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ISSN: 2456-3676

# EFFECT OF DISRUPTIVE TECHNOLOGY ON COMPANY INCOME TAX OF THE SELECTED TELECOMMUNICATION NETWORK PROVIDERS IN NIGERIA

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#### Abstract

The world has witnessed revolution in real time such as the access to new services through which digital finance has brought to billions of individuals. disruptive technological innovations are technologies that result in significant changes in the cost of or access to products or services, or that dramatically alter the ways we gather information, make products, or interact with each other. This study examines the effects of disruptive technologies (Mobile Number Portability, Horizontal Integration, Over the Top-Lawyer, Customer Experience Management and Soft-SIM) on company income tax. Ex-post facto research design was used for the study using published secondary data of selected listed Telecommunication companies (MTN, Globacom, Airtel and 9mobile). Time series secondary data published by The FIRS and Ministry of Budget Planning were collected for both tax revenue and disruptive technology for the period of 2001 to 2019 and analyzed using regression analysis. It was discovered that Horizontal Integration has highest relative effect on the company income tax of the selected telecommunication network providers in Nigeria (R2 = 0.2, t = 6.03, p < 0.05), followed by Customer Experience Management (R2 =0.16, t = 4.74, p< 0.05), next is Over the Top-Lawyer (R2 = 0.15, t = 4.18, p< 0.05). Soft-SIM had a negative relative effect on the company income tax of the selected telecommunication network providers in Nigeria with (R2 = 0.26, t = 7.651, p< 0.05), while Mobile Number Portability does not have a statistically significant effect (R2 = 0.-0.05, t = -1.34, p > 0.05).

**Keywords:** Disruptive Technology, Company Income Tax, Mobile Number Portability, Horizontal Integration, Over the Top-Lawyer, Customer Experience Management and Soft-SIM.

### **1.0 Introduction**

Over the years, seeking sustainable revenue sources has grown to become a major public policy issue. The level of economic growth and development of any economy depends on the amount of the revenue generated and channelled towards the development of the country, one of the sure ways of generating revenue is through tax. A country's tax system is a major determinant of the macroeconomic indexes for developed and developing economies; hence, there exist a relationship between the tax structure and the level of economic growth (Libabatu, 2014).

The purpose of government among others is to provide basic amenities, protect the lives and property of the citizens and create the enabling environment for individual and corporate organization to strive. However, for the government to carry out this responsibility, it needs to

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mobilize revenue through taxation of the citizens and corporate organization. Thus the whole essence of tax is to generate revenue which could be used to advance the welfare of the citizen and to regulate the economy (fiscal policy). While taxation plays a significant role in income redistribution, protection of weak and infant industry, the revenue generated through it plays a crucial role in promoting economic growth and development. Tayo and Adesola (2016) opined income through taxes dominates among various sources of revenue available to the government, and the strength of any government is for its taxpaying entities to meet their tax obligations freely without much pressure or confrontation as informed by the health of their businesses.

Ogunsola (2015) opined that the emergence of disruptive technology is not alien to us. Being part of the global community, Nigerians have experienced some technological disruptions, which have both enhanced the lives of Nigerians as well as caused some frictions between the disrupting technology and the disrupted markets. The industries experiencing disruptions in Nigeria include Trade and e-commerce, transportation in the form of Remotely Piloted Aircraft System (RPAS) and Unmanned Aerial Vehicles (UAV) and the telecommunication industry. With fast growing supply and access to the internet and telecommunications companies have made significant in-roads in the various aspects of the internet including; social networking, online shopping, the sharing economy (such as Uber), advertising, and content creation and distribution. Suppliers of these services enter the market with unique offerings or business models which quickly shake up the industry and displace existing traditional services. Uber is an example of a service that has recently entered the transport industry and is quickly displacing traditional metered taxis. This has been made possible through on-going innovation, growth in internet penetration and the growth in the usage of smart phones (Kassicieh, Kirchhoff, Walsh & McWhorter, 2012).

The word 'disruptive" has been transformed into a beautiful bride whose qualities are being considered strong and positive enough to transform the GDP of the continent. Without doubt, there is an amount of effusive energy which is at work here to the point of intrusion. This is the danger. And this is where Disruptive is coming from". Telecommunication technology awareness in Nigeria has grown rapidly over the years though awareness in rural communities is still at snail speed. From the above identified issues, potential telecom investors find it difficult and discouraging to penetrate the Nigerian telecom market. The gap between the information-rich developed countries and Africa, with respect to information availability, continues to increase every day, and Nigeria is not an exception to this negative statistic. Though Africa has 13% of the world population, the continent has only 2% of world telephone lines and 1% of Internet connectivity measured in terms of number of Internet hosts and Internet users (Ogunsola, 2015).

Lagos State accounted for the largest share of active voice subscribers with 19.04 million or 12.8% of the total, followed by Ogun State with 8.53 million subscribers or 5.7%, Kano State with 7.81 million or 5.25%, Oyo State with 7.53 million subscribers or 5.06% of the total, then FCT and Rivers State with 6.03 million (4.05%) and 5.84 million (3.93%) respectively. On the

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other hand, Bayelsa (1.11 million), Yobe (1.40 million), Ekiti (1.42 million) and Ebonyi (1.43 million) had the smallest number of active subscribers as of quarter 1 2016. Lagos State was the dominant market for all of the active voice telecom companies accounting for 10.05% of MTN total voice subscribers (followed by Ogun, Kaduna and Rivers in that order), 10.03% for Glo (followed by Oyo, Niger, Ogun and FCT in that order), 16.0% for Airtel (followed by Ogun, Kaduna and Rivers in that order) (National Bureau of Statistics, 2017). However, efforts have been concentrated in the urban communities, thus leaving the rural ones to grapple with low access to telecommunication services.

Overtime, nations, most especially low income countries, have strongly depended ion revenue sources like borrowing, foreign aid, sales of government properties, remittances, and other non-tax revenue sources (AFDB, 2007; Bird, 2011; Neubig & Wunsch-Vincent, 2018). However, none of these sources is without it accompany in governing whelming economic pressure either directly or indirectly (Torgler, i2007). All these summed, have left this region particularly Nigeria with the dire need to increase tax revenue as one of the most reliable and sustainable alternative revenue sources. To this end, improved voluntary compliance via efficient and less convoluted tax system is inevitable to facilitate the timely attainment of their development goals (United Nation i2018). This must therefore be done by devising means of expanding the tax net while avoiding tax base attrition capitalizing ion drivers of tax compliance like simplicity of tax.

Much has been written about strategic innovators companies that develop radical new strategies to attack entrenched competitors and create new markets in the process (Govindarajan& Trimble, 2006, Hamel, 2013, Kim & Mauborgne, 1997, Markides 1997, (Aghmiuni, Siyal, Wang, & Duan, 2020; Blanchard, 2020; Cheng, Chien, & Lee, 2020; Ferraz & de Melo Santos, 2016; Grant, Jha, Wanjiru, & Bhalla, 2020; Guan, Mou, & Jiang, 2020; Neubig & Wunsch-Vincent, 2018; Ode & Ayavoo, 2020; Padda & Akram, 2009; Taques, López, Basso, & Areal, 2020; Yu & Schweisfurth, 2020). But much of the research on disruptive technology has been focused on developed rather than developing markets, despite a recent surge of research interest in the fast-growth economies of the developing world and as such there is need to fill this gap in the body of knowledge by investigating disruptive technology and income tax in a developing country as Nigeria to find answer to the following question: how does disruptive technology affect income tax?

### 2.0 Literature Reviewed

## 2.1 Conceptual Review

## Innovation

OECD/Eurostat (2005) defines innovation as the implementation of a new or significantly improved product (good or service), or process of a new marketing methods, or a new organizational method in business practices, workplace, organization or external relations. However, for the purpose of this work the author have decided to adopt the definition of Mc

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Cormick and Maalu, (2011). When the purpose of something is not known, abuses of it definitely remain inevitable. Therefore, in the context of SMEs, innovation comprise product or process, continuous or discontinuous, radical or incremental innovations leading to improved or new products. The most common form of innovation for small firms is non-technological innovation which includes market and Organisational innovation.

Over the years, studies have examined the relationship that exist between strategic factor and firm performance (Guimaraes and Langley, 1994; Lin and Chen, 2007; Trienekens, 2008; Bakar and Ahmad, 2010; Peng,(2011). Studies also focus on part of the dimensions of innovation such as product innovation (Alegre *et al.*, 2006; Espallard and Ballester, 2009; Zhang and Duan, 2010; Bakar and Ahmad, 2010; product and process innovation Georgellis, 2000; Ar and Baki, 2011; Prajogo, 2007; Medina and Rufin, 2009) and market innovation (Johne, 1999). The evaluation on innovation will be incomplete without the extent to which various dimensions of innovation influence the performance of SMEs.

There are extensive definitions of innovation in the literature yet there is no global consensus on the universal acceptable term. Firms' success, survival and sustainable competitive advantage largely depend on innovation. Vyas (2009) discover 5 manifestations in the proposed early definition of innovation by Joseph Schumpeter a German economist and political scientist. Application of new solution to meet new requirement, the manifestations include:

- i. Creation of new products or qualitative improvements in existing products
- ii. Use of a new industrial process
- iii. New market openings
- iv. Development of new raw-material sources or other new inputs

New forms of industrial organizations

## **Organizational Innovation**

Organizational innovation is defined as introduction of new practices of doing business, workplace organizing methods, decision making system and new ways of managing external relations(Polder et al., 2010). In organizational business practices, firm organization or external relations are implemented, studies reveal that employees find it hard to strike work life balance and as such reducing productivity. Organizational innovations varies from one industry to another; new method of organizing daily routines and procedures for the delivery of day to day activities are put in place such as education and training systems to empower the staff and the organization. They change the ways of organizing things to compete with their competitors and satisfy the customers (Ettlie & Reza 1992). It is evident from these concepts that innovation should increase the performance of an industry. Little things count in a competitive market especially when it is pointed at achieving a particular goal.

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#### Forms of innovation

#### a. Product innovation

In the competitive environment firms bring product innovation to compete in the market. The product innovation face the low competition at the time of introduction and that is why it earns high profit (Roberts, 1999). Ettlie & Reza, (1992) stated that firms bring product innovation to compete with other firms in the markets. Firms bring product innovation to satisfy their customers. Product innovation is reflected by the functional performance (Olson et al. 1995). Product innovation is one of the key factors that contribute to success of an organization. There are dimensions to which product innovation involved in increasing the performance of firm; it can be through the use of new materials to complement the existing one, improvement in how the goods or services are delivered in terms of their efficiency or speed or introduction of entire new product. Although, design is a crucial component of the development and implementation of product innovations but when such design does not meet the peculiar attribute of functional characteristics or intended uses of the product innovation, then it is not product innovation.

#### **b.** Process Innovation

One of the basic economic questions is how to produce. The term process involves how such innovation will be realized. This is the significant changes in techniques, equipment and/or software in the world of competitiveness (Polder et al. 2010). Firms bring process innovation to produce innovative products and amendments are also brought in their processes to produce the new products (Adner&Levinthal, 2001). To decrease the production cost, firms go for bringing process innovation. In an economy where consumer is seen as the king, to increase quality of product produced and minimizing cost used in producing it is the center hub of such market. The process of transformation of such input to output will require new method and new approach so as to have increasing quality of the product or minimizing cost outlay involved.

### c. Marketing Innovation

There is product placement approach as well, this approach involve the method of selling or new channels of sales, examples of this is the introduction of first time franchising system, direct selling or exclusive retailing and of product licensing. Others studies reveal the classification such as; new concept for the presentation of product (sales room for furniture) in a fully decorated rooms, product promotion, the use of new concept to promote goods and services (celebrity endorsement), introduction of branding especially symbols which is to give the product a new image and the use of pricing system.

### d. The concept of disruptive technology

Any technology that dislodges an established technology by creating a completely new industry is disruptive (REF). Disruptive technology creates new market and reshapes existing ones thereby giving customers and end users the greatest level of access, empowerment, convenience, choice and value. The focal point of disruptive technology is to challenge established business models and radically transform products and services (Polder et al. 2010). The concept was further espoused by Clayton Christensen in his book *The Innovator's Dilemma: When New* 

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*Technologies Cause Great Firms to Fail,* published in 1997. The book demonstrates how successful, outstanding companies can do everything "right" and still lose their market leadership or even fail, as new, often unexpected competitors rise and take over the market.

### **Firm Performance**

Performance can be seen in both contextual and operational way. Performance is synonymous with growth, survival, success and competitiveness (Dobbs and Hamilton, 2006; Wolff and Pett 2006). Since early 1930s, law of proportionate effect has been introduced to substitute for firm growth (seen as Gibrat's rule of proportionate growth). To determine business growth, law of proportionate effect is actually used by most authors as a benchmark. Although, such growth does not depend on the size of a firm. firm adopted different measures to capture performance. Grant et al (1988), reveal that most firms uses financial indicators to capture performance. Others who uses; return on assets, average annual occupancy rate, net profit after tax and return on investment (ROI), profitability, productivity, growth, stakeholder satisfaction, market share and competitive position to capture performance include Zahra, (2008), Tavitiyaman et al, (2012), Garrigos-Simon and Marques, (2004), Marques et al, (2005). However, the measurement of firm performance can both be financial and non-financial elements to account for both external and internal environments.

### 2.2 Theoretical Review

### a. Disruptive Innovation Theory

Disruptive innovation is a powerful means of broadening and developing new markets and providing new functionality, which, in turn, may disrupt existing market linkages (Adner 2019; Charitou and Markides 2019; Christensen 2017; Christensen and Bower2016; Christensen and Raynor 2017; Danneels 2018; Gillbert 2015; Govindarajan and Kopalle 2016). Latzer, views disruptive technological improvement as an innovative destruction that modify and overhauls the entire structure of a technology. This implies that innovativeness is important at every stage of business life cycle. Also, concept of innovation in business has existed over the years, since the nineteen- Century.

## **b.** Fiscal Exchange Theory

The proposition of this theory is that government can motivate tax compliance behavior amongst taxpayers through its expenditure on public goods and services. This means that if government can satisfy the populace with the public goods and services they provide then the taxpayers will be more compliant. Behavioral science evidence implies that increased individual participation in the allocation and decision process will foster an increased level of compliance (Alm, Jackson, Mckee, 2012). Therefore, a taxpayer may be seen as exchanging full tax compliance for government services. Positive benefits accruing to the government may increase the likelihood of total cooperation of taxpayers without direct coercion or forceful approach. According to (Cowell and Gordon, 1988) individuals receive something from government for their tax payments, and this receipt of government services has been shown in previous to influence the compliance decision and behaviour. Citizens pay taxes because they value what they get for their

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taxes, and they pay more in taxes the more the government is responsive in providing what they value.

Richupan (1987) stated that even though most taxpayers cannot assess the exact value of their exchange for taxes they pay, it can be argued that they have general impressions and mindsets concerning their own terms of trade with the government. We can therefore expect tax payers to respond to their tax obligations based on their satisfaction with the goods and services provided by the government. Therefore, within the framework of this theory, the expectation is that the probability of an individual's tax compliant attitude is positively correlated to his satisfaction with the provision of public goods and services.

### 2.3 Empirical Review

Leipziger and Dodev (2016) examined the relationship between innovation and tax revenue for companies listed on the New York Securities Exchange (NSE) in USA for the six years period between 2009 and 2015. Using panel data analysis the study found evidence that there is a positive and significant relationship between innovation and revenue for the firms listed on the NSE. The study established that innovation has explanatory power on revenue.

Ogundele (1999) conceptualize taxation to be the process or machinery by which communities or groups of persons are made to contribute some agreed amount of money for the purpose of administration and development of the society. Kaldone (1963) opines that a country yearning for development is required to collect tax revenue of an amount greater than 10%-15%. However, a country's revenue generation primarily depends on its capacity to tax more in both economic and administrative terms. It is also a fact that tax payers which collectively produced results within a short time frame required incentive to be more productive.

Sayode and Kajola (2006) explained tax evasion as a deliberate and willful practice of not disclosing full taxable income in order to pay less tax. It is a violation of tax laws whereby the tax due by a taxable person is unpaid after the minimum specified period. Tax evasion is evident in situation where tax liability is fraudulently reduced or false claims filled on tax revenue form. Contrastingly, Kay (1980) views tax avoidance as a process where facts of the transaction are admitted but have been arranged or presented in such a way that the resulting tax treatment differs from that intended by the relevant legislation. In essence, tax evasion is illegal while tax avoidance is not illegal under the ambiance of the law (Sayode and Kajola, 2006; Kay, 1980; Sandmo, 2004; Nwachukwu, 2006; Alm and Martinez-Vazquez, 2001; Ebioegbe, 2011).

Gupta (2007) investigated determinants of tax revenue effort in a set of developing countries over the period of 25 years. He concluded that several structural factors like per capita GDP, share of agriculture in GDP and trade openness are statistically significant and strong determinants of revenue performance. The result indicated that although foreign aid improved revenue performance significantly, debt did not. Among the institutional factors, corruption had significantly negative effect on revenue performance. Political and economic stability also affected revenue performance but only across certain specifications. However, in this golden age of technological advancement, assessment of tax revenue performance will be inaccurate,

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incomplete and unreliable without assessing the contribution of innovation through technology in harnessing tax revenue. The role of technological advancement includes; first, harnessing the contributions of tax revenue in funding public project. Secondly, enhance and bridge the gap of factors that will improve tax revenue generation and lastly, makes the tax system technological incline.

Ade, Rossouw and Giwatidzo (2018) investigate the dynamic relationship among FDI flows, tax rate and tax revenue for panel SAD countries over the period 1990 to 2010 using two estimation techniques, their findings shows that there is robust role of taxation in improving tax revenue in the region. The findings are in line with the study of Sudsawasd and Mongsawad (2011). In addition, the results also confirm the important role of FDI inflow on tax revenue generation. This study indicates the need for economic integration and globalization since no country can survive on its own without getting connected with other countries of the world. Advancement of technology has made it easy and friendly through various form of innovation in the technological world. Technology is hub that linked up with many advantages for different economic unit, trade liberation, FDI inflows, economic and region integration are all product of technological advancement. Studies across different countries in a different period have examined the determinants of tax revenue generation.

Garikai (2009) extend the study on determinant of tax buoyancy by looking at other indicators in a panel data of SADC over 12 years' period. He revealed that monetization, external aid growth and the growth of fiscal deficit have negative effect annually on tax buoyancy and tax performance while fiscal deficit increase raise tax revenues. Growth of sectors contributed positively to tax buoyancy especially from agriculture, industrial (mining and manufacturing) and public sectors while factors like trade openness and economic development are found to insignificantly relate to tax buoyancy.

## Disruptive Technology on Company Income Tax

Thomond and Lettice (2017) carried the empirical evidence on the magnitude of the relationships between disruptive technology as it affect the payments of company income taxes. Their study used a time series and cross sectional data from 2009-2016 obtained from selected service firms. Secondary data for the study were obtained from the published financial statements of six out of eight of them one among them operating as at December 2009 which were selected by purposive sampling technique. They examined the impact of disruption on the remittance duties to the government. Panel data model was used to estimate the relationship that exists among the variables. The findings showed that sound innovations in the disruption have a negative impact on the remittance of duties.

Abayadeera (2010) examined the impact of technology on the payment of stamp duties in hightech industries in Australia with a sample size of 91 companies running through various sectors of the Australian economy. Findings from the study indicated that disruptive innovation has a positive impact on the **payment** of stamp duties.

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## **Conceptual Model**



Source: Researcher's Conceptual Model, (2021)

## 3.0 Methodology

The study covers the period between 2001-2019. The period lies within when Nigeria experienced the introduction of GSM technology in the telecom sector. Since overhauling of the sector, the telecoms sector has experienced a significant shift in both technological and performance landscape. The network providers selected for the study are the first four in the industry vis a vis; MTN, Globacom, Airtel and 9Mobile. In determining the interaction between Disruptive Technology and Tax Revenue in Nigeria, the study made use of macro data gotten from the FIRS and Ministry of Budget Planning. The choice of the use of is that, its enables researchers sift through large volumes of data, as a means of eliciting data from the secondary sources.

## **Model Specification**

One of the advantages of panel data is its ability to capture dynamics of changes or adjustment in data. In this study, dynamic panel model shall be employed to model the relationship existing among the variables of interest. Specifically,

- Y = Dependent Variable: Company Income Tax (CIT)
- X = Independent Variable: Disruptive Technology

The model formulated for the study is:  $Y = f(X_{DT})$  $X_{DT} = (x_1, x_2, x_3, x_4, x_5).$ 

Therefore,

$$\begin{split} Y &= f(x_1, x_2, x_3, x_4, x_5). \\ y &= f(x_1 M N P_{it} + x_2 H I_{it} + x_3 O T T L_{it} + x_4 C E M_{it} + x_5 S - S I M_{it}) \\ x_1 &= Mobile \ Number \ Portability \ (MNP) \end{split}$$

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x<sub>2</sub>= Horizontal Integration (HI)
x<sub>3</sub>= Over the Top-Lawyer (OTTL)
x<sub>4</sub>= Customer Experience Management(CEM)
x<sub>5</sub>= Soft-SIM(S-SIM)

CIT = Company Income Tax, DT'<sub>it</sub> is a vector of variables measuring disruptive technology such as; Mobile Number Portability, Horizontal Integration, Customer Experience Management and Soft-SIM.

 $\begin{aligned} y_2 &= f(_{X1}MNP_{it}+_{X2}HI_{it}+_{X3}OTTL_{it}+_{X4}CEM_{it}+_{X5}S\text{-}SIM_{it}) \\ CIT &= \beta_0 + \beta_1MNP_{it} + \beta_2HI_{it} + \beta_3OTTL_{it} + \beta_4CEM_{it} + \beta_5S\text{-}SIM_{it} + \epsilon_i\text{------Eqn }1 \end{aligned}$ 

### Data Analysis

Before the data were subjected to inferential analysis, normality test, a diagnostic test was conducted to ensure that the data do not violate important assumptions of regression analysis. The secondary data in appendix 1 are normal if they follow a normal distribution. The normality of data distribution was assessed by examining its skewness and kurtosis. A variable with an absolute Skewness value greater than 3.0 is extremely skewed while a kurtosis index greater than 8.0 is an extreme kurtosis.

The results of the normality test of the CIT in appendix 2 indicated that the skewness and kurtosis fall with the acceptable range as shown. The highest value for skewness is -0.559 (9mobile) while the highest for Kurtosis is 1.264 (AIRTEL). This implies that the data used for the study are normal and satisfy the assumption of normality. They are therefore suitable for regression analysis.

## Hypotheses Testing

Disruptive technology does not have significant effect on company income tax of the selected telecommunication network providers in Nigeria.

X = Disruptive technology

x<sub>1</sub>= Mobile Number Portability (MNP)

 $x_2$ = Horizontal Integration (HI)

 $x_3$ = Over the Top-Lawyer (OTTL)

x<sub>4</sub>= Customer Experience Management(CEM)

x<sub>5</sub>= Soft-SIM(S-SIM)

Y = Company Income Tax

 $CIT = \beta_0 + \beta_1 MNP_{it} + \beta_2 HI_{it} + \beta_3 OTTL_{it} + \beta_4 CEM_{it} + \beta_5 S-SIM_{it} + \epsilon_i$ 

Multiple regression analysis is used to examine the effects of disruptive technology dimensions on company income tax of the selected telecommunication network providers in Nigeria. Table 1 presents the model fit which establishes how the model equation fits the data and Adjusted Rsquare (Adj.  $R^2$ ) used to establish the predictive power of the study's model. The table further presents the coefficients of the identified disruptive technology dimensions with respect to company income tax of the selected telecommunication network providers in Nigeria.

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Nigeria.								
Model	Beta	t	Sig.	R	R <sup>2</sup>	Adj. R <sup>2</sup>	ANOVA Sig.	F(df)
(Constant) Telecoms industry	1.20	12.69	0.00	0.599	0.359	0.356	0.000	97.434(5,77)
Mobile Number Portability (MNP)	- 0.05	-1.34	0.18					
Horizontal Integration (HI)	0.20	6.03	0.00					
Over the Top-Lawyer (OTTL)	0.15	4.18	0.00					
Customer Experience Management(CEM)	0.16	4.74	0.00					
Soft-SIM(S-SIM)	- 0.25	9.04	0.00					

Table 1: Summary of multiple regression analysis for the effect of disruptive technology dimensions on company income tax of the selected telecommunication network providers in

Source: Computed by the Researcher (2021)

Table 1 presents the results of multiple regression analysis for the effect of disruptive technology dimensions on company income tax of the selected telecommunication network providers in Nigeria. Given a multiple regression analysis, the Adjusted  $R^2$  was used to establish the predictive power of the study's model. When all the companies were combined as a whole, the result shows disruptive technology dimensions have positive and moderately average relationship with the combined company income tax of the selected telecommunication network providers in Nigeria (R = 0.599, p= 0.000). The adjusted coefficient of determination (Adj R<sup>2</sup>) of 0.356 showed that disruptive technology dimensions explained 35.6% of the variation in the company income tax of the selected telecommunication network providers in Nigeria while the remaining 64.4% variation in company income tax is explained by other exogenous variable different from those considered in this study.

Furthermore, Table 4.26 presents the results of ANOVA (overall model significance) of regression test which revealed that the disruptive technology dimensions have a significant effect on the company income tax of the selected telecommunication network providers in Nigeria. This can be explained by the F-value (97.434) and p-value (0.000) which is statistically significant at 95% confidence interval.

The results of regression coefficients for disruptive technology dimensions in relation to company income tax revealed that at 95% confidence level, Horizontal Integration ( $\beta = 0.2$ , p= 0.000), Over the Top-Lawyer ( $\beta = 0.15$ , p= 0.000), Customer Experience Management( $\beta = 0.16$ , p= 0.000), and Soft-SIM( $\beta = -0.25$ , p= 0.000), were statistically significant as the p-values were less than 0.05 and the t-values greater than 1.96.

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Given that Mobile Number Portability was statistically insignificant in relation to company income tax, it was removed from the model. Based on the coefficients of regression in table 4.26, the regression model is restated as follows:

CIT = 1.2 + 0.20 HI + 0.15 OTTL + 0.16 CEM - 0.25 S-SIM

According to the regression equation above, taking all factors constant at zero, company income tax of the selected telecommunication network providers in Nigeria is 1.2. The result also indicates that taking all other independent variables at zero, a unit change in Horizontal Integration will lead to a 0.2 increase in the company income tax of the selected telecommunication network providers in Nigeria. Similarly, the results also revealed that a unit change in Over the Top-Lawyer will lead to a 0.15 increase in the company income tax of the selected telecommunication network providers in Nigeria given that all other factors are held constant. In addition, the results also revealed that a unit change in Customer Experience Management will lead to a 0.16 increase in the company income tax of the selected telecommunication network providers in Nigeria given that all other factors are held constant. Lastly, company income tax of the selected telecommunication network providers in Nigeria given that all other factors are held constant.

Overall from the results, Horizontal Integration has highest relative effect on the company income tax of the selected telecommunication network providers in Nigeria with a coefficient of 0.2, and t value of 6.03. Customer Experience Management was next in line, with a coefficient of 0.16 and a t value of 4.74 while Over the Top-Lawyer had the least positive relative effect with a coefficient of 0.15 and a t value of 4.18. on the other hand, Soft-SIM had a negative relative effect on the company income tax of the selected telecommunication network providers in Nigeria with a coefficient of 0.25 and t value of 9.04. Given these results, this study can conclude that disruptive technology have significant effect on company income tax of the selected telecommunication network providers in Nigeria. On the strength of this result (Adj R<sup>2</sup>= 0.356, F(5,77) = 97.434, p= 0.000), this study rejects that disruptive technology does not have significant effect on company income tax of the selected telecommunication network providers in Nigeria.

### **Conclusion and recommendations**

We have all witnessed revolution in real time such as the access to new services through which digital finance has brought to billions of individuals. Disruptive technological innovations are technologies that result in significant changes in the cost of or access to products or services, or that dramatically alter the ways we gather information, make products, or interact with each other.

Network outages disrupt socio-economic activities as dependent services such as banking, airline ticketing, government e-payments and a host of other activities become unavailable or constrained. Businesses both traditional and in particular, online that rely on telecommunications

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infrastructure and services are pulled down whilst the outages last. The disruption of social and economic activities in this manner will accrue huge economic losses for telecommunication operators and other businesses, the Government and the nation as a whole.

Nigeria is outstandingly positioned to gain the benefits of the digital economy. The country accounts for 47% of West Africa's population, with half of its 200 million people are under the age of 30. There is good progress in digital infrastructure, finance, skills, and entrepreneurship, among others in Nigeria. To deliver on the 2030 targets of greater access to the digital economy, the country needs to increase investment in infrastructure, create an enabling regulatory environment, pursue radical reforms that bring about improved skills and a more competitive digital job market, support public-private partnerships to stimulate and sustain demand for the use of digital platforms, and improve the current business climate to boost more investment opportunities.

The series of disruptions of SIM since early 90s, resulted to reformations in sizes of SIM card. Also, the next generation of SIM is anticipated to come in software form. This gives a positive impression and appears like innovatory step towards better SIM formula, however the study finds that the idea of soft-SIM has not been widely accepted by mobile operators. The findings show that though soft-SIM appears to be a landmark innovation in the telecommunication sector, however, some mobile operators repudiate the idea of soft-SIM due to some expected threats such as: Fear of losing customer's loyalty and Churn, a situation of frequent migration from operator to another. Soft-SIM adoption in the telecommunication industry is dependent on the unanimous approval by the Mobile Network Operators and widespread acceptance in the customer's mainstream market. However, despite these aforementioned hitches, some scholars insinuate possibility of adoption of soft-SIM in the telecommunication industry in future.

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Appendices
Appendix 1: Company income tax of the selected telecommunication network providers
in Nigeria.

				9 MOBILE	Log MTN	Log	Log AIRTEL	Log 9
YOA	MTN ( <del>N</del> )	GLO ( <del>N</del> )	AIRTEL (N)	( <u>N</u> )	( <u>N</u> )	GLO (N)	( <u>N</u> )	MOBILE
2019	79025994610	1078010704	7157194612	161602341.4	10.89777	9.032623	9.854743	8.208448
2018	25135420971	848035196.5	5067468270	132614825.3	10.40029	8.928414	9.704791	8.122592
2017	43099730026	614099678.9	0	311625949.6	10.63447	8.788239	#NUM!	8.493634
2016	70758090560	717678966.9	478212153.9	144054106.4	10.84978	8.85593	8.679621	8.158526
2015	73188136547	34779162.25	24486114092	64615043.91	10.86444	7.541319	10.38892	7.810334
2014	69676138362	1083026736	3822933753	55386557.78	10.84308	9.034639	9.582397	7.743404
2013	70488652231	2082585019	4710736212	91718491.94	10.84812	9.318603	9.673089	7.962457
2012	99635846332	2424272839	2738910594	8971094.59	10.99842	9.384581	9.437578	6.952845
2011	67473980413	726889644	937519657.9	12477970.98	10.82914	8.861468	8.97198	7.096144
2010	44334877631	93372625.16	2133562034	13228169.9	10.64675	7.97022	9.329105	7.1215
2009	26354825273	383367020.5	3248537492	191702987	10.42086	8.583615	9.511688	8.282629
2008	26632758711	7178682.24	5304053291	41462324.88	10.42542	6.856045	9.724608	7.617654
2007	12319754684	21330120.48	2709214565	0	10.0906	7.328993	9.432843	#NUM!
2006	4225092	1848883347	35867868	0	6.625836	9.26691	7.554706	#NUM!
2005	7829125.03	0	583816	0	6.893713	#NUM!	5.766276	#NUM!
2004	97398484.53	0	0	0	7.988552	#NUM!	#NUM!	#NUM!
2003	0	1409304278	10602071	0	#NUM!	9.149005	7.025391	#NUM!
2002	0	0	15309054.48	0	#NUM!	#NUM!	7.184948	#NUM!
2001	0	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!

Appendix 2: Descriptive Statistics

	Ν	Minimum	Maximum	Mean	Std.	Skewness		Kurtosis	
					Deviation				
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std.	Statistic	Std.
							Error		Error
MTN	19	.00	11.00	8.4346	3.98091	-1.632	.524	1.232	1.014
GLO	19	.00	9.38	6.7842	3.66593	-1.412	.524	.194	1.014
AIRTEL	19	.00	10.39	7.4644	3.52183	-1.614	.524	1.264	1.014
9MOBILE	19	.00	8.49	4.9247	3.88484	559	.524	-1.846	1.014
Valid N	10								
(listwise)	19								

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