**Entrepreneurial Culture as a deterrent to Corruption on ICT firms’ Performance**

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Abstract

Information and Communication Technology (ICT) Firms’ are subset of Knowledge-Intensive Businesses as they are driven by technologies, based on knowledge and information production, distribution and usage. However, the challenge of corruption is prominent in every facet of the economy hence most ICT firms are adopting the entrepreneurial culture to combat this menace. Therefore, this paper investigates the impact of entrepreneurial culture as a deterrent to corruption on ICT firms’ performance in Minna metropolis. The study addressed three research questions, focusing on the culture of innovation, experimentation and accountability, and ICT firms’ performance. The study employed descriptive survey research design by using a structured questionnaire on a five-point Likert scale based on previous studies. The validity and reliability of the instrument were carried out and a purposive sampling method was used to obtain the sample size of 150 respondents. The data was analyzed using descriptive and inferential statistics. The study found that innovativeness, experimentation and accountability are positively and statistically significant at 5% level on ICT firms’ performance in Minna Metropolis. It therefore recommends that ICT firms should adopt the entrepreneurial culture as the organizational culture holistically. Also, firms should include cost of innovativeness, experimentation and accountability in the strategic budget.

*Keywords:* Accountability, Corruption, entrepreneurial culture, ICT, innovation, Knowledge-Intensive Businesses, performance.

**Introduction**

Information Communication Technology (ICT) or Information Technology (IT) in a business context is "the study, design, development, application, implementation, support or management of computer-based information systems" (IT Association of America, n.d.). It is “the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise” (Yekinni, 2014p.10). ICT firms are subset of Knowledge Intensive Businesses (KIBs) that specialize on knowledge management. They produce, distribute, use and transform knowledge through different knowledge-based methods to present themselves as ‘drivers of knowledge dynamics in multilevel contexts’ (Strambach, 2008). They differ from general service firms because of the knowledge intensity, project-based business structure, and interactive process of consultancy and dedicated R&D involved (Muller & Dolleurox, 2009). They are learning organizations hence this study is posited on the learning theory of Barney (1986). ICT firms are entrepreneurial service firms who are supposed to adopt entrepreneurial culture as the organisational culture. Entrepreneurial culture emphasized on innovation, experimentation, accountability, tolerance of failure, employees’ rewards, informality and other elements as core of their vision and mission. However, despite the achievement accomplished by ICT firms, the situation remains unpalatable as corruption continues to pervade every facet of our society and national life (Fatile, 2013). The political, socio-cultural and economic factors are responsible for the endemic nature of corruption in Nigeria (Igioebor, 2019). Nigeria was ranked 140th, 148th and 144th out of 176 countries in the Corruption Perception Index in 2016, 2017 and 2018 respectively but in 2019 ranked 146 among 180 countries. Nigeria scored 27% and 26% in perception index as reported by transparency international in 2018 and 2019. The high rate of moral decadence seems to be a challenge inherent in business and human lives as Nigeria is currently facing serious corruption dilemma. Corrupt practices have its negative cross-country effect top to bottom from the public to the private sectors (Oyefuga, Siyanbola, Afolabi & Dada 2008; Aidt, 2009), Igioebor, 2019) and it is anti-ethical to the national development as well as a bane to performance of ICT firms. Numerous empirical research (such as Oyefuga et al, 2008, Okpara, 2010; Umejei, 2011; Adeyeye & Bamidele; 2017, Liu, 2016; Igioebor, 2019 & Hoinaru, Buda, Borlea, Văidean , & Achim, 2020) have explored the studies on SMEs and corruption in public and private places but existing gaps in knowledge is whether entrepreneurial culture has effect ICT firms’ performance. Thus, this study explores the effect of entrepreneurial culture as a deterrent for corruption on ICT firms’ performance in Minna metropolis. ICT firms are learning organizations, hence the study will be based on the learning theory of Barney (1986). It is expected that the study will contribute significantly to literature on entrepreneurship in developing economies by establishing a means of combatting corruption in ICT firms. In order to achieve this aim, the following research questions were raised to be answered:

*1. Is there a relationship between innovativeness and corruption deterrence on ICT firms’ performance in Minna metropolis.*

*2. To what extent is experimentation culture serve as corruption deterrence on ICT firms’ performance in Minna metropolis.*

*3. What is the relationship between accountability and corruption deterrence on ICT firms’ performance in Minna metropolis.*

The remaining part of the paper is organized as follows: in sections 2 and 3, the review of relevant literature and the research methodology respectively. Section 4 presents the findings and discussion of the results and finally the conclusion and recommendations.

**2.0 Literature Review**

**Information and Communication Technology (ICT) firms**

Entrepreneurship’s responsiveness to wealth creation is focused on identifying new and emerging opportunities in the marketplace (Shane and Venkataraman, 2000). Thus, Knowledge -Intensive Businesses (KIBs) emanated as a powerful sector with rising significance in exploiting opportunities since the 1980s (Adeyeye & Adepoju, 2015) especially in contributing to the Gross Domestic Product of the nations and solutions to unemployment in the knowledge-based economy. KIBsare categorized into P-KIBS (traditional professional services e.g. Accountancy, management, law etc.) and T-KIBS (technological-based services) relating to engineering, R&D and consultancy which are directly linked to Information and Communication Technology or technical activities and C-KIBS that is, computer and software related services ([Martinez-Fernandez and Miles, 2006](#_ENREF_393); Figueirido and Ferreria, 2019) . This study’s attention is not the P-KIBs but on the C-KIBs and T-KIBs, overtly referred to as Information and Communication Technology (ICT) sector as it relates to technological innovation and digitalization. Yekini and Lawal (2012) described ICT as a powerful collection of elements which include computer hardware, software, telecommunication networks, workstations, robotics and smart chips, which is also at the root of information systems. They are technologies that offer access to information through telecommunication (Ratheeswari, 2018).

ICT firms are entrepreneurial firms due to their modus operandi that diverges from normal or traditional ventures (Figueirido & Ferreria,2019). The sector still remains the recognised main and leading market for ICT services in Africa and not affected by environmental factors (Adeyeye & Bamidele, 2017). They are learning organizations tagged with a lot of creativity and innovativeness and technology transfer in order to meet up with the diverse contemporary challenges. However, ICT firms operate in the same environment where corruption is prevalent. Some firms experience corrupt practices and diverse forms of fraudulence and crimes that business performance and expansion into other geographical areas are impaired. Since culture and politics are closely linked with corruption (Pedro, 2019), the adoption of entrepreneurial culture by many ICT firms has been a bail out of some of the predicaments of the systemic corruption in this part of the world. Thus, for optimal performance in our context, it becomes imperative to examine if the adoption of entrepreneurial culture particularly innovativeness, experimentation and accountability have any significant effect in deterring or eliminating corruption in ICT firms to enhance performance.

**Learning theory**

This study is posited on the Learning theory of Barney (1986) which emphasizes the way a ﬁrm builds its knowledge-base over time and positions its stock of knowledge for survival and growth, including creating wealth through innovation (Ketchen, Ireland & Snow, 2007). This scholarly insertion has been pursued under different tags, including organizational learning, the knowledge-based-view, and knowledge management (Barney, 1986). Learning organizations such as KIBs are entrepreneurial organizations that facilitate creativity and innovativeness, encourage R&D, systematic problem-solving, introduce new processes, learn from past experiences, experimentation, tolerate failures, execute best practices as well as transfer of knowledge (Bahareh, Mir, & Mahmoud, 2011) which are key attributes of entrepreneurial culture. Thus, KIBs (including ICT firms) are learning organizations and adaptive firms in pursuit of maximum performance but bedeviled by corruption need to consider entrepreneurial culture that could serve as deterrent to this menace. Igioebor (2019) however, argued that corruption is strongly linked to increase difficulty in business performance hence entrepreneurial culture has been perceived as a means to deter corruption in ICT firms.

***Entrepreneurial Culture***

Organizational culture simply depicts what the business stands for and its disposition. Entrepreneurship is a culture that firms that desire relevance and willingness to survive must adopt (Mitra, 2012). Entrepreneurial culture is one of the great forces that emanated from an entrepreneurial climate to boost entrepreneurial behaviour and activities for enhanced optimal performance in organisations. Entrepreneurial culture is principally the deviation from conventional management principles for optimal performance to gain a competitive advantage (Mitra, 2012). It is more Non-entrepreneurial firms have no option than either to become entrepreneurial or die (Kuratko and David, 2009; Morris, Kuratko & Covin, 2012). Imbibing entrepreneurial culture by ICT firms is characterized by high-level risk-taking, continuous introduction of new and unique products/services; commitment to experimentation, constant accountability despite informality, innovation on the leading edge, tolerance of failure, team work and individual initiatives, flexibility and freedom. The aftermath of these features in an organisation can go a long way in curbing corrupt practices in ICT firms. Consequently, a strong, positive and consistent culture is imbibed by both management and employees as a way of life that can affect the external environment where they transact. This culture creates change rather than reacting to changes in the environment (Morris et al.,2012) thus it can create change in the country. This study therefore considers the specific entrepreneurial culture and its subsequent effect on ICT firms’ performance.

**Innovativeness**

The heart of entrepreneurship is innovation while the ability to innovate in the midst of change and complexity has long been a distinctive feature of knowledge–based firms (Miles, 2005). Creativity is the post hoc of innovation, thus every employee must re-awaken their creative potentials to discover new windows of opportunities and exploit it for a new or unique product/service, process, resources and market at a regular frequency. Innovation is a product of learning according to the learning theory (Barney, 1986). Innovation can be absolutely new or an improvement on existing product/service as it is happening in the ICT world of mobile phones and computers hardware and software deals (Abubakar, Mitra & Adeyeye, 2018). Innovation, should not be kept on the shelf but rather taken to market because the ultimate is acceptability in the market place (Mitra, 2012). When these are emphasized in the organizational culture, employees’ energy and intellect are less redundant and are directed towards productive and profitable endeavors (Baumol, 1993) as opposed to corrupt tendencies around. Corruption can be inviting when there is idleness or boredom from routine work. Innovation is fruitful as employees are given a measure of freedom, discretion and autonomy, subsequently a level of flexibility in terms of budgets, rules, controls and process. Innovative employees should be rewarded monetarily or non-monetarily to encourage them to do more (Adeyeye, Udogwu, Bello & Araga, 2019). Employees cannot innovate in the moon hence the need to promote and invest in experimentation, in order to bring out newness or modifications from what has been in existence. Thus, the more ICT firms embrace the culture of innovation the more likely they deter corruption and perform optimally. Therefore, based on this argument a null hypothesis is developed for testing that:

Ho1: There is no statistical relationship between Innovativeness and corruption deterrence on ICT firms’ performance in Minna metropolis.

**Experimentation**

A viable Research and Development section is one of the features of KIBs while technology triggers entrepreneurial activities. Thus, examining the entrepreneurial culture in ICT firms, every employee should be designed to develop innovative concept and be involved in the process. For instance, in 3M Corporation, every employee is allowed to spend 15 minutes daily to experiment on anything as trial and error. Their slogan is ‘if you don’t succeed at first, try, try, try, again’ (Kuratko, 2009). Every member of the organisation, irrespective of the employment status, must engage in experimentation whether it will fail or succeed (Morris et al., 2012). Failure is associated with experimentation as well as innovation processes. Tolerance of failure is salient to the entrepreneurial culture and the learning theory perceived failure as a learning curve. A conventional business culture has zero tolerance for failure. Failure in normal businesses could cost an employee his/her job, missed promotions, blemished records, personal embarrassment, loss of status and others (Morris et al., 2012, Adeyeye et al., 2019). The aftermath could lead some employees to be engaged in certain corrupt practices so as to cover-up or make-up for the loss incurred due to failure. They will completely avoid proper experimentation, consequently leading to corruption, lack of a breakthrough and incremental innovation because of fear of failure. Failure is ineffaceable in entrepreneurship and thus must be recognized in a positive way and reinforced until such failure turns out to become a success for marketability. Fear of failure leads to mediocrity; hence, Johnson and Johnson company developed a maxim among their managers that recognized failure as the most important product (Morris et al., 2012). ICT firms’ tolerance of failure should not be moral (ethical) or personal (inadequacies in skills and task) failure but rather uncontrollable failures beyond human control. A reward system should be designed as incentives for employees that are involved in experimentation whether failed or successful (Morris et al., 2012). Whatever be the outcome of the experimentation, proper accountability of resources in terms of payroll, time, stock flow, income and expenditure, sales and purchases, and materials investment made by the ICT firms must be given without compromise. Thus, the more an ICT firm invests on experimentation, the more they are likely to deter corruption and perform well. Therefore, based on this discussion a null hypothesis is developed for testing that:

Ho2: There is no statistical relationship between Experimentation and corruption deterrence on ICT firms’ performance in Minna metropolis.

**Accountability**

Accountability is the meeting point for authority and responsibility and very crucial in entrepreneurial culture and effective organisational performance. Informality breaks bureaucracy to permit the entrepreneurial culture, and can be strengthened by accountability. Accountability is the expectation that an employee will report the result of his entrepreneurial behaviour and the resources involved to enable management to evaluate whether the decisions made or guidelines given to execute responsibility has led to optimal performance (Hellriegel, Slocum & Jackson, 1999). Employees must be accountable for performance within their limit, as it flows from bottom - up while the management must also possess the sense of accountability to the overall management (Cartier-Bresson, 2000). Accountability is the keeping of accurate and complete books and records in reasonable details. For instance, the appropriate time-keeping, record-keeping of finance, stock of inventory, and work plan and so on is an antidote for and a deterrent to ethical challenges like dishonesty, fraudulent practices and so on in ICT firms. Every organizational culture emphasizes the values and beliefs that influence employee’s experience, behaviour and interactions among themselves (Ekpeyong & Ekpeyong, 2016). Accountability must be emphasized as a way of life in ICT firms. ICT entrepreneurs should have a proper architecture of the entrepreneurial culture and put them in proper place to enhance performance. When such culture becomes a way of life of the employees, the effect is not only felt on the firm performance but also in the community around them. Thus, the more ICT firms emphasize the culture of accountability, the more likely corruption is deterred and have a sustainable performance. Therefore, based on this argument a null hypothesis is developed for testing that:

Ho3: There is no statistical relationship between accountability and corruption deterrence on ICT firms’ performance in Minna metropolis

**Relationship between Entrepreneurial Culture, Corrupt practices and ICT firms’ Performance**

Technological small firms are drivers of entrepreneurship while entrepreneurship is an agent of economic growth (Kuratko and David, 2009). Entrepreneurial culture is a unique culture that deviates from the traditional organizational culture to boosts firm performance and promote entrepreneurial behaviour among the personnel so as to improve the standard of living of the people (Adeyeye et al., 2019). This study focused on innovation, experimentation and accountability among other elements of entrepreneurial culture, and could combat corrupt practices and ensure ICT firms performance. Performance is a review of the overall activities to ascertain how the organisation has better achieved its set goals (Upadhaya, Munir & Blout, 2014). There are three major means of measuring financial performance: financial performance index using profitability, return on assets, return on investment etc.; product market performance index using sales, market share etc. and shareholders returns index using total shareholder returns, economic value-added etc. (Upadhaya, Munir & Blout, 2014). This study will measure performance by economic value-added. Innovation and experimentation leading to value addition while accountability quantifies the value-added monetarily. However, sometimes, people take experimentation (trial and error) as an opportunity to embezzle and be fraudulent while accountability is perceived as distrust or bureaucracy in a new robe to enslave, but this is a wrong notion in an entrepreneurial organization. Accountability and transparency are corruption control mechanism (Liu 2016; Pedro 2019 & Hoinaru et al., 2020) as they are essential building blocks in integrity management (IACA, 2020).

Corruption is the perversion of integrity or state of affairs through bribery, undue favour, or moral depravity (Otite, 2000; Liu, 2016, IACA,2020) such as employees’ inflating cost price or selling price for personal advantage, purchase of fake hardware at the cost of original, involvement in shady business at the expense of the firm, outright stealing of companies stock, pocketing of company’s ‘money and service charges, diverting company’s customers’ to self for a discount, as well as operating of dual receipt (personal and company’s receipt) as it affects ICT firms. Corruption has virtually influenced the socioeconomic, cultural, business and political landscape of Nigeria devastatingly that seems nothing meaningful can work (Dike & Onyekwelu, 2018, Pedro, 2019). Corruption is a bane to development which effect are seen as a breakdown in social order and lives, unfair competition and increase in the cost of doing business (Adeyeye & Bamidele, 2017, Hoinaru et al., 2020). It causes low income and critical in generating poverty traps (e.g. Andvig & Moene, 1990; Blackburn et al., 2006, 2008) lowers technological transfer as foreign companies are unable to protect intellectual properties (Hoinaru et al.,2020). The Nigerian government has taken numerous actions and strategies to crack the incidence of corruption and bad governance in the country (Adeshina, 2015; Liu, 2016; Pedro, 2019) but to no avail hence, if tackled at the firm level it may later on affect the whole society. This kind of development as pointed above compelled Preye and Weleayam (2011) to argue that Nigerians poverty, greed and poor reward system for hard work is a contributory factor that promoted corruption in many sectors.

**3.0 Methodology**

This study is quantitative in approach employing the descriptive survey design. The target population were all registered C-& T- KIBs with Corporate Affairs Commission (CAC) of Nigeria. However, due to poor documentation of the developing economy, a comprehensive sample frame could not be gotten, hence an accessible population from the association membership list of the various ICT firms in Minna Metropolis was used. Minna was chosen as the context for the study due to its urbanization as the capital city of Niger state in the middle belt with the spillover effects of Abuja the Federal Capital territory of Nigeria. Purposive sampling technique was adopted to select a group of subjects from the population. The city was divided into 10 groups of which 15 ICT firms that have operated consistently for five years and above, having not less than 10 staff members (to exclude micro firms from the sample size) were selected from each group which amounted to 150 ICT firms as sample size. A structured 5-points Likert scale structured questionnaire was adapted from previous studies (Strambach, 2008; Adeyeye, 2013) with five sections: The demographic data, Performance, innovativeness, experimentation and accountability. The face and content validity were carried out and the internal reliability test was done with Cronbach Alpha and KMO .70. The pilot test employed the test-re-test with Pearson-Moment Coefficient result 0.79. Descriptive and inferential statistics were used for the analysis.

**4.0 Results and Discussions**

**Descriptive Statistics**

The descriptive analysis showed that about 66% of the respondents were males, as found in Lagos KIBS where men were 75% (Adeyeye, 2013). Gender inequality has remained an issue of concern in the national developmental discourse as included in the millennial and sustainable Development Goals and receiving regional attention. Approximately 40% of the ICT firms’ respondents were within the working class age of 18-29 years. This implied that the sector consisted of excited and dynamic graduates that strove to make a living. They were well innovative and experimental, if all protocols are loosely handled while 50% were working for ICT firms’ sole proprietors. Also, 60% of the respondents were small firms with 10 and above employees that has the propensity to exhibit corrupt practices. This implied that ICT firms in Minna Metropolis are dominantly owned by sole proprietors which are typical of start-ups (GEM, 2017).

**Inferential Statistics**

**Multiple Linear Regression Model**

Therefore, to test the multiple effects of entrepreneurial culture on business performance, a multiple linear regression analysis was used.

The regression model for the study is as follows:

EC= βo + β1X1+ β2X2 +β3X3 + e

Where βo = Constant

β1X1= Innovativeness

β2X2 = Experimentation

β3X3= Accountability

e= error term

**Table 1: Regression analysis result**

|  |  |
| --- | --- |
| ***Variables*** | *Model* |
| *Constant* |  |
| *Innovativeness* | *.340*  *(4.432)\*\** |
| *Experimentation* | *.182*  *(2.381)\*\** |
| *Accountability* | *.201*  *(2. 660)\*\** |
| *R* | *.618a* |
| *R square* | *.475* |
| *Adjusted R Squared* | *.458* |
| *F value* | *20.322\*\** |

\*\*p<0.01,\*0.05, t value in parenthesis

*Source: Authors’ Field Study, (2017)*

Table 1 showed the multiple linear regression analysis result between entrepreneurial culture variables and ICT firms’ performance. The overall model revealed a significant positive relationship existed between entrepreneurial culture and performance. The R-square showed that the model explained 47.5% of the total variance as a whole while other variables not included in this model will explain the remaining percentages. The significant F (20.322) indicated a good model fit. The result of the three null hypotheses is highly significant at p<0.1, therefore, they were not accepted but the alternatives were accepted.

Innovativeness was positive and statistically significantly affected ICT firms’ performance in Minna metropolis at 5% level of significance. This supports the claim that innovation is the core of entrepreneurship (Reguia, 2014) and failure to innovate leads to decline and consequently death (Kurtako & David, 2009; Adeyeye & Adepoju, 2015). The learning theory supports every individual in ICT’s firms need for commitment to creativity and innovativeness as a learning process for relevance and optimal performance, and also explains the unlimited scope of innovativeness that an individual can be involved. An idle hand is the devil’s workshop, an adage says. Where the energy and intellect are not directed towards productive innovation, there is tendency to be directed towards unproductive innovation, which might be corruption within and outside the organisation. The entrepreneurial culture enabled ICT firms to regularly create a new or add-value to existing products/ technology and services. It is the combination of individual initiatives and spirit of cooperation for innovation (Kuratko et al, 2012). Thus, the T- KIBs and C-KIBs in this sample have inculcated every form of innovativeness into their culture and consequently have an impact on the value-adding performance of the ICT firms in Minna metropolis.

Also, the result displayed that experimentation had a positive effect on ICT firms’ performance at 0.05 level of significance. The result predicted that a unit improvement in experimentation will lead to 0.18 unit increase in the performance of ICT firms in Minna metropolis. This is in consonance with Kwenin, Muathe and Nzulwa’s (2013) argument that experimentation is very vital as a mechanism that makes things happen. Experimentation and innovativeness must be duly rewarded monetarily or non- monetarily by giving awards, other forms of recognition, promotions, re-assignments, vacations or simple thank you and a handshake. When employees are rewarded, they get work done better (Kuratko et al., 2014) and corruption is out of their minds. Dike and Onyekwelu (2018) submitted that poverty, greed and poor reward systems for hard work are some of the factors influencing corrupt practices in organisations. Appropriate reward system should be reinforced for experimentation and innovativeness in an entrepreneurial culture. Nikolov and Urban (2013) corroborated reward systems as great ways of rewarding efforts and behaviour which the organisation wishes to encourage and consequently could deter corrupt practices. When innovative and experimenting employees’ in ICT firms’ productive activities are rewarded, they work with enthusiasm.

Furthermore, the result also indicated that the entrepreneurial culture of accountability has a significant impact on ICT firms’ performance in Minna Metropolis at 5% significant level. The result predicted that a unit improvement in accountability will positively and significantly impact ICT firms’ performance in Minna Metropolis with .201units. This study’s finding is similar to prior expectations and Hellriegel, Slocum & Jackson (1999), Liu (2016), Pedro (2019), Hoinaru et al., (2020) & IACA (2020) which held that accountability and transparency are control mechanism and essential structure of the entrepreneurial culture. Although the findings of this study are similar to some previous studies, however, the originality is that the variables under consideration have not been studied together. Innovativeness, experimentation and accountability are very significant architecture of the entrepreneurial culture and integrity management (IACA, 2020). Moreover, the findings also showed that entrepreneurial culture is significantly related to small firms and not only corporate firms (Adeyeye et.al., 2019).

Finally, the performance of ICT firms can be greatly be attributed to its knowledge level since they are business services that are highly knowledge-based in nature according to the learning theory, and a departure from regular business routine and procedures (Muller & Doloreux, 2009). Moreover, taking into consideration the acceleration of technological changes, it is relevant for ICT firms to invest in their knowledge base at all levels and encourage innovativeness, experimentation and accountability culture in order to deter corruption.

**Conclusion and Recommendations**

This study has investigated a unique perspective of entrepreneurial culture in discouraging employees of ICT firms’ in Minna Metropolis involvement in corruption and its impact on the performance. The overall result in answering the research questions indicated that entrepreneurial culture of innovativeness, experimentation and accountability have significant positive effect in deterring corruption on ICT firms’ performance in Minna Metropolis. This study contributed originally to literature in entrepreneurship and innovation in developing economies by identifying that innovativeness, experimentation and Accountability prevent corrupt practices in this context as it differs from other economies. Therefore, the study recommends that:

* ICT firms should adopt the entrepreneurial culture as the organisational culture holistically.
* Firms should include cost of innovation, experimentation and reward system in the strategic budget.
* Accountability of all resources through regular and proper inventory for transparency should be demanded and monitored from top to bottom.

This will facilitate a healthier entrepreneurial climate and deter corruption and enhance ICT firms’ performance in Minna Metropolis.

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