

African Journal of Business Management Vol. 6(25), pp. 7469-7477, 27 June, 2012
Available online at <http://www.academicjournals.org/AJBM>
DOI: 10.5897/AJBM12.921
ISSN 1993-8233 ©2012 Academic Journals

Full Length Research Paper

Managing innovations in telecommunications industry in Nigeria

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Accepted 18 May, 2012

Of all the challenges faced by managers today, the management of technological innovation (MTI) is one of the most demanding. Get it right and firms create value and profit. Get it wrong and firms can face serious and perhaps terminal problems, losing money, workers, and reputation. This will lead to revenue loss, company closures and increased unemployment. The objective of this study was to assess the level of innovation in Nigeria's telecommunications industry. The aim was to ascertain how innovative the operators in the industry are which in turn determines how competitive the industry is. Data was collected from available literature on the telecommunications industry. The study proved that there are innovative activities being carried out by the various operators but there is still a lot of room for improvement. The study also found out that government and regulatory authorities need to do more in the area of infrastructural development and policy formulation to ensure a level playing field for both the old and new entrants. The study recommended that all stakeholders in the telecommunications industry, especially the regulator, shareholders, sponsors/directors, top management, and the government, should ensure that there is an innovation strategy in place which should be managed to ensure a high level of productivity and competition amongst the various operators. The study concluded that most of the service providers do not have designed corporate innovation strategies or processes. Furthermore, there are no agents of innovation and innovation teams across the various organizations; champions who will assist the project manager with the implementation and tracking of ideas, innovations and changes. Therefore, there is the need by the various service providers to breakdown functional barriers in their various organizations. However, it is equally important for these organizations to minimize the impact of hierarchies so that a seamless flow of ideas is made possible.

Key words: Telecommunications, management of technological innovation (MTI), infrastructural.

INTRODUCTION

Of all the challenges faced by managers today, the management of technological innovation (MTI) is one of the most demanding. Get it right and firms create value and profit, develop sustainable competitiveness, become vibrant and conducive places to work, attracting and retaining the most productive and creative staff. Get it wrong and firms can face serious and perhaps terminal

problems, losing money, workers, and reputation. In the vast majority of business sectors, if firms do not innovate, their competitors will, and they will be put out of business (Dodgson et al., 2008: 1). The service sector has become innovation intensive and some of the significant sectors are the computer and telecommunications services (Howells, 2000: 4). Miozzo and Soete (2001: 4) posit that telecommunications belongs to a group of network services, which are dependent on information technology networks. The development of information technology (IT) has facilitated improvements in the complexity, precision and quality of services offered by these

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providers (Tether and Metcalfe, 2003: 2).

However, there have been rapid economic and structural changes happening all over the world over the past decade. This has led to an agreement especially in the developing economies, in support of a market-oriented (private sector-led) approach to growth and recognition that competitive markets and entrepreneurial activities facilitate a more well-organized resource allocation. These developments show that in order to gain competitive advantage and growth, organisations have to create new products/services, which means they have to be innovative to survive. Innovation has long been argued to be the engine of growth regardless of the condition of the larger economy. Whilst competitive advantage can come from size or possession of assets, etc., the trend is increasingly favouring those organisations that can organize knowledge development, technological skills and experience to create new products, processes and services (Trott, 2003: 834-855).

Furthermore, IBM identified ICT as one of the main drivers of innovation needed to help accelerate Africa's participation in the global economy. IBM's global innovation output report 2009 stated that, "those African nations that can craft aggressive policies to nurture these drivers will quickly emerge as leaders within Africa and on the global stage" (African investor, 2010). Therefore, the prime objective of managers lies in improving efficiencies and enhancing sustainable competitiveness in their organizations. Technology and innovation helps managers to meet these objectives. Successful MTI occurs when the entire range of innovative elements and activities of organizations are well managed and effectively combined within an innovation strategy. This allows firms to fulfil their overall purpose: be it profit generation, growth, better quality and range of delivery, great market share, or increased employee remuneration, job security or satisfaction.

MTI encompasses all those elements of firms where developing and using technological innovation improves capacity to meet objectives. It includes the management of innovation strategy, innovation communities and networks, research and development (R&D), design and new product and service development, operations and value delivery. While there are many incentives to innovate, there are considerable obstacles to success. MTI often involves managing in circumstances where there is a high degree of ambiguity, uncertainty and risk. As technological innovation is for many firms the primary means of competing in the knowledge-intensive economies of the twenty-first century, MTI is a vital activity (Dodgson et al., 2008: 1).

Therefore, in this bustling world of technological change, managers often find themselves overwhelmed by the number of choices that are available when making technology-related decisions. Most managers will readily admit that it is difficult if not impossible to accurately predict future technological advances. Nevertheless,

senior managers in most successful firms in today's fast pace, "on-demand" world should understand the nature of technological change and evolution. They should know enough to be able to create reasonably accurate forecasts, and take advantage of high value technology investments and energizing markets opportunities to maintain or grow their market shares (Adomavicius et al., 2006: 1).

Statement of the problem

Can creativity and innovation be managed? This question has yielded different answers and different opinions. But, it is not farfetched to say that innovation is directly proportional to the attitude of senior management. Thus, without a corporate strategy to reach defined corporate goals, innovation will be misdirected and unguided (Heskett, 2007). Innovation is viewed as the core business competency of the 21st century and in order not to only compete and grow but to survive in a global economy, businesses must innovate. To date, innovation has been approached in a piecemeal fashion often linked solely to the New Product Development (NPD) process (project-leaders.net).

Also, innovation is about creating something new out of nothing. In the modern world of globalisation, innovation is of prime importance to any company or organisation for performing well. It has been observed that most organisations stop growing in most cases, after reaching a certain stage, as their leadership always tried to maintain the status quo and discouraged innovative thoughts and actions through the corporate strategies they adopt (Heskett, 2007). Thus, availability of the right resources may act as a catalyst but creativity will not flourish if organisations do not have a culture of encouraging and supporting innovation. Therefore, the single most important element to foster an innovative culture in an organisation, is to have in leadership at all levels, people who are not only missionaries in their zeal but also courageous enough to face critics (Heskett, 2007).

It is important to note that Nigeria's economy grew by 6.9% in 2009, led by the expansion in Nigeria's telecoms industry. The oil and gas sector shrank by 1.2% while the telecommunications industry, Africa's biggest, expanded by 34.2% in 2009 (Bloomberg Business Week, 2009). As Nigeria targets to be one of the top twenty economies in the world by the year 2020, there is a need to encourage in our various organisations, leaderships that will drive innovative strategies that will help in realising this target objective. This is most pertinent in our telecommunications industry because commercial activities in the 21st century is carried out mostly through information and communications technology like, e-banking, e-commerce, e-payment, e-education, e-health, e-agriculture etc. and also because of the importance of

the industry to Nigeria's economy. We need the organisational leadership that will foster and drive our telecommunications industry towards achieving successful innovative strategies that will make them highly competitive internationally.

Afeikhena (2002: 1-3) writing on public enterprise reform in Nigeria, an evidence of the telecommunications sector, using Nigerian Telecommunication Limited (NITEL) as a case study, concluded that only competition and private participation will guarantee long-term improvements in the telecommunications sector. The success of deregulation can only be calculated in terms of falling rates and improved service availability. He also averred that sluggishness in undertaking regulatory change can have negative effect on the economy through slow diffusion of new technologies and services, economic inefficiency, and retarded employment growth opportunities. In essence, unless organizations are prepared to renew their products and processes on a continuing basis their survival chances are seriously threatened (Tidd et al., 1997: 12). This will lead to revenue loss, company closures and increased unemployment.

Objectives of the study

The objectives of this study were:

- 1) To ascertain the impact of innovation on the level of competition in Nigeria's telecommunications industry;
- 2) To assess the influence of management challenges on innovation in the telecoms industry;
- 3) To examine the extent at which innovative activities has led to the growth of telecommunications industry in Nigeria.

RESEARCH METHODOLOGY

The paper is a qualitative study which is based on secondary data. The study was carried out through a meta-analysis of reports on the telecoms industry. Relevant literatures on innovation and telecommunication industries were reviewed, which led to insight and stimulating research.

THEORETICAL FRAMEWORK

Service innovation

It is often useful to think of services as either intermediation activities, such as transport, that arise because consumers want to separate production and consumption, or contact services, such as haircuts, telephone calls, or medical services, where production involves the consumer directly and where the output of the activity is embodied in the consumer. An important aspect of a service is the relationship between production and consumption, that is, goods can be produced meaningfully without consumers (think of a firm producing a car), whereas services require the consumer (a haircut, or repairing a car).⁷ Innovation is the successful exploitation

of new ideas – this definition applies to all firms in the economy and is equally relevant to services innovation. While innovations in tangible products may be more easily recognized, possibly due to their physical and 'codifiable' nature, there is wealth of excellent examples of services innovation as would be explained:

Airport runway space

Landing planes is a classic service that is intangible and jointly produced by air traffic control and the service users (airline carriers). Despite runways having been 'full' for many years, year after year major airports continue to increase capacity. This has been achieved by ongoing innovations including improved efficiency in ground operations, greater co-ordination between relevant actors and developments in technology that have facilitated safer spacing of landing times. Much of this has been achieved without additional runways being built.

Financial services

Many banks now offer a whole range of services online, facilitated by ICT, and recently there have been developments such as open plan – which is a process/business model innovation, introduced by the Woolwich that enables customers to access and link all their financial holdings (savings and current accounts, mortgage, etc.) through one portal. Open plan customers can use both traditional methods of communication such as branches and automated teller machines, and more recent channels such as telephone call centre, internet and digital television.

Air flights

While the core offer of airlines remains transport between destinations there has been considerable innovation in this area, for example: Low-fare carriers (for example, Ryanair, EasyJet) have transformed the airline industry and the travel industry in general. This business model innovation emerged in Europe from the deregulation of European airspace in the 1990s; similar models such as that operated by South West were already operating in the US.

Retail

There have been many innovations in retail services, but perhaps one of the most pervasive has been through use of bar codes. The introduction of bar code scanners linked to information and communication technology has transformed retail. It required retailers to undertake several non-technological changes (for example, changes to distribution networks, delivery procedures, etc) to take full advantage of the new technology (e.g. more efficient inventory management, measuring the effect of promotions, etc.) (Crespi et al., 2006).

LATEST DEVELOPMENTS IN THE NIGERIAN TELECOMS SECTOR

The telecommunications industry in Nigeria is currently undergoing rapid change and phenomenal growth. Over the past decade in particular, the Nigerian telecommunications industry has begun to deliver for the residential and business consumer. This recent development is as a result of the liberalization of the sector and the resulting competition by private operators (NCC, 2005: 2). The

Nigerian personal mobile business has been very pivotal to the growth of the telecoms industry in Nigeria. Developing from a 30,000 line subscriber base at the beginning of the millennium to 9.174 million connections at the end of 1994 and 75 million in 2010, the personal mobile business has been an outstanding success. Nigeria is now officially the largest growth market for telecommunications in Africa and the Middle East, and possesses the most dynamic fixed and mobile telephony in Africa (NCC, 2005: 4).

Furthermore, in terms of competitive market structures, mobile telecommunication has become the strongest telecoms sub-sector, as all four competing operators; MTN, GLOBACOM, AIRTEL and ETISALAT engaged the market aggressively. In almost all aspects, the mobile business displays the characteristics of a vigorously competitive market with operators declaring profits, consumers enjoying lowering prices under a stable and fairly consistent regulatory regime (NCC, 2005: 4-5).

Innovation in Nigeria's telecoms industry

"If you cannot compete on price you have to differentiate, and to differentiate you have to innovate!" (Bruce, 2007: 1). As a result of competition in Nigeria's telecommunications sector, the operators had to be more innovative in order to keep the existing customers as well as attract new customers. This led to operators coming out with a variety of innovative packages meant to add value for money. Some of these innovative packages are explained as follows:

VIRA game

This is a chain promotion that allows MTN subscribers to earn more money by sending a special text to at least 10 other MTN subscribers. This is meant to attract more subscribers to MTN network so that they can send texts and earn money.

Fast mail

This service provides customers with access to information via e-mails anytime, anywhere. It provides an e-mail account of about 10MB storage space with a customised e-mail account, which subscribers can access via SMS or the internet. In addition, subscribers can re-direct e-mails from their corporate intranet to their MTN fast mail account such that they can access their official mails via MTN fast mail account at their convenience (mtnonline.com).

MTN family and friends expanded

This is a new prepaid plan that allows you to register up to 10 family and friends numbers and enjoy rates as low as 17 kobo per second on calls to your MTN registered numbers and 20 kobo per second on calls to other networks that you register as your family and friends.

Special micro SIM cards

MTN has introduced special micro SIM cards compatible with the new models of smart devices and tablet PCs. These new micro-SIM cards are smaller in size than the standard SIM card and specially manufactured for devices including the Apple Ipad and Iphone 4. The Micro SIM will facilitate enjoyable and convenient Internet

access via the MTN SIM Plus menu.

DSTV mobile TV service

MTN is enriching lives by providing access to a world of information and entertainment via the DSTV mobile TV service. You can now catch all the exciting moments LIVE from Big Brother Africa All Stars on your DSTV Mobile phone. (Simply use 12345 as the parental code to start watching Big Brother All Stars live on your DSTV mobile). What's more? You also get 10 other exciting DSTV channels on your Nokia 5330 Mobile TV phone whenever you're on the move.

MTN eye

This package assists the subscriber in knowing exactly when to set out on a journey and informs your decision on the most appropriate route to use to get to your destination. MTN eye would save you valuable time and money. Now motorists travelling into or around Lagos can take the guess-work out of their travel, thanks to Nigeria's first traffic monitoring and advisory service from MTN Nigeria. MTN eye is not a surveillance or security system. Neither is it intended for any security related purposes. The videos have a low resolution so they are not usable for any kind of recognition of faces, vehicle number plate, etc. MTN eye from MTN Nigeria is Nigeria's first commercial traffic monitoring and advisory service which gives traffic advisory information to MTN Nigeria subscribers via their mobile phones or computers. The video mode or video service is accessed via your mobile phone web browser or your computer browser. Once on the MTN eye site, simply search for the street/location of interest from the list of covered areas and click on it to view the traffic video. The video service delivers a 10 s video footage, showing the current traffic situation on the location requested. The clips are updated every 3 min.

MTN who called and notify me

With MTN who called and notify me, MTN keeps you up to speed with calls you missed while your phone was switched off or unreachable while also sending you an SMS message when a number you could not reach becomes available. The SMS message with information about calls you missed or numbers you could not reach will be sent to your mobile phone as soon as your mobile number becomes available or as soon as the number you attempted to call becomes available.

Conference call

GLO mobile offers a conference call service to some of its subscribers. This feature allows subscribers to hold a conference call with, up to five mobile or landline numbers.

Vehicle tracking

Vehicle tracking solution is the ability of corporate customers to track, locate and communicate with their vehicle, fleet and valuable assets using an integration of global system for mobile communications (GSM) and global positioning system (GPS) technology, and being visualized in a geographical context. The vehicle and assets can also be monitored for fuel consumption, speeding, tampering with goods, tyre pressure; emergency alerts etc. with this solution, corporate customers have real time information on their fleet and ensure the best run for their

resources. This service is being offered by GLO mobile.

Glo mobile office

This is a general packet radio services (GPRS) based service that will allow subscribers to access their microsoft exchange mail, appointments, calendar and tasks directly on their mobile phone. The service can also allow subscribers use their corporate applications like sales force automation and customer relationship management systems directly from their mobile phones (NCC, 2005: 6).

Glo power box

This is a Glo customized phone that is not expensive and has a lot of benefits for the consumer who is intent on maximizing their resources. The cost of the Glo power box is ₦2000 but customers will get ₦3000 worth of benefits in a year. The benefits include; free G2G airtime of ₦200 monthly for ₦600 12 months - ₦2400, 10 free G2G SMS monthly for 12 months, free night calls, Up to 20% bonus on recharge.

Glo quick teller

Glo quick teller gives you convenient access to an array of services including recharge, bill payments, donations and state government payments. From DSTV bills, to HiTV bills, to PHCN bills and recharge that actually tops up your line. This is what quick teller brings to you. Quick teller services are available not only at www.quickteller.com.ng, but also at bank ATMs, select merchant locations, and via your bank's internet banking portals.

The Glo UK top up card

This is a Globacom network credit voucher which subscribers roaming in the UK and Ireland can buy and top up their phones. Nigerians in the Diaspora can also purchase the cards and send the PINs to their friends, families and associates in Nigeria on the same Glo Mobile network.

Glo wonderful offer

It is a prepaid tariff plan which rewards the customer with free minute on a call for every minute spent on the call. The customer pays for one minute and gets the next minute of that call free, irrespective of the call being on net or off net. The features include; pay for one minute, Glo pays for the next minute of the call, effective rate as low as ₦7.50/min for on net calls and ₦12.50/min for off net calls, 20 free Glo-to-Glo SMS per month, 10 to 20% free Glo-to-Glo bonus Talk time on every recharge of ₦ 1000 and above, 35 h free Glo-to-Glo talk time per week, from 12 midnight to 5 am, upon usage of ₦ 500 in previous week.

Etisalat you and me

Etisalat you and me allow easy starter customers enjoy "free credit" every week to call a loved one's Etisalat number anytime. All the customer has to do to enjoy this fantastic offer is to register that special Etisalat number by dialing *233*1*etisalat number#, recharge with a minimum amount weekly to get the additional "free credit". The customer will get the "free credit" during the week they recharged up to the minimum amount. The credit can only be used

to call the registered you and me number. Validity period for the free credit is 7days.

Etisalat dotme

This is a new SMS-based bulletin board service which allows customers share information and stay connected with their contacts while on the go. You can instantly publish information or status updates via SMS from your mobile phone at any time. The service is entirely based on SMS so having access to the Internet or a smart phone is not necessary.

Etisalat easylife

Etisalat easylife allows the customer to enjoy; 20k to call anyone, anytime on any network anywhere in 9ja, 20k to call anyone, anytime in US (mobile and land line) and UK (land line), 20 free SMS daily (etisalat to etisalat lines), Enjoy bonus on incoming calls (free 'credit' to call any network anytime you receive calls from other networks).

Airtel club 10

It allows the subscriber to enjoy discounted rates on calls and SMS; also get free mid-night calls to your members! Simply make 1 min of a local call between 8 am and midnight to enjoy the free midnight call benefit. Get free data valid for 1 week after a recharge of ₦200 or more within one week. Other benefits include; add 9 Airtel lines to yourself to form a club of 10, make calls to your members at 10k/s*, SMS your club members at ₦1/SMS, make free midnight calls 12.30 and 4.30 am daily to club members, call other Airtel numbers at 20k/s*, SMS other Airtel numbers at / ₦3SMS, calls to other networks are only 30k/ s*, SMS other networks at ₦5/SMS, calls to US, Canada, UK*, India and China at 20k/s after your 1st min at 60k/s, free 10MB data valid for 1 week after a recharge of ₦200 or more within one week.

Airtel easy recharge (ERC))

This is a service that gives Airtel valued customers the unique opportunity to top-up their phones, or that of friends and family virtually without using a scratch card. ERC is denominationless (flexible) and any value from ₦50.00 can be purchased.

Airtel mobile office

With Airtel mobile office, you can access your office calendar, contacts, and email. Email when you are away from your desk - your office - even your laptop. With just your Airtel phone. Also works with Microsoft® Outlook and IBM® Lotus notes view your daily schedule, or past and future appointments.

Airtel corporate package (ACP)

This is a premium package which gives the additional benefits of lower tariffs, option of paying in arrears for your airtime usage, unlimited talk-time controlled by credit limit options, and a wide range of value added services. This package is available both as postpaid and hybrid enabling you to top up with recharge cards. It is targeted at all levels of staff within your organization giving flexibility

and easy management.

Airtel football community service

Airtel football community service is a unique value added services that provides Airtel customers the opportunity of receiving SMS updates on the English Premier League for the four biggest clubs Manchester United, Arsenal, Chelsea and Liverpool. These update includes match fixtures, breaking news, league table, goal updates (half time and full time scores) Post match analysis and many more.

INNOVATION SYSTEMS MANAGEMENT

Innovation is often about small, incremental changes to products, services and processes. It also needs the involvement of all managers in every department from finance to customer services. Innovation should be planned and managed as a core business process covering all parts of a business. More than that, it should be integrated into the business in both strategic and operational levels.

It is also the core business skill and process for the 21st century and as with other core business processes; innovation needs to be linked to strategy and the business planning process. Innovation separate from business strategy runs the risk of diverting key resources and damaging the focus of an organisation. Innovation activities must be driven by strategy and current business imperatives. The extent and type of innovation should be determined by current business performance and future expectations and by an organisation's tolerance to risk. How far innovation is integrated with a business strategy is also dependent upon a business appetite for risk and its risk profile. Different types of innovation strategies and projects have different risks (innovationtools.com).

Business strategy

Within organizations there is a fundamental tension between the need for creativity and the need for stability. On the one hand, companies require stability and static routines to accomplish daily tasks efficiently and quickly. This enables the organization to compete in today's world. For example the processing of millions of cheque by a bank daily, or the delivery of food by multiples to retail outlets all over the country, demands high level of efficiency and control. On the other hand, companies also need to develop new ideas and new products to be competitive for the future. Hence, they need to nurture a creative environment where ideas can be tested and developed. This poses one of the most fundamental problems for management today.

The ways in which firms manage the tension between the need to be creative and efficient is termed strategy, and is concerned with the long-term direction of an organization. Strategic decisions are normally about trying to achieve some advantage for the organization over competition. It is the matching of the resources and activities of an organization to the environment in which it operates. This is sometimes known as the search for strategic fit. Strategic fit is developing strategy by identifying opportunities in the business environment and adapting resources and competences so as to take advantage of these (Johnson and Scholes, 2002: 10). Strategy is the need to make a choice. It enables organization to properly respond to change. Effective strategies answer three key questions, namely, how can we create value? How will the technology evolve? And how will the market change? In order to capture value, there are certain questions that come to mind namely, how should we design the business model? Where should we compete in the value chain? And how should we compete if

standard are important? In terms of delivering of value it is necessary to ask the following questions, namely how do we manage the core business and growth simultaneously? How do we use our strategy to drive real resource allocation? (Birkinshaw and Mol, 2006).

Innovation strategy

In a business environment where innovation provides distinctive and sustainable competitive advantages, innovation strategy is the basis for the firm's overall strategy. Innovation strategy involves analysis of firms' business, market, and technological environments and consideration of what resources they have to draw upon. It involves making choices about innovation in uncertain and ambiguous circumstances, with diverse strategies for different levels of uncertainty. It entails building innovative capabilities firms need, to meld skills and resources to analyze, select, and deliver innovation to enhance organizational performance. It requires consideration of how new initiatives fit with firms' existing portfolio and how innovation strategy complements overall corporate strategy. It is concerned with integrating all the areas of MTI into a coherent whole (Dodgson et al., 2008: 3).

An innovation strategy guides decisions on how resources are used to meet a firm's objectives for innovation and thereby deliver value and build competitive advantage. Its crafting is supported by a number of innovative capabilities that steer the configuration and reconfiguration of a firm's resources. It entails judgments about which kinds of innovation processes are most appropriate for the firm's circumstances and ambitions. An innovation strategy identifies the technologies and markets the firm should best develop and exploit to create and capture value. It does so within the limits of the resources available to the firm to support current and future innovation efforts and its evolving corporate strategy, organization and culture.

Innovation strategy is different to mainstream business strategy because it needs to comprehensively accommodate uncertainty. As such, many common approaches to business strategy are inappropriate for innovative businesses. Some uncertainty is always present in strategic management of incremental innovation, but is a major strategic factor in radical innovation (Dodgson et al., 2008: 95).

Elements of innovation strategy

There are four interrelated elements involved in innovation strategy namely enacted strategy itself, resources available for innovation, innovation capacity and innovation process used to deliver result. The enacted strategy itself including its targets and 'fits' with overall company strategy, existing innovation efforts, and the context in which, it operates. The identified targets are the technologies and markets that managers believe will create and deliver best values for their firms. The resources available for innovation are the assets a firm owns and to which it has preferential and secured access. The innovation capabilities guide and enable those resources to be assessed, configured and reconfigured. The innovation processes used to deliver results are the combinations of management and organization around R&D, new product and service development, operations, and commercialization that deliver innovation.

Innovation strategy helps to focus attention on how these resources, capabilities, and processes are best developed and deployed to meet corporate objectives (Dodgson et al., 2008: 96). There are often more opportunities for innovation than resources available, and choices have to be made. Choices should be linked to the anticipated economic benefits and the ability to appropriate returns from innovation. They need to fit with the overall corporate

strategy, deciding whether or not innovation targets complement the firm's available resources and existing innovation portfolio and whether ambitions match its organizational structure and culture. The choices made should include attention to issues of timing; whether, for example, a firm aims to be a proactive innovator or to be a reactive follower. These decisions help to prioritize resource allocation, providing a focus for marshalling and integrating different components of innovation processes and guiding them towards specific markets and customers within the competitive environment (Dodgson et al., 2008: 96-97).

Focus of strategy

There is the need for managers to learn how to build parallel structures and activities that would not only permit these two opposing forces to coexist but would also balance them in some integrative and meaningful way. Typically, such pressures are controlled through formal structures and through formal job assignments to project managers who are then held accountable for the successful completion of product outputs within established schedules and budget constraints. At the same time there must be an "upstream" set of forces that are less concerned with the specific architectures and functionalities of today's products but are more concerned with the various core technologies that might underlie the industry or business environment not only today but also tomorrow. They are, essentially, responsible for the technical health and excellence of the corporation, keeping the company up-to date and technically competitive in their future business areas.

In every technology based organization, the forces that represent this dualism compete with one another for recognition and resources. The conflicts produced by this competition are not necessarily harmful; in fact, they can be very beneficial to the organization in sorting out project priorities and the particular technologies that had to be monitored and pursued, provided there are mechanisms in place to both support and balance these forces. How a firm fashions its strategies towards this dualism depends on its objectives. It is sometimes surprising to learn that not all companies' first and foremost objective is growth. Some companies are established to exploit a short-term opportunity. Other companies, particularly family-run ones, would like to maintain the company at its existing size. At that size the family can manage the operations without having to employ outside help (Trott, 2003: 835-844).

Generally speaking, the more the organization tries to operate only through formal mechanisms of organizational procedures, structures, and controls, the more the organization will move towards a functioning organization that drives out its ability to experiment and work with new technological concept and ideas. More informational organizational designs and processes are therefore needed to influence and support true innovative activity, countering the organization's natural movement towards more efficient production and bureaucratic control (Katz and Allen, 1984: 33-35).

Ensuring an innovative climate

More than ever before, organizations competing in today's world of high technology are faced with the challenges of "dualism" that is, functioning efficiently today while planning and innovating effectively for tomorrow. Not only must these organizations be concerned with the success and market penetration of their current product mix, but they must also be concerned with their long run capability to develop and incorporate in a timely manner the most appropriate technical advancements into future product offerings. Research and development-based corporations, no matter how they are organized, must find ways to internalize both sets of

concerns (Katz and Allen, 1984: 1). In order to enhance the innovation process for the more timely introduction of new technologies into the corporation's product portfolio, the general proposition is that these areas of informal activity need to be managed within R&D setting, strengthening and protecting them from the pressures of the "productive" organization in order to increase the organizations willingness and ability to deal with the many advancements that come along, especially with respect to new areas of technology. It has been found that changes in formal structure are one of the principal tools by which the organization's executives can continue to keep their company atoned to the current and anticipated future problems the company will face.

As Les Vanaiz of Intel Corporation remarked, 'the beauty of this business is that the technology will always change, the organizations, the organizational interfaces, the customer interfaces, the vendor interfaces'. There's always going to be change, because of the technology. To assume that your organization makes sense today, just because it made sense five years ago is really incorrect. An explicit example of frequency of organizational changes can be seen by tracing the organizational changes at Hewlett-Packard (Schoonhoven and Jelinek, 1990: 107). Thus, faced with what is clearly a risky and uncertain process many organizations could be forgiven for deciding not to innovate, even though the possible rewards are attractive. However, that approach of doing nothing is rarely an option, especially in turbulent and rapidly changing sectors of the economy. As Drucker (1985: 52) puts it, "structure is a means for attaining the goals and objectives of an institution". So, the requirement is to create a structure which suits the need of the particular enterprise or institution, while achieving consistency between the various aspects of that structure and being able to adapt it to changing circumstance over time (Child, 1974: 179).

Firms therefore, manage this 'tension' by opting for a structure that fits organizational goals, guarantees flexibility and autonomy to project teams, motivates creative processes and integrates the various project teams with the main-line activities of the firm. Innovations and ideas can come from any part of an organisation. It is not the preserve of the R&D department or marketing. Nor is it merely limited to an employee or customer "suggestion scheme". The sources of innovation are many and varied but they need to be collated, coordinated and well managed as a source of valuable information and are core to the future of an innovative business (project-leaders.net). Innovation, then, is a dynamic process involving the movement and transfer of technologies across internal organizational boundaries. Formal organizational design, on the other hand, is a static concept, describing how to organize collections of activities within well-defined units and reporting relationships, for example, research, advanced development, product development, engineering, quality assurance, etc.

Formal organizational structures tell us what to manage and with whom to interact within certain areas of interdependent activity; they tell us little about how to move information, ideas, and in particular technologies across different organizational areas, divisions, or formal lines of authority. In fact, formal structures tend to separate and differentiate the various organizational groupings, making the movement of ideas and technologies particularly difficult across these groupings especially if there are no compensating integrating mechanisms in place.

And it is in the movement of new technological concepts from research to advanced development and to successful product development that we are particularly interested. The effective organization, therefore, needs to cause the results of R&D to be appropriately transferred. Technically successful R&D, especially if it embraces new radical technologies, is very likely to pose major problems of linkages with the rest of the firm, particularly product development, engineering, manufacturing, marketing, sales, field-service, and so on. A company can do a terrific job of R&D and a terrible job of managing the innovating process overall simply

because the results of R&D have never been fully exploited and successfully moved downstream (Katz and Allen, 1984: 18-19).

Witness, for example, the problems of Xerox where the R&D labs have generated and surfaced many major new advances and approaches only to discover that the company has failed to fully exploit and capture benefit from many of them. Other corporations, on the other hand, have benefited extremely well from Xerox's research activities - so many in fact that some have suggested that Xerox's research facilities should be declared a National resource instead of a resource for Xerox (Fortune Magazine, September, 1983).

A successful innovation culture embraces all aspects of a business and should be managed as effectively and efficiently as any other core business process. To this end, successful innovation companies operate an "Innovation Hub" where all ideas and innovations are collated and coordinated (project-leaders.net). Creative processes and analysis can be used to stimulate new ideas in four basic areas namely business innovation- new business or supply chain models; product or service innovation- new or modified products or ways of providing a service; market innovation- opening a new market or creating a new customer base; and process Innovation- improving or changing internal processes (innovationtools.com). Research has indicated that one of the most important factors in installing an innovation culture within any company is having leaders and teams with ability and commitment. Senior managers need to understand the strategic direction and how innovation can help. They also need to be able to motivate others. Creating a culture of continuous innovation requires leadership and commitment from the board and senior management teams (SMTs). This is a 'must' – a necessary prerequisite for success. It also requires agents of innovation and innovation teams across the organization, champions who will assist a project manager with the implementation and tracking of ideas, innovations and changes. Managers need to constantly look at their part of the business and ask themselves "what are the barriers to being innovative and creative?"

If there are no boundaries and structure to the innovation process then staff confidence is often affected. If there is no method then the chance of success is reduced. Organizations that truly invest in their people and understand the value of their ideas ensure that facilities, equipment, time and resources are organized to help foster ideas and innovations.

This might be, for example, using facilitators to help engender innovation in business meetings, or setting aside 'quiet areas' for people to think through ideas, or even having informal 'coffee breaks' where people in different departments who would not normally meet or socialize get together for a quick break and to chat. There are thousands of ways in which staff and management can do things differently and be encouraged to voice their ideas. However, this often runs contrary to the way in which organizations are usually run and jobs designed. It is a key management responsibility, then, for managers to 'audit' the organization in terms of how friendly it is towards being innovative.

Finally, like any other core discipline, creating an innovation process and installing an innovation culture must be managed and measured on an ongoing basis. Monthly and weekly meetings should focus on the progress and performance of both new ideas and the implementation projects. Issues should have a process by which they are escalated and associated risks managed where appropriate. The performance of the innovation process and the issues raised should drive and inform the next planning process and review of strategy. Performance has to be linked to strategy and measures and key performance indicators (KPIs) set. The frequency of performance measurement is often dependent upon how critical the innovations are to the overall business performance. Performance measurement is intimately linked to the innovation platform used by the organization. It should give managers real time information on how innovations are progressing

and their performance against the selected KPIs (project-leaders.net).

RESEARCH FINDINGS

- 1) The liberalisation and privatisation of Nigeria's telecoms industry has led to competition in the industry.
- 2) Competition has led to the service providers in the telecoms industry striving to outwit each other in value services provision. This has in turn led to innovation in the industry.
- 3) Innovation in the telecoms sector is still in the primary stage because most of the service providers cannot be distinguished in terms of provision of value added services.
- 4) There are also some issues about the regulatory framework which needs to be addressed. For example, interconnectivity, effective competition, institutional strengthening, unreliable electricity supply, consumer education and managing consumer expectation etc.
- 5) Most of the decisions and strategies on innovation in the telecoms industry flow from the top and the management structure in most cases are flat and rigid.

Conclusion

Firms compete successfully when they offer new, better and /or cheaper products and services, which their customers can use to their advantage, and which their competitors cannot provide. Competitive advantage therefore derives from the ability to make and do things cheaper and better, or to make and do new things. It has a relative dimension: advantage is found in the activities of firms compared to their competitors. It also has an absolute dimension: there must be a market for what the firm does. Technological innovation plays a central role in providing comparative and absolute advantages (Dodgson et al., 2008: 2). Innovation in Nigeria's telecoms industry came about as a result of the recent reforms of the past decade in the industry. But, it is still obvious that a lot needs to be done in the area of value-added-services for the consumers. A close look at the services being offered by the service providers shows that most of them provide basically the same kind of services and operate the same kind of management structure and corporate strategies.

Furthermore, most of the service providers do not have designed corporate innovation strategies or processes. There are no agents of innovation and innovation teams across the various organisations, champions who will assist the project manager with the implementation and tracking of ideas, innovations and changes. There is a need for the various service providers to breakdown functional barriers in their various organisations. Furthermore, it is equally important for these organisations to minimise the impact of hierarchies so that a

seamless flow of ideas is possible.

RECOMMENDATIONS

Research has shown that one of the most important factors in installing an innovative culture within any company is having leaders and teams with ability and commitment. Thus, the following recommendations are made:

- 1) There is a need for the management in these organisations to adopt a bottom-up approach instead of the top-down deliberate push that is currently in place.
- 2) Innovation management system must give senior management visibility and control over the innovation process and confidence that best practice tools are being applied appropriately and across the board.
- 3) There should be provision of a work environment of openness built on trust where every member of the team feels free to express their views/opinions without fear of ridicule or reprisal.
- 4) Senior managers need to understand the strategic direction and how innovation can help. They also need to be able to motivate others.
- 5) The various organisations should adopt an integrated approach to managing innovation.

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