model, transaction costs, transportation costs and customs duties were considered transaction costs to trade in goods and services, which constituted a barrier to entry to international trade (WDR2016).

With the advent of digital platforms in businesses, transaction costs in terms of searching costs have declined dramatically due to the two-sided platforms and the introduction of the Internet. Transaction costs no longer constitute a challenge to trade; instead, the surplus of choices available in both sides of the market has become the real challenge. This highlights the crucial role of the online business platforms, where the latter facilitates the interaction between distinct groups of market participants (Belleflamme et al., 2016). Moreover, transaction costs have been reduced between sellers and buyers, securing the best bargains for exchange, securing peer-to-peer transactions such as Uber and Airbnb and finally crowd funding for entrepreneurs to raise funds. (Belleflamme et al., 2016)

### **c. Symmetric Information & Asymmetric Pricing Structure**

DPs allow for disrupting the existing information asymmetry in the market. The consumer is much more empowered in terms of access to information about suppliers of the services or products. The digital platforms' owners give access to information to the consumer that the incumbent might have withheld to gain market power (Drouillard, 2017). Another distinct feature of online business platforms includes the Asymmetric Pricing Structure, which stands for a kind of cross subsidization between different groups to recover most costs from one group of platform users, while charging the other groups of users zero price. (Graef et al., 2015)

### **d. Leveraging the Plethora of Users' Data**

Online business platforms can't survive or operate without leveraging the plethora of users' data that they own. DPs use data analytics to help promote their business as customers' data are considered the important strength for online business platforms. They are considered the means to enable the online business platforms to fulfill the requests of their customers, e.g. online advertising. Acquiring the necessary data about the target audience from the users' data is a prerequisite for the success of DPs, where essential data about the preferences and interests of the users are the foundation for such a service. (Graef et al., 2015)

Thus, we can conclude that online business platforms play a crucial role in facilitating the interaction between distinct groups of market participants, i.e. intermediation. Online business platforms are also characterized by cost-effectiveness especially in terms of reducing the transaction costs from the business point of view. Additionally, indirect network effects are categorized in two distinct groups: The cross group external effects and the within group external effects. The asymmetric pricing structure that implies cross subsidization is also another unique feature. Finally, big data generated from digital platform activities are considered one of the essential resources of the digital platform's business model.

## **3. Jumia “The Virtual Mall”: A Prominent Digital Platform in Africa**

Jumia is a private company established in 2012, Jumia, formerly called Africa Internet Group hereon referred to as (AIG), recently developed to become the continent's first “unicorn” startup. Furthermore, recently, AIG was valued around \$1.1 billion with fresh funding from Goldman Sachs, Rocket Internet (AIG's parent company) and MTN Group, a South Africa-based telecommunications firm. Goldman Sachs earmarked its \$326 million investment in the latest round of funding for AIG that is to be used to grow Jumia. Another major investor is French insurance giant AXA who put in \$83 million in exchange for an 8% stake. The company will also become the exclusive insurance provider for AIG. (MIT Technology Review, 2017)

The number of African companies that use Jumia's platform amounts to 500,000 companies. Jumia generated about \$234 million in revenue during the first nine months of 2015, a 265% growth from 2014. (Wharton University, 2016)

Jumia's business model is worth analyzing. It succeeded in providing innovative solutions to the hurdles that it as a digital platform in Africa business faces. Some of these hurdles include congested roadways, skeptical consumers and low Internet uptake in some countries. The company eyed the expanding middle class in the African countries as a potential addressable market. To realize the gains from its digital platform, Jumia introduced an initiative known as a "system of commissioned sales agents which it calls J-Force". The sales agents are in charge of extending services that include placing orders for clients who lack online access, or are not comfortable ordering themselves (Rosen 2016). However, one major barrier that impacts profits in Africa is infrastructure, an example is the condition of some of roads., Besides, according to McKinsey, transportation costs are five to eight times higher than in other emerging economies like Brazil and Vietnam. It's the last mile delivery that makes transportation infrastructure so expensive. To overcome such obstacles, Jumia got its own motorbike fleet (Rosen, 2016). Another hurdle is manifested in the dominance of cash transactions in African countries. Thus, Jumia introduced the option of accepting cash on delivery instead of pre-paying by credit cards. (Rosen 2016)

Some of the statistics that were released by Jumia reveal that the adoption of Jumia services is growing due to large investments, local operations and marketing initiatives. The active customer base increased from 0.1 million in 2013 to reach 2.2 million in 2017, i.e. an increase of about 147 percent compound annual growth rate hereon referred to as (CAGR). The number of orders increased by about 88 percent between the years 2013 and 2017. Gross merchandise volume or (GMV), which describes total sales dollar value for merchandise sold through a particular marketplace over a certain time frame in online retailing, increased by about 87 percent CAGR. Although in 2013, Jumia started off unprofitable, it has been progressing steadily and becoming more profitable, resulting in a decrease of 40 percent of losses between 2013 and 2017 (Jumia, 2017).

#### **4. Jumia Egypt Case Study:**

To analyze Jumia Egypt's digital platform, the present paper adopts the theoretical framework introduced by Rossotto et al., 2018. The application of the framework entails analyzing this case study based on 4 main pillars: first, introducing the definition; second highlighting the adopted business model; third identifying the platform's enablers; fourth, concluding with an exploration of the growth dynamics of the platform under investigation. Jumia Egypt accentuates the concept of its being both a local and regional marketplace. It is regarded as an entity that encourages the creation of such marketplaces by developing local brands and services.

The Jumia Egypt interview rendered a brief overview of Jumia Egypt and its current management. The information obtained presented Jumia Egypt as a privately owned company not traded on the Egyptian Stock market. It describes its business as a market place business or virtual mall, where vendors sell their products on Jumia's platform. Jumia Market is described as a community based online marketplace connecting sellers and buyers. The company offers a variety of products including mobiles & tablets, computers, electronics; it includes categories

such as: Home & Living, Fashion, Sports, Health & Beauty and Grocery. One of the main goals of the platform is to invest in training as well as capacity building of its labor force to develop the skills needed and give them the exposure that would enable them to build and run their own businesses in the future.

Jumia's business model relies on commission-based revenue. In 2016, a zero commission initiative was set for 'made in Egypt' products. In terms of payment options, Jumia started a cash on delivery which proved to be the most preferred method of payment because it received the highest percentage in ranking of payment preferences, this method was followed by credit card on delivery, where the share of credit card transactions is in the range of 10-15 percent of total sales, with incentives offered by MasterCard to increase this form of payment. Besides, geo-localization was an enabler in terms of best practices and technology and Jumia operating only in Africa was a strong point in its platform model.

Analysis of Jumia Egypt's business attributes can be summarized as follows: The platform type includes both a web-based platform as well as a mobile app one. Notice that the mobile app for Jumia Egypt is booming and has recently captured about 50% of the sales traffic. Key activities of Jumia can be classified as intermediation and marketplace. Intermediation mainly serves the purpose of quality control. Vendors manage their own account on Jumia's platform. The data collected from consumers remain in Jumia, as the company doesn't sell consumer data to third party. Jumia has in-house data analytics that are used in future plans and marketing initiatives either on the vendor or company level.

Jumia has not yet reached the critical mass since ecommerce in Egypt is about 2% of the Gross Domestic Product (GDP) and is dominated by 2 major market places Souq and Jumia Egypt, where the latter claims the majority of the market share. According to the underlying theoretical assessment framework for DPs, the sheer market size, i.e. the Egyptian market, is a key enabler for Jumia Egypt. Also consumer experience is considered very critical to acquire new customers. Key revenue stream is only commission-based and vendors price their goods. (scoopempire.com)

Partnership is one of the DP's dynamics. Consequently, Jumia Egypt introduced initiatives such as promoting Jumia as a platform for SMEs and the formalization of the informal sector. In a developing country such as Egypt, this type of partnership with SMEs allows the platform to attract new vendors and provides a solution to the informal sector ramification. One of Jumia's recent steps was partnering with the Chamber of Handcrafts for the purpose of marketing the products of artisans. Apart from these initiatives, Jumia put a lot of effort into developing a solid review system through both customer as well as vendor ratings., In March 2016, Jumia Group, the leading ecommerce platform in Africa, secured over € 300M of funding from MTN, Rocket Internet, AXA, Goldman Sachs and Orange mobile operator.

The underlying assessment framework introduced in the World Bank ICT4D 2018 Report is built on the following 4 pillars: definition of DP, the business model adopted by DP, DP enablers and DP dynamics. Envelopment is considered one of the DPs dynamics that empower the DPs to extend their activities and expand their businesses. According to Constantinides et al., 2018, envelopment can be defined as a platform that uses its overlapping user base to overcome entry barriers and expand its reach (Constantinides et al., 2018). Moreover, envelopment has been

defined as “entry by one platform provider into another’s market by bundling its own platform’s functionality with that of the target’s so as to leverage shared user relationships and common components” (Eisenmann et al., 2011, p. 1271). Envelopment is core factor in Jumia Egypt’s strategy to develop and expand. It is a key factor in that respect for it has helped Jumia Egypt to leverage its market dominance in retail to other sectors such as food, travel etc. Jumia companies in addition to its online commerce are represented in Table 1.

Table 1: Examples of envelopment strategies by Jumia

Jumia Travel	is a hotel booking website that provides travelers with the perfect place/flight they need at the best price from more than 25,000 hotels in Africa and more than 200,000 hotels around the world.
Jumia Food	is an online food ordering site, connecting consumers with the best restaurants around them.
Jumia House	is a real estate platform connecting real estate agencies and individuals with prospective buyers.
Jumia Cars	is an online car dealer marketplace connecting car sellers with prospective buyers
Jumia Jobs	is an online job platform which connects companies who wish to recruit with job seekers
Jumia Deals	is an online classified platform connecting vendors and buyers of second hand products for the best deals.
Jumia Services	Jumia Services is a B2B logistics provider for online commerce.

It is worth noting that the underlying structure of the survey adopted for analyzing Jumia Egypt platform is based on 4 pillars; these can be summarized in Jumia Egypt’s platform as follows: Jumia defines its business as online shopping or virtual mall, where vendors sell their products on Jumia’s platform. The core business model of Jumia is commission-based revenue. The digital platform enablers include technology, where a mobile operator such as Orange is a shareholder, payment methods, and geo-localization especially in Africa. Partnerships and envelopment are critical growth dynamics to the Jumia Egypt market place.

Finally, other challenges facing the virtual marketplace in Egypt in general include: trust that correlates with the credibility of the marketplace. The consumer culture had to undergo several significant changes, namely, Egyptian consumers had to go through the process of learning how to interact with the virtual market place, in the sense of establishing trust when buying products without physically checking them out beforehand. The other factor is education and awareness. Increasing awareness of this new paradigm shift in the digital economy takes place more smoothly when the consumer has a high level of education. This is helpful in terms of quality assurance and the importance of punctuality, professionalism and branding.



## 5. Conclusion & Policy Recommendations

Jumia in Africa and Jumia Egypt are vivid examples of successful digital market places or digital platforms in developing countries. The analytical framework presented in the current paper reveals that Jumia adopts a commission-based business model and many innovative business practices to overcome hurdles that face its growth and expansion in Africa.

However, from the perspective of policy, digital industry platforms in developing countries, in general, and in Egypt, in particular, still lack the policymaker's support and a clear strategy to promote digital industry platforms as new technologies in the digital economy. Policymakers need to be aware that such platforms are fueling the next wave of breakthrough innovation and disruptive growth. Progressively, platform-based companies are capturing more of the digital economy's opportunities for strong growth, as it is the next wave of transformation, and increased profitability.

Rapid technological change in cloud computing, ubiquitous mobility as well as connectivity resulted in considerably surmounting many barriers such as technology and cost barriers coupled with the uptake of industry digital platforms. Additionally, more and more opportunities were introduced for new entrants, as well as incumbents, across the globe as a result of these rapid technological changes.(Accenture 2016a)

Platforms are also regarded as one of the most attractive means incumbent on market leaders to evolve into market players in other related new digital age markets or industries. Policymakers can advance both supply-side enablers of digital platforms and demand-side enablers. The former includes: interoperability of data protection standards in addition to new regulations adapted to the specificities of digital platforms that foster innovation. Policymakers can also support demand-side platform enablers: firstly, by investing in consumer digital adoption; and secondly, by establishing user protection, offering capacity building as well as training programs to informal small businesses. By so doing, small businesses get to benefit from engaging with global platforms, where they can be considered as potential partners; and finally, protecting users' data is essential for online platforms and has significant impact on competition in the designated economies.

What follows is further elaboration and analysis of both the supply-side enablers of industry platforms and the demand-side take-up enablers:

Supply-side Enablers: 1. Interoperability of data protection standards; interoperability is crucial in ensuring privacy and security protections for the users' data that is owned by the DPs. Moreover, new regulations adapted to the specificities of DPs foster innovation; enabling and updating DPs, using the recent technological changes in the industry and regulatory environment, is an essential component to an ecosystem of booming platforms. 2. Demand-side take-up enablers: consumers who are able to afford and access the digital world will be the ones to benefit the most from the new wave of technologies, including platform technology. So ubiquitous connectivity is the pre-requisite for the uptake of digital platforms from the demand-side. Furthermore, "consumer engagement" has been proclaimed as instrumental in enabling sales growth, competitive advantage, and profitability. Thus overcoming the digital divides in digital technology adoption is one of the enabling factors for the industry platforms (Badran,

2014). 3. Establishing user protection: Empowering the demand-side of the market of platforms by ensuring critical user protection either by enacting laws and regulations or by increasing public awareness with consumer rights is a cornerstone to the booming of the industrial platforms ecosystem. Offering capacity building and training programs for small and medium businesses (SMEs) so that they can benefit from engaging with global platforms. This can take the form of motivating informal SME owners by tax breaks or subsidies (Badran, 2014) for enrolling in training programs or encouraging them through giving incentives to global platforms to localize their businesses by partnering with a local business partner. 4. Users' data are essential for online platforms and affects competition: users' data are of considerable value for online platforms to keep advertisers onboard, to enable the provision of services to users that are of the quality and relevance they expect, and to maintain the platforms' strong position in the market. Hence, users' data are becoming a crucial edge in the competition. Because of the dependence on their users' base, online platforms have an interest in keeping their systems closed (Graef et al., 2015), which would eventually result in increasing the likelihood of market dominance and barriers to entry. Additionally, access problems for consumers' data by the consumers themselves are known as data portability and are considered a demand-side platform enabler. Data portability is defined as 'the right to data portability' (Art. 18, General Data Protection Regulation, 2012). This right would enable users "to transfer data from one electronic processing system into another, without being prevented from doing so by the controller" (General Data Protection Regulation, 2012, p.9, Graef et al., 2015). Once entered into force, the right to data portability would enable users to move their profile and other data contained in an online platform from one social network service to another. Although the right to data portability is introduced in a data protection instrument, it also has a competition law angle as the consumer is empowered to own his data and transfer it to another platform of his own choice. (Graef et al., 2015)

Generally, policymakers should adopt a digital policy that supports the development of industry digital platforms. They should empower them and create an enabling regulatory as well as business environment, due to their positive impact and significant momentum on the national and international economies. Furthermore, policymakers may choose to engage with the platform owners to ensure that their platforms can be fully used, and that existing regulations do not hamper access.

An innovative funding model for ecommerce capacity building could be the establishment of a social impact bond (Suominen, 2016a). Such a bond would involve private foundations, social impact investors, and/or ecommerce platforms making an initial investment, which would be compensated by governments, and perhaps also by development agencies, only if the project meets certain specified metrics (such as the number of ecommerce-related jobs created or the amount of new online exports achieved) (MIT Technology Review, 2017).

Finally, the absence of ecommerce data and statistics for most developing countries remains a challenge. The implications of missing ecommerce statistics are evident. Governments are not well informed when drafting pertaining policies. From the private sector stand point, ecommerce statistics are also essential to make well-versed investments and planned decisions. Thus, more resources need to be channeled to improve the capacity of developing countries to carry out enterprises and household surveys with a view to generating the statistics needed for analysis of

ecommerce trends and development impacts. Particular attention should be given to collecting statistics related to both B2B and B2C ecommerce. (MIT Technology Review, 2017)

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