

## **Web 2.0, Connectedness and Conversion of Users into Commodities and Digital Audience Labour**

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### **Abstract**

The promises of Web 2.0 - enabling creation and exchange of user-generated content, and that of technology - greater accessibility and interactivity, have spawn more dynamic and interconnected capabilities. Smart phones, tablets and computers for instance, leverage the Web, Websites, search engines, aggregators, social media, blogs, storage systems and software apps to multitask and perform functions which overlap. Interestingly, some businesses leverage this overlapping functionality and user information to incentivize consumer experience with products or services and the media, while serving and billing each consumer simultaneously. And with businesses becoming increasingly information-driven, some businesses tap into user information to transform users into digital audience labour and commodities sellable to advertisers. Anchoring on the technological determinism and diffusion of innovations theories, this paper considers this subtle conversion of users and how these technologies influence modern business processes. The paper found that Web 2.0 and associated technologies have transformed business processes, brought greater convenience and improved service delivery. It recommends

that businesses must continue to consider cost and convenience of consumers and instead of manipulating users' information should invent ways of co-creating mutually-beneficial values with consumers.

**Keywords:** Web 2.0, *Internet, Overlap, Interactivity, User-generated content, Websites, Search engines, Googlization, Digital labour.*

## **Introduction**

Technology is blending business and human communications in quite innovative ways. The reasons are obvious. First, “business depends on communication. People must communicate to plan products, hire, train, and motivate workers, coordinate manufacturing and delivery, persuade customers to buy, and bill them for the sale” (Locker, 2007, p. 258). Second “for years, technology had promised easier access to more information in a wider variety of media; it had promised greater accessibility and interactivity” (Worley, 2010, p. 432). With Web 2.0, Worley (2010) believes “technology has delivered on that promise” (p. 432).

There exists today a wider variety of media, sophisticated technologies and increasing connectivity between them, but quite overwhelming also, is the role and functional implication of Web 2.0 on human communication and business. The Web, according to Rodman (2006, p. 298), is “a software system that simplifies Internet navigation.” But Web 2.0 is an advanced *version*, defined by Sweetser and Lariscy (2008, p. 179), as “read-write Web, where the online audience moves beyond passive viewing of Web content to actually contributing to the content.” Web 2.0 brought new features and functionality that were not available in the first. They include *Blogs* which allow users to post thoughts and updates about their lives on the Web; *Wikis* (Wikipedia and other sites) which enable users from around the world to add and update online content; *Social networking* sites which allow users to build

and customize their own profiles and communicate with friends; and *Web applications*; a broad range of new applications which make it possible for users to run programmes directly in a Web browser. All these too, do not function in isolation, they rely on other wired and wireless technologies; laptops, cell phones, tablets, chips, smartcards, storage systems, and of course, software apps which coordinate functionalities among them. Today, “the Web 2.0 gives the platform to exchange ideas, views, thoughts, experiences, opinions, share information, likes and dislikes to the millions of peoples using blogs, reviews, and other social network sites” (Nishikant & Bikram, 2015, p. 113). In other words, Web 2.0 is a marketplace of information.

The promises of Web 2.0 - enabling creation and exchange of user-generated content, and that of technology - greater accessibility and interactivity, have evolved and created much more dynamic and interconnected capabilities which have far reaching implications for human communications and businesses than may have been fathomed by the designers of these technologies. Africa Practice (2014) corroborates this fact thus; “the functions of social media have and continue to transform into that which was never anticipated. Most founders of social networks are surprised with the diverse and astounding ways users are able to engage and utilise their platform. That is the beauty of invention within social media - capacity and opportunities are infinite.” Evidently, the more technologies develop, the more they interconnect, and the more they are streamlined to perform more or multiple functions. This informed by Ogaraku's (2015, p. 125) assertion that “technological innovations come in the realm of higher order. The newer usually come with more unique features and greater degree of sophistication or across-the-border application.” Sometimes, the across-the-border application creates new functions which also create new terms. “Terms like podcasting, weblogs, DVR/TiVo, satellite radio, adgaming, RSS,

wireless, advertainment, and VOD weren't part of our vocabulary until the early 2000s (Locker, 2007, p. 258). But today, they constitute the growing sophisticated forms of communications, bandied around as either wireless, mobile, new media, digital, or Internet. Combined, they are revolutionizing businesses as Lattimore, Baskin, Heiman and Toth (2007, p. 356) illustrate:

The Internet, chat rooms, intranet, Web sites, e-mail, blogs and other computer-based tools as well as wireless technology provide numerous opportunities for disseminating information, giving and receiving feedback, purchasing goods and services, tapping into what consumers are thinking, providing access to corporate materials, updating consumers and employees and more.

In acknowledgement, Rashid (2014, p. ix) quips: “we all know it; the digital era is here changing how businesses operate.” These technologies have not only penetrated various aspects of businesses, they have, as a matter of fact made today's businesses largely information-based. From search for products and services, to buying and payment, ordering and even delivery, some form of information exchange is involved and technologies interconnect to facilitate this information exchange. Businesses for instance establish Internet presence through Websites, e-mails, social media, blogs, chat rooms, videoconference etc and then use associated technologies to link their offerings to other services in other industries. To coordinate transactions, information crisscrosses from organization to another. A consumer can go to any of these: Websites, e-mails, social media, blogs, and chat rooms to obtain information about a product, then use online or normal voice call to make order, and pay through various means like ATM, POS or dedicated bank app. In other words, “for many businesses, the 'product' is information or services rather than something tangible.

Information and services are created and delivered by

communication. In every organization, communication is the way people get their points across and get work done” (Locker, 2000, p. 4). These technologies have become invaluable to businesses, and form part of the so-called consumer-generated media or information. Beyond being relatively low-cost two-way communication tools, their appropriate use also generates substantial and important information which marketers use to predict consumer interests and to enchant them. Their emergence too made marketing experts like Stengel to see television, newspapers and magazines as going obsolete, thus his warning to marketers still using them to become more “innovative and creative or be doomed to failure” (Elliot, 2004). Besides, marketers appear to be heeding this call, for every other season new channels; apps, platforms, devices emerge to incentivize consumer experience with products/services and the media themselves, most businesses try to co-opt technologies so as to run more effectively, old technologies evolve, new ones emerge and converge to create new needs and in turn new services. Interestingly, these developments result in increasingly tech-savvy consumers who cannot wait to embrace the next innovation.

“The tech industry has been adept at figuring out what customers might need even before they realize they need it, and are willing to put their own products line at risk with the next innovation” (Selingo, 2013). Hardware manufacturers, for instance, launch new lines of products almost every season, or at least bi-yearly; Apple launched two new versions of the iPod and the new iPhone4 in 2011 (Lee & Yang, 2015). Google too, went on to develop its own blog search engine, while Microsoft added some blog-friendly features into its Vista operating system (Google, 2005). These developments are coming up because of the overwhelming proliferation of online activities, and the position of the Web/Internet as the centrepiece of it all.

All sectors of the economy including consumption leverage the Web and associated technologies. As Lattimore *et al*,

(2007, p. 174) noted, blogs, iPod, video casting are recent uses of technology that have been adopted by consumers. But “of the three, blogs have had the most use by audiences.” For Nielsen too (2012), blogs are sometimes overlooked as a significant source of online buzz in comparison to social networking sites, yet consumer interest in blogs keep growing. By the end of 2011, for instance, Nielsen tracked over 181 million blogs around the world, up from 36 million only five years earlier in 2006. Pollster Online Survey also reported that 93.8% of Internet users have browsed blogs, and 66.6% have a personal blog. These users are normal people - everyday consumers and audiences - whose online activities equally feature consumption matters, so marketers keep tabs on them to extract information about their consumption behaviours.

Fundamentally, most communication technologies are intended to improve human communications. People primarily use Internet, chat rooms, e-mails, social media, blogs etc for personal expressions, profiling and information exchange, but their functions overlap to provide for marketers, opportunities to creatively and gainfully communicate with customers too. These technologies facilitate one-on-one interaction, advertising (with their accompanying graphics, audio, video etc), promotions, inquiry, ordering, billing/charging for products and services etc. However, marketers poll information through these means to take advantage of consumers.

Meanwhile, to overlap in the context of this paper, means to extend beyond the fundamentals. Beyond calls and texts, for instance, a cell phone with Internet access, data and storage capability can be used to browse, chat, e-mail, cover events through camera and sound recorders, share and store documents, stream audio and video online, watch TV/films, listen to radio/music, upload and download documents, pictures, videos, audios, market products and services, make orders online and pay for them real-time. Various software apps have been developed

and embedded on digital devices to facilitate this multifunction.

However, amid growing competition, certain businesses like banks, hotels, newspapers etc are recognizing the need to personalize their brands and services, through dedicated apps developed to specifically grant customers direct access to their services right on their devices. These dedicated apps are easily and freely downloaded and installed on cell phones. With them, users can book hotels or airlines, pay or transfer money. They take users from their mobile devices directly into the domain of the very organizations without going through a Web browser or search engine. Of course, dedicated apps depend on the Web, but are wired directly instead of using other links. They list the various services of the owner organizations alongside command buttons, to enable users choose the services they want by mere clicking or typing of text commands. Again, social media - Facebook, Twitter, Google+, LinkedIn, WhatsApp, Pinterest - links are increasingly getting embedded on companies' Websites too. This integrates Web 2.0 into information sharing and business transactions, brining convenience and entertainment into both interactions.

Today, because of these developments, business transaction is gradually shifting from the traditional going to the mall, looking around, selecting items, paying cash at the counter, and walking away with the items, to using a common device like the cell phone, punching a few commands from a comfort zone and waiting for delivery. The whole process has become connected into one. In fact, the number of *connected things* is increasing at an alarming rate - the new *Internet of Things* (IoT) mantra encapsulates this trend. It entails the connection of physical things by embedding them with softwares, sensors, chips, actuators, electronics, and networking connectivity, that enable them exchange data and function in a controlled manner. Things are now so connected that one can stay in the comfort of his home and transact virtually any business. Of course, this is expected to result in greater efficacy, accuracy and socioeconomic

benefits, and technology is at the centre of it.

But unknown to many consumers, certain businesses are leveraging technological functions which overlap to render services too and make profits from customers simultaneously. When for instance, a customer uses his cell phone which uses data to search the Net for products, visits different sites and blogs, asks questions on the social media, compares features, functionality and prices, and calls the companies (probably on charges outside data) to make his orders, pays online, and awaits delivery, as simple as it appears, the customer is involved in different billable economic activities involving different businesses at the same time. They include the network operators charging for the calls and data, the companies purchased from, the delivery companies and the bank used for the payment. In fact, many connected businesses benefited from this seemingly simple, single transaction. The difference is that while some charges like the actual payment for the purchased goods are obvious, others like data and bank charges are subtle. With this background, this paper considers some implication of these developments, the key elements involved, and how technologies influence modern business processes. The paper draws strength from existing literature.

### **Problem and Objectives**

Web 2.0 and associated technologies have spawned a panoply of interconnected media which consumers use every day for a variety of purposes; personal communications, entertainment, and consumption. This usage connotes information exchange. The interconnectedness between these media too, means that a single device like a smart phone can be used to perform a multiplicity of functions simultaneously. This implies exchange of more information. Consumers appear to be adjusting, and even loving these new developments. However, searching the Internet for a given product for instance, visiting different Websites and blogs,

asking questions among other users of the product on social media like Facebook or Twitter, and comparing alternatives, features, functionality and prices do not on the surface appear to constitute any risk, or connote anything profiting to marketers. But indeed, they do. Through browsing and other online activities, users/consumers help to generate contents, and innocently release vital information that can be of importance to business people. And when the need arises, through marketing and ad research which leverage the Internet and related technologies, vast amounts of information on people and their consumption habits are collected and analyzed to generate, and even predict, the patterns of consumers' behaviours, their wishes, strengths and weaknesses; factors which help in effective advertising strategy. This is done with increasing accuracy now because specialized software apps which are programmed to index patterns of online behaviours and consumption among users are being embedded on some Websites. This vast amount of user information and what they are used for is at the discretion of the marketers and advertisers. This is a cause for concern particularly now that the new media continue to proliferate. Against this backdrop, the paper aims to achieve the following objectives;

1. Discuss the import of Web 2.0 and associated technologies on businesses and human communications,
2. Review how the key technologies contribute to improve business processes and economic development and
3. Highlight how businesses and advertisers manipulate user information to turn users into commodities and digital audience labour.

### **Theoretical Framework**

This paper anchors on the Technological Determinism and Diffusion of Innovations theories. The Technological Determinism Theory embodies the thinking that machines and their developments drive socio/economic and cultural changes

(Ogaraku, 2015). To Onyike, Chiaha & Temofeh (2014, p. 130), “at the extreme, technological determinists believe that every innovation in society is determined by a noticeable change in technology. The theory has the following assumptions: communication technology is basic to society; technology drives change in media industries; each technology is tilted towards particular communication forms, contents and uses; the sequence of invention and application of communication technology influence social change; communication revolutions engender social revolutions, new media undermine old basis of power (McQuail, 2005).

Evidently, as new technologies emerge, the functions they offer usually evoke enthusiasm from users. The digital, wireless, mobile and Internet technologies have irrevocably changed the society. The connectivity between them as demonstrated by the mobile devices in use today, with their multitasking capabilities, have revolutionized aspects of life - business, consumption, culture. In the context of business, technology has disrupted what used to be the norm. Technologies enable consumers to search for goods and services, pay and wait for delivery from their homes or comfort zones. They enable business people advertise and market their goods and services more effectively. So, technologies, to a large extent, determine and shape what and how so many businesses are run today; mobile banking, online retailing, downloadable dedicated apps which grant customers instance access to the services of the app owners, are few examples.

Rogers' (1995) Diffusion of Innovations Theory is also apt for this paper. Diffusion and adoption are the processes which govern the utilization of innovations. *While* the innovation could be “*an idea, practice or object perceived as new by an individual*” (Rogers 1995, p. 5), the term adoption, refers to the uptake of innovations by individuals (Leeuwis, 2004). The Web 2.0 and associated technologies which to a large extent constitute the new media and tools used for online interactions are unarguably great

innovations. The success and speed of their adoption can be affected by several factors; characteristics of the potential adopters, rate of adoption, nature of the social system and characteristics of the innovation.

Five categories of individuals have been identified on the basis of their general acceptance of innovations: innovators, early adopters, early majority, late majority, and laggards. Innovators thrive on innovations; early adopters seek challenges and generally like innovations; the early majority prefer to observe the impact of innovations on innovators and early adopters prior to making a deliberate decision to adopt the innovation; the late majority are sceptical, sometimes suspicious, and occasionally change only as a last resort; and laggards are traditional, steadfast resisters who often reject innovations completely (Rogers, 2003).

All these classes are available in Nigeria. As Ashong & Ogaraku (2017, p. 2) reported, Nigeria is experiencing “a burgeoning online presence.” Many Nigerians, particularly the younger ones steadily go online for various reasons. But while there are those who cannot spend a day without going online, may be to browse, chat, blog or buy things, there are still those who are sceptical and resist online banking and interactions of any sorts. Besides, Nigeria is still developing. The infrastructure which supports the Internet, and by extension the adoption of the new media are not altogether efficient in Nigeria, at least for now; some people still complain of poor or no network from time to time and in some locations, no power to even charge the phones or devices. Ogaraku (2015, p. 124) also drew attention to “power outages, monthly costs of cable, connection problems that mostly plague the computer.” But to Adaja & Ayodele (2013, p. 57), “the only limitation to the utilization of the potentials of these platforms is illiteracy in terms of the hardware, software and usage.” However, all of them affect diffusion of innovations.

## **Consumers/Users as Commodities and Digital Audience Labour**

Unfortunately, end-users share a wide variety of information – sensitive and non-sensitive on the Internet. Many consumers today are not aware that ordinary *browsing* - surfing the Net, social media, blogs, chatting - matters to businesses, and that the number of times a webpage is viewed (visited) marks its popularity and rating, and in some cases earning depending on its business. A casual visit to a webpage can turn a consumer into a commodity that can be sold to advertisers. In fact, the massive information about users available on the Web has ended up turning them into what is termed 'digital audience labour.' Presently, scholars have increasingly pointed to the role of the 'digital labour' of digital media users in the profit-generating strategies employed by digital media companies” (Nixon, 2016, p.212).

Users have been described as providing a kind of 'free labour' (Terranova, 2000) for companies like MySpace (Coté & Pybus, 2007) and Facebook (Cohen, 2008). Users' activity has been described as a commodity that is exchanged between digital media companies and advertisers (Fuchs, 2010). Users have also been described as doing the work of creating the profiles of their online activities that advertisers use to target their advertisements by virtue of the fact that those activities are tracked and useful data generated from them (Andrejevic, 2007). Unknown to most users, their information is so important for business that “some companies now give away computers, Internet access, or both, in exchange for permission to monitor users' online interests. This is occurring because companies recognize the economic benefits of wiring the world” (Itek & Ogaraku, 2013, p. 54). The world is so wired to enable information crisscross end-to-end 24/7; the implication underpins the context within which we now live – *the information society*. And it can be profited from.

Information has become a commodity. In an economy like ours where business activities centre on knowledge, information

and services, *communication* which invariably entails *information provision* has become “part of people's job, something they may be remunerated for” (Bargiela-Chiapini, 2009, p. 323). The ability to communicate information properly is now looked for and remunerated (Pikhart & Hola, 2013). But, while depending on the media - radio, TV, newspapers, magazines - to provide them with information (Nwagbara & Ogaraku, 2014), audiences as consumers also submit, albeit innocently, through their use of digital technologies, other forms of information which marketers use to enchant them. To facilitate transaction and improve business, marketers give out information to customers, and collect information from them. Technologies now help both to exchange information easily, quickly, cost-effectively and more. But many consumers do not know how much business people crave for certain information and the length they get to, to extract them. Businesses crave for information that would help them expand, gain the most from customers and be industry leaders, information about how they are faring or customer perception of their brands and services; information about needs, lifestyles, choices, preferences, consumption behaviours/habits. Ordinarily, these kinds of information are difficult to extract from consumers but now technologies have enabled businesses segment consumers according to certain characteristics or markets, and helped them extract these information without seeming to do so. This is done through polling and monitoring of people's/users' online activities by way of specialized apps programmed to index them according to certain characteristics the Website owner wants.

Of course, businesses now monitor the array of online social media in order to detect what is being said about their organizations and important issues. For Broom (2009, p. 303), “chat rooms, online forums, discussion groups, and blog posts can be important sources of feedback.” In other words, platforms where people innocently come to share information among themselves have dramatically turned into where marketers also

come in to scoop information. With this, social media platforms have become, for Curran & Lennon (2011, p. 24) “various sources of online knowledge and information about the services, products and brands that are generated and shared by users.” It is also believed that social media provide major means to influence the users' behaviour in the form of opinions, awareness, feedback, usage, intention, purchasing habit, analyzing and information sharing (Chang, 2008). This is exemplified by the activities of some disgruntled customers who turned to the Internet to vent their frustrations with unresponsive companies, as reported in one *New York Times* article (Appleman, 2001). Now monitoring online sources has helped businesses tap into the rapidly expanding channels of interactive communication and intervene in virtual conversation. In fact, “some professional research firms such as Nielsen-BuzzMetrics and BuzzLogic have been established specifically to “harvest” online comments for clients and report what is said about brands, products and organizations” (Broom, 2009, p.303).

Interestingly, ordinary online activity and the number of times a Website gets visited now matter. Generating Internet traffic has become a big business, and big search engines and aggregators like Google, Yahoo!, AOL, MSN, are the ones controlling this domain. They already have the infrastructure that supports it. In their illustration of this new development, Kang & McAllister (2011) described the process where Google “commodifies and sells audiences to advertisers” (p. 142) as the digital equivalent of Meehan's (1984) audience ratings commodity: that Google gathers data through surveillance of its users and then sells those data to advertisers. That argument also agrees with Andrejevic's (2002, p. 297) theory of the exploitation of “the work of being watched”, because it is the monitored activity of users that supposedly produces the data that are commodified and sold. Kang & McAllister also trailed Smythe's (1977) concept of an audience commodity, to some extent, by insisting that “Google

sells its users' cognition, including 'attention' and 'its users Internet activities'" (Kang & McAllister, 2011, pp.146-150). Towing similar line, Lee (2011) argues that the way Google commodifies its users is by selling information about them. In fact, a body of literature is growing on Google and its activities. Examples include *The Googlization of Everything* which refers primarily to "a process of trying to gain control over numerous activities of digital cultural consumption" (Nixon, 2016, p. 212). In *The Googlization of Everything and Why We Should Worry*, Vaidhyathan (2012) demonstrates that 'Google dominates the World Wide Web', by having "a wide range of digital communicative activities, including Web search, e-mail, online video posting and viewing, and numerous other activities 'Googlized'" (p.13).

### **Key Instruments Involved in these Developments**

Although it makes for exciting times the adoption of new technologies (Romaniuk, Beal, & Jeans, 2012), one of the most pressing issues within marketing is how the various media channels compare in terms of effectiveness (Marketing Science Institute, 2010 in Danaher & Dagger, 2013). Advertisers and marketers no longer rely solely on the traditional high-reach media such as TV, they are now using a mix of touch points embracing the opportunities technology has brought forth (Aitchison, 2011 in Romaniuk, Beal & Uncles, 2013). The key instruments include multitasking portable devices, websites, search engines and aggregators, social media and blogs, and focus of businesses is on the effectiveness of each and possible synergies between them. In addition, Irvine & Anderson (2008) comment that the use of ICT does not only offer practical benefits for general management, but also enables companies to overcome the disadvantages of place and space.

### **Multi-tasking Portable Devices:**

Smartphones, Blackberrys, iPods, tablets, DVDs, wireless broadband-enabled laptops, and other multitasking portable devices are holding sway today in a manner that touches almost every facet of life. These portable, wireless electronic devices are blending technologies with various capabilities; browsing, e-mailing, social media, blogging and chatting, audio and video streaming, radio and television reception, in addition to camera, recording, uploading, downloading and instant messaging capabilities. For Locker & Kaczmarek (2007, p. 233), “these capabilities will continue to grow in number and sophistication, creating more features but also an ongoing learning curve for users.” According to Leonard (2004, p. 94), they “signal a major shift from mass production, mass marketing, and mass merchandising to an era of customized products and services.” That means that, as users create their own profiles and interests, products and services are getting tailored alongside the key features and characteristics of those interests. Besides that, these technologies equally animate life in an entertaining kind of way. Like Lattimore *et al*, (2007, p. 258) illustrate, “not only are the gargets themselves multifunctional, but customers are also using more than one of them at one time: looking at television, talking on cell phones, working on their computers, instant-messaging, and listening to the iPod and the like.”

Thus, with multitasking devices, a consumer is at convenience communicating while being entertained, and shopping while banking at the same time. So, they are the carriers of that convenience usually alluded to technologies, but of course, with the help of software applications. However, Web 2.0 enables this connectedness. Mobile devices are increasingly being designed to interact with products and also generate and communicate valuable item-level product data using individual user's product usage. These devices and the services running on

them via apps are thus not only becoming increasingly valuable data sources, but also providers of context information. Most product-relevant data collected via personal mobile devices emerge from a number of Web 2.0 social network services users are closely attached to (Kadiri, Grabot, Thoben, Hribernik, Emmanouilidis, von Cieminski & Kiritsis, 2016).

### **Websites:**

Many businesses have Websites which create instant access to them and enable them give out information about themselves and promote their products and services. They are bringing new experiences to businesses with the way they are integrating other platforms - social media, blogs, e-mail - and manipulating Web features. Now on Websites for instance, “food brands offer recipes, promotional booklets, screen savers, meal planners, and dozens of other features to strengthen their ties with the customers. Fast-food restaurants provide nutritional information about their menu items, entice users to participate in their sweepstakes, and identify their locations” (Lattimore *et al*, 2007, p. 258). “They also might create as Burger King did, a “Subservient Chicken” Website where you could give orders to a garter-clad hen in a dingy motel room” (Leonard, 2004, p. 94). “A campaign by Procter & Gamble's Tide included a Website where customers could see how many people in their area tried the product” (Frank and Herskovits, 2005, p.1).

These are little perks which businesses excite consumers with through Websites. But while they seemingly offer convenience and entertainment, they are subtler tactics mostly branded products use to weave certain intangible experiences around their products to arouse consumers and also get their continued loyalty. Now focusing on what customers want are leading businesses into redefining themselves, and Websites help them redefine. It was in this context that Business Interiors CEO advised; “forget what we sell, let's ask customers what they want

and organize ourselves around that” (Greco, 1993, p.73). Businesses now listen more to the changing needs of the marketplace in which they compete, and evolve. According to Locker (2000, p. 3), “the ability to keep up with these changes and to understand them define our success as business professionals.” Meanwhile, “a successful brand constantly finds new ways to keep itself relevant and influence purchase behaviour by connecting emotionally with its target audience” (Clark & Leddy, 2005).

Websites are the centrepiece of most businesses. They are usually the first port of call for most consumers and they allow companies communicate firsthand with all stakeholders. Besides, vacancies and recruitments are run through Websites. In addition, “Websites are among the ways that consumers can reach companies with their complaints, questions and suggestions” (Lattimore *et al*, 2007, p. 263). Other platforms such as e-mails, social media are integrated into Websites to enable quick communication. “Many companies now provide or subscribe to instant messaging services for employees, and companies such as Yahoo! and MSN have instant messaging features for general users” (Locker & Kaczmarek, 2007, p. 234). Yahoo messenger and Facebook messenger are examples of instant messaging platforms and they can be embedded on company Websites. Web pages are linked too. A user can navigate from one Website to another of related business or nature. So, they are quite instrumental to business processes.

### **Search Engines and Aggregators:**

“Internet search engines and news aggregators such as Google, Yahoo!, Wikipedia, Bing, Ask.com, Yandex, AOL, MSN, Amazon, eBay, dictionary.com, IMDb, YouTube, etc., help us streamline our search for specific information/knowledge within few key words (Itek & Ogaraku, 2013, p. 52). Now, instead of going through general-interest sources or documents, the search engines are helping consumers to simplify their inquiries. Via

search engines, “anybody who wishes can learn or know, instantly too, anything about anybody, anywhere, at any time” (Itek & Ogaraku, 2013, p. 52). This also goes for search for products, services, brands, issues, news, ideas, locations and what have you. Interestingly, these search engines have a way of indexing searches which help them categorize consumers or users alongside certain characteristics or markets.

These kinds of data have huge implication for business planning, advertising campaign, promotion and niche marketing. With so many consumers using the Web for product information and cost comparisons, the need for companies to come up tops during searches or increase their visibility is becoming critical. Most of these platforms collect data during user online interaction which are used for business purposes. Marketers today try to indentify the terms and languages used by customers searching for goods and services, so as to leverage them. “Search engine marketing is a tool companies can use to increase the possibility that their listings and brands appear when one searches for a particular term” (Schipul, 2005, p. 6). This helps to facilitate business processes.

### **Social Media:**

Facebook, Twitter, Google+, LinkedIn, blogs and other social media are becoming permanent features on most mobile devices and company Websites. Social Media threads on Websites help users comment on the sites as well as share any information on the Website to the very social media account they want. The shared information still carries link to the source Website which can be directly accessed through a Web browser. According to Hutton and Fosdick (2011), for communication and sharing information, businesses are shifting their focus from the traditional form of media to online and digital media such as social networking sites, blogs, wikis and viral marketing. The important purpose of social media is to develop a community around company's products and

to increase brand awareness, offering information on new products, launching contests, responding to customer questions and obtaining feedback and improvements suggestions from them (Füller, Matzler & Hoppe, 2008; Kim, Bae & Kang, 2008). In fact, social media are new and innovative tools dramatically transforming the way firms communicate. They create many interactive opportunities for businesses. For example, they can be used in communicating with customers and altering their expectation of their relationship with businesses (Abed *et al*, 2015a, b; Dwivedi *et al*, 2015). Dahan & Hauser (2002) confirm they have considerably altered the way communication and interaction work between businesses and their consumers. It has also dramatically enhanced the ability of businesses to integrate customers in many of their activities (Bartl *et al*, 2012; Sawhney & Prandelli, 2000). The adoption and integration of social media platforms facilitate the interaction and communication to continue in the virtual world after the physical world or vice versa (Nambisan, 2002).

There are opportunities for businesses to extend their reach of potential customers through different social media platforms. The information generated by and accumulated on social media can be used by businesses to identify the target audience and improve the overall customer experience (Chen *et al.*, 2009). Increasingly, researchers are suggesting that businesses incorporate social media in their functions (Curran & Lennon, 2011). The reasons are diverse. First of all, they can be seen as alternative marketing channels to ensure promotion and distribution of products. Along with the traditional channels, social media can provide greater impact on customers and spreading area, which continually develops without a specific direction and concerted actions.

The most common social networking sites are seen as an easy way to promote products or services. The advantage of this approach is that the direct means of communication provides a

healthy relation in the online environment, between different brands and their target audience. This feature can assist the company to be present in the market, communicate, influence and maintain a strong position against competing brands. “In addition, it is very easy for a company to obtain information about the industry in general, competitor's intentions, consumer behaviour etc” (*Negru?a, Rus & Sofic , 2014, p. 590*). Other reasons include that they are communication tools for entertainment, which can also be leveraged in marketing. They also increase the searchability or visibility of their brands or companies. They are potentially powerful media for finding key consumer influencers, engaging them, and generating brand advocates.

Again, customers have been looking at social media instead of Google or other search engines in order to get information about the companies (Newman, 2013). Social media are advantages to build trust between the customers and the company in a way that has never been seen with the traditional media (Deelmann & Loos, 2002). Added to this, are the sharability of information and documents (pictures, audios and videos) and availability of online audio and video calls which depend on cheap data on the social media. They are making inroads into businesses and helping to create new ones. People now market their products and services through the social media. Africa Practice (2014) reports that:

Within Nigeria, brands are growing their business alongside social media, encouraging customers to engage with them on these platforms while also providing services through those platforms. In this way brands are realizing the significance of being a part of these networks and connecting with their customer base in non-traditional ways.

### **Blogs:**

One of the most reigning buzz words now is blog or blogging. Blogs are simple online Web journals people use to converse about

a particular subject, viewpoint or idea (Lattimore *et al*, 2007, p. 174). Blogs focus equally cover products and services. A blog can be likened to a personalized diary where the owner or creator comes frequently to write things about himself or his companies, but which allows public participation and comments. People's opinions represent their take on whatever is posted on the blog. It can be used for various purposes; communicating one-on-one, announcing new product, testing a given idea, gathering industry specific information or promoting products and events. Although classified under social media, it appears to be in a class of its' own.

Blogs play a crucial role in directing Internet traffic through opinions and hyperlinks (Lefebvre, 2007). "Blogging is so popular, some businesses are turning to it to aid in recruiting employees, and CEOs are posting their own blogs in an effort to speak directly to customers and associates" (Locker & Kaczmarek, 2007, p. 233). Bob Lutz, Vice Chairman of General Motors (GM) is among the growing ranks of top executives who are into blogging; his FastLane Blog attracts both supporters and critic of GM's vehicles (Baker & Green, 2005). His blog belongs to the Corporate Blogs category which Lacono (2005, p.16) calls "the new Op-Ed page." "A blog can be a powerful tool to develop a meaningful dialogue with stakeholders" (Hood, 2005, p.14). They generate information and trends from external sources; mostly customers, so businesses monitor them closely. "Such information allows companies to pick up on the important issues before competitors do" (Lacono, 2005, p.16). Companies need to know what the *unofficial word* is, what is influencing their stakeholders to behave in the manner they desire? "Companies such as GM, Boeing, and Microsoft have developed blogs as a means to nurture relationships with their stakeholders and as an inexpensive way to get customer feedback about their companies" (Lattimore *et al*, 2007, p. 356). Even "disgruntled employees, activists, customers and others also create blogs to voice their sentiments on topics that involve corporate activities" (Lattimore *et al*, 2007, p. 356).

This diversity of concerns make businesses to need blogs, say for one-on-one communication, clearing of doubts, confirmation or clarification of incorrect information and announcement of plans for products to stakeholders. Companies which measure and index blogs; Technorati, Blogdigger, Blogpulse and Feedster, all count millions of blogs. But while some companies personally operate theirs, others hire bloggers to cover their activities.

## **How Technologies and Web 2.0 Influence Business Processes**

### **(1) Product Planning:**

Today, on account of technology and Web 2.0, “users of products are more aware, networked and expressive” (Rathore, Ilavarasan, & Dwivedi, 2016, p. 9), and incorporating user reviews and opinions as input into product design processes result in more effective designs (Helander & Khalid, 2006). Businesses - whether new or existing - recognize the need to accommodate stakeholders, particularly the consumers' opinions about products and services, since they are the end users, for this enables them to continuously improve on their products and services, retain the old and get new customers. They are also aware that the Web offers an open field for all to air their views without fear or favour. For this reason, they build various online channels between consumers and their employees who are involved in developing new products, normally with “online consumers' forums” and “contact us by e-mail” alternatives.

Other direct channels for consumer-generated feedback, include e-commerce sites, such as Amazon.com (Mudambi & Schuff, 2010), personal blog pages (Hsu *et al.*, 2013), online communities (Chang *et al.*, 2013), and social networking sites (Choi, 2013; Sotiriadis & van Zyl, 2013).

By monitoring opinions regarding products/services and brands, businesses generate huge data that also influence product

planning. In recent years, there has been a move in conventional product design process in the direction of a more user-centred design approach (Abramovici & Lindner, 2011). This shift has been in response to the increased awareness and recognition of the users of products as a potentially affluent design resource to support product development. Holbrook & Moore (1981) had before now, estimated that the ever-increasing customer culture will need researchers to get under the skin of social, lifestyle and user needs. Incorporating users into product development processes has the potential of considerably enhancing creativity as well as facilitating effective design (Abramovici & Lindner, 2011). With mobile devices and the apps running on them being made to generate user-based or context information, businesses have other subtle means of getting product planning idea via costumers.

One social media facilitating feedback and consumer data generation which aid product planning is blog. An instance of it is Netflix, an online movie-rental company which leverages the “profiles” service created by one blogger Mike Kaltschnee, who writes for the Web journal *Hacking Netflix*. The service allows customers to create up to five different lists of requested films with each paid subscription. There, kids and parents can work through their own separate lists of movies to rent, which became a plus for many Netflix users (Lattimore *et al*, 2007). The blog has not only helped the company reach out to forge positive relationships with clients, it has also helped it mine from the discussions that readers post on the blog as customers react to and critique their services. “Sometimes, company executives even participate in the conversations and Netflix employees have been known to use the blog as their home page” (Lattimore *et al*, 2007, p. 129). The beneficial relationship can only be imagined, yet *Hacking Netflix* represents just one of the ways businesses are leveraging social media and blogs to plan their products and services. They are

enabling companies engage customers and employees in two-way conversations in real-time (Lattimore *et al*, 2007, p. 141).

## **(2) Hiring of Employees:**

Businesses leverage these technologies and Web 2.0 to hire or recruit employees. For instance, vacancies are announced on Websites, with some featuring *How to Apply* button, which directly takes an applicant to the window where application can be made, or e-mail through which application letters, curriculum vitae and other supporting documents can be uploaded. Once an application is sent, the applicant can immediately check his/her e-mail through any mobile device - cell phone, laptop - to ensure the application went. Sometimes, there can be an instant correspondence e-mail from the company showing the application was received.

Companies also depend on e-mails to call applicants for interviews and other information. Again, the sharability of information on the social media enables information including vacancies, promotions, to be shared on the same social media, with links to the Web sites for interested persons to apply. This can also be done on blogs. For instance, “one of Microsoft’s 1,500-plus bloggers helps to recruit employees by sharing what it’s like to work at the company, jobs she is trying to fill, and hiring trends” (Lattimore *et al*, 2007, p. 357). Besides, these gamuts of technologies - social media, instant messenger, video conferencing are increasingly being used to conduct job interviews, and video interactions which may include two or more participants. They also enable employers view the characters and lifestyles of job seekers by investigating their online/social media activities without their knowledge. This has made and marred the careers of some people.

### **(3) Motivating Workers:**

Businesses are using some of these technologies in ways that motivate and get the best out of employees. From Webpages, chat rooms, social media to blogs, employees are engaged in ways that give them a sense of belonging and acceptance. Their input as well helps companies to function better. Online meetings allow management and employees to engage in simultaneous conversation where information are gathered and used. Employees' management meeting or interaction may be aided by other technologies that can leverage the Web 2.0. As Locker & Kaczmarek (2007) illustrated with the case of Allstate & McKinsey & Co. employees' management meetings, "any of these meetings may be supported with computers. Allstate and McKinsey & Co are among the organizations that key in comments on a computer hooked up to a large overhead projector for all the participants to see", "people literally see themselves being heard. Related comments are identified, linked, and edited on screen. The digressions and tangents quickly become apparent. The resulting documents can be posted on the company's intranet for further discussion and comments" (p. 323). This way technologies and Web 2.0 are used to improve interaction and belongingness, information are obtained while employees get more motivated.

Also, businesses are using collaborative apps embedded on mobile phones to enhance employees' productivity. From remote places, information can be transferred seamlessly. Greene (2016) reports that "apps like Slack offer more efficient alternative to traditional communication methods, giving employees the capability to collaborate via a familiar instant message format. Employees can customize inboxes, archive interactions, and access Slack across all devices, encouraging a sense of teamwork and accessibility."

#### **(4) Coordinating Manufacturing:**

Given the context of manufacturing companies, today's consumer demands products of the highest quality accompanied by information and services which together constitute a holistic product experience. There is also a noticeable trend towards the consumer placing more value on the sustainability, pedigree and authenticity of products (Kadiria *et al.*, 2016). These perceptions are deciphered via consumer market surveys. But according to Locker (2007, p. 265), “many opinions and complaints are not sent directly to the manufacturer or company. Instead, technology has made it possible for consumers to share their honest assessment about any or all aspects of a product or service with each other.” Websites, search engines, social media and blogs constitute the major sources for business or marketing information and manufacturer access them to follow up on what holds sway. Some manufacturers like Netflix get by today's bloggers or those who use consumer-generated media. They check out facts, provide the inside scoop about what is going on in companies, and share personal experiences. Moreover, sectors of manufacturing which have previously focused solely on the improvement of their products' quality to remain competitive in the marketplace are turning towards emphasizing the after-sales market of their products to remain competitive (Horvath, Ghez, Khodyakov & Yaqub, 2015). That after-sales survey or data are usually obtained based on the actual usage information of individual products by their customers as expressed on various online platforms.

#### **(5) Persuading Customers to Buy:**

The foremost persuader of consumers is advertising, and it is getting more pervasive with each new technology. In fact, almost all the technologies allow some form of advertising. Websites carry advertising, and are in themselves advertisements. Social media facilitate advertising as users share them on their timelines, and group chats. Mobile devices carry ads and also help ads to add

both intended and unintended effects. Most YouTube documents open with ads which though can be skipped, but not after some seconds of display, before the main documents play. By then the ad must have displayed itself to some point. Businesses use most of these platforms to persuade customers into buying goods and services. There are other technological incentives which encourage buying such as ease of access which is the hallmark of modern technologies. These platforms are not only carriers of advertisements; they also give consumer the windows to instant shopping. Today, people must not go to stores to buy goods and services. Dedicated apps allow instant ordering of goods and services from the Websites of many businesses. The proliferation of online retail stores like Jumia, Konga, JiJi and Yudala in Nigeria illustrates this trend. While consumers need quality, they also need ease of access, and this is what the new technologies and Web 2.0 are delivering.

Blogs have been remarkable in persuading consumers through advertising, but in a different kind of way. Müller, Goswami & Krcmar (2011) highlighted this context thus; “characterized by conversational, two-way communication and an affinity with their readers, blogs have two major advantages as an advertising platform. First, they are highly contextual and focused on a single topic, so the types of products or services advertised can accord with the theme of the blog.” That means advertisers and marketers are tailoring ads according blog themes and concerns, and with the increasing proliferation of blogs, they hold greater promises for ad revenue streams. During Technorati's 2009 State of the Blogosphere survey, it reported that advertisements were placed on more than 50% of the blogs surveyed (Sussman, 2009). This number is even higher for blogs that address public issues and events (Lowrey, Parrott & Meade, 2011).

Advertisements as the main means of persuading customers to buy have gone into almost every media, including mobile devices manufacturers and telecommunication service

providers. Wherever users are found, businesses strive to figure out the media to reach them. In fact, users have also been described as doing the work of creating the profiles of their online activities that advertisers use to target their advertisements by virtue of the fact that those activities are tracked and generate data (Andrejevic, 2007). Technology is instrumental to connecting all the media.

### **(6) Sales:**

In the quest to integrate technologies and Web 2.0 into selling, physical products are now augmented with “intelligence” to facilitate data generation, processing and networking with other products, users, stakeholders and components. This intelligence is implemented by different means, such as RFID, PEIDs (Product Embedded Information Devices), embedded systems, smart sensor systems, Single Board Computers (SBC), amongst others. As items are sold, they are counted automatically, and costs taken for example by just flashing a device across the items or placing them close to it; like we see in big supermarkets. The system generates the cost of each item, the total number of items and the total amount. It is also connected to a central database which on the click of a button can generate the entire record of all the items - sold and unsold for the day or over a given period. This enables shop owners know at an instance which products and items are in short supply and which are not etc. These technologies are interactive and connected.

### **(7) Billing Customers:**

Businesses are using technology to bill customers during sales. Wireless payment systems transform mobile phones into secure, self-contained purchasing tools capable of instantly authorizing payments over cellular networks. Today, we have different smartcards, e-wallet and m-wallet. E-wallet for instance, is a piece of software that stores an online shopper's credit card numbers and other personal information so that the shopper does not have to re-

enter that information for any other online purchase. There are technologies that enable cardholders to make purchases with a single click from their mobile devices. Some cell phone providers have incorporated m-wallet in their offerings. E-transfer, automated teller machine (ATM) transfer, point of sale (POS) terminals enable businesses to instantly bill customers with ease. All these systems are dependent on Internet and electronic infrastructure that work together with new technologies. Most of these billings are communicated instantly via e-mail to customers and they can view same through their mobile phones. These have granted greater customer experience and mobility.

With the advancement in technology, the market for mobile POS, iPad POS systems and wireless terminals has increased significantly. Best POS systems which are usually affordable and easy to use do more than just accept payments and process sales. They come with additional timesaving features such as inventory management, staff management, marketing tools, customer data gathering, task automation and other capabilities to make it easier to run and grow business. They offer 24/7 operation. Banks too are developing dedicated apps which are downloadable on mobile phones to help consumers and users pay instantly and carry out other banking functions. Some of these technologies are facilitated or shared using the Radio Frequency Identification (RFID) and Near Field Communication (NFC).

### **Nigeria's Place in the Labyrinth of Global Developments**

Of course, the demonstrations here depicts what happens in more technologically advanced economies like the U.S and UK, but that does not mean that businesses in Nigeria are not engaging the functionalities of the Web 2.0 and technologies in ways that are economically rewarding, just that they have not developed enough manpower and skills, as well as the infrastructure to utilize same. But the vistas of hope are there because Nigeria is enjoying a burgeoning online presence (Ashong & Ogaraku, 2017), and

businesses still utilize some of these technologies. Websites, search engines, social media, blogs, and dedicated apps are very common in Nigeria but their application and usage in business processes are still limited in certain areas. For instance, conduction of online surveillance to ascertain consumers' perceptions of products, services, brands and organizations is not yet pronounced. So far, no known company or professional research firm in the likes of Nielsen-BuzzMetrics and BuzzLogic involved in indexing blogs or harvesting online comments about brands, products and organizations currently exist in Nigeria.

Globally, the potentials of the new media are seamless and boundless in terms of interactions, interrelationships, and information sharing and exchanges. Although Internet penetration in Africa as a whole is still at a low 8.7% (85 million users), growth rates are phenomenal; between 2000 and 2009, Internet penetration grew by 1,810% (Margit, 2010). In Nigeria, in the same period, Internet penetration grew by almost 12,000% and stood at 16.1% by the end of 2009 with almost 24 million Nigerians surfing the Web (Margit, 2010). With 27% of all African Internet users reported to be Nigerians, Margit predicted the growth to continue, and in 2011, Asuni & Farris (2011, p. 4) reported that “out of approximately 150 million Nigerians, 87 million own mobile phones that can send and receive SMS messages and 44 million have Internet access.” Again, in 2013, Africa Practice (2014, p. 9) reported that “Internet penetration in Nigeria currently stands at about 30% with over 50 million Internet users.” Alile (2017) observed that one of the things Nigerians do when they wake up is check their Facebook, Twitter, YouTube, favourite blogs or other online communities they belong to. Going by this trend, the number will continue to increase. This represents a huge market for businesses that leverage Web 2.0 and associated technologies.

Telecommunications infrastructures across countries

enable businesses to network. This results in greater efficiency, improved quality of services, convenience, mutual profits, and competitive advantage. But because the Internet technology is at the centre of it, researchers have analyzed the potential impact of Internet diffusion on growth and productivity across countries (Varian *et al.*, 2002). The common conclusion is that they vary due to the different levels of technological development and telecommunications infrastructure available in each country.

However, as Roller & Waverman (2001) empirically found, the extent of telecommunications infrastructure is associated with economic growth. Without a sufficient telecommunications infrastructure, i.e., broad diffusion of high-speed Internet connections throughout the economy the resulting network externalities and net-enabled efficiencies are limited (Melville, 2004). Emerging empirical evidence of differences in IT business value across developed and developing countries may be a manifestation of differences in Internet diffusion (Dewan & Kraemer 2000; Tam 1998). Due to lack of empirical evidence on the exact level of Internet diffusion in Nigeria, this paper cannot say categorically how much these platforms contribute to her economic growth. But it is observed that online platforms; Websites, social media, blogs are proliferating among businesses in Nigeria and are found very rewarding in many ramifications.

### **Conclusion and Recommendations**

Web 2.0 and technologies have changed and will continue to change human communications and businesses. The existing media and sophisticated technologies and what they have the capacity to do today, show the quality of promises tomorrow holds for human communications and businesses. As the expected Internet of things continues to popularize, more technologies will emerge and will occasion more businesses, and this will continue to place the users - consumers and audiences - at the mercy of

economic players. Online activities have open users up in a manner that makes them vulnerable to certain economic manipulations. Reports have shown how information about users can be used to turn them into commodities and digital labour. Some of the implications of Web 2.0 and technologies have both virtual and physical shades.

However, ethical concerns demand that businesses run themselves in a manner that grants consumers a sense of security. But since the import of online does not seriously encourage or punish this, businesses are advised to continue to consider the convenience of the consumers, and cost effectiveness of running businesses without jeopardizing the sense of security of the consumers, or making them feel used because of how information about them are manipulated. Businesses have the responsibility of keeping the monetary and personal details which customers offer in the process of transactions safe, after all software developers have helped in this regard by developing systems like encryption in the transmission and storage of data, use of passwords and storage of data on secure servers or computers that are inaccessible by modem. Customers too should be aware of privacy risks and so be properly guided. They should stop trusting too much online and develop the culture of securing themselves through encryption, use of password etc. But if businesses must use user information, let it be to co-create values in a mutually-beneficial way. The onus, however, lies more on the part of business people to invent areas where such collaborations can work and engage consumers.

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