KNOWLEDGE BASE: A TECHNOPANACEA FOR WORKPLACE CHALLENGES

Thankgod Chukwuemeka OLOWU, ***acps***
Department of Computer Science and Robotic Education
Federal College of Education (Tech), OMOKU, Rivers State

Abstract

The importance of computer technology as well as knowledge-base in the workplace and nation's economic growth cannot be overemphasized. The improvements of technological innovations have bolstered the competitiveness of the economy by leading to prosperity in the society, and as well as serving as the driving force behind the inexorably rising standards of technological trends in the field of works across the world today. Techno-panacea is a software innovation developed to tackle challenges in the working environment as speedily as possible. Compare with that of human expertise It improves human capital development, public service and investments. This paper examines the impacts of knowledge base as a techno panacea to workplace challenges. It shows that technological innovations have some key roles to play in all the sectors of life and the economy, information and communications technology, infrastructure, agriculture, health, construction, education and energy. These impacts on the key sectors translate to the economic development, improving the living standard, and reducing poverty in such countries. Techno-panacea imbues one with technocratic innovations or skills to solve problems in an organization for the benefits of economic growth. Furthermore, Internet is discussed as a knowledge-base tool used to solve problems in a workplace. It helps the secretaries to store large information and is mostly secure in the cloud. The paper also captures the relevance of expert systems as a computer application that solves complicated problems in the workplace. This aims to use a knowledge-based system to solve complex structured and unstructured information used by a computer system in a work place by the end-users.

Introduction

Solving a problem in a workplace enhances productivity by the secretary or by the end-user of the computer. The availability of data, combined with the computational tools that transform data into usable information, empowers the secretary as the end-user of the system to make quick information and decision that can make the difference between success and failure in the global economy. This is aided by the computational technopanacea tools provided in the workplace against challenges.

Technopanacea is a software innovation developed to tackle challenges in the working environment as speedily as possible compare with that of human expertise which cannot at a prompt respond to tackle such challenges. This technological innovation is a basis for the development of knowledge base system for economic reasons. According to Zhang, Song (2012) that knowledge base technology has played a prominent role in the rapid development of advanced and emerging economics in the society by solving series of problems. Solving problems by using a scientific or technological innovation is a source of economic sustainable increase in a living standards that implies the increased of capital income, good health, better education and as well as good working environment and protection.

A knowledge base (KB) is a technology used to store complex structured and unstructured information used by a computer system. The initial use of the term was in connection with expert systems, which were the first knowledge-based systems. The original use of the term knowledge base was to describe one of the two sub-systems of an expert system. A knowledge-base system consists of a knowledge-based representing facts about the world for solutions and ways of reasoning about those facts to deduce and combats challenges or highlight inconsistencies in the workplace. Proving AI (Artificial Intelligence), a facility explains how a conclusion is reached for resolving complicating challenges in a workplace.

What is really an expert system? An expert system is a computer application that solves complicated problems in a working environment which are normally be solved by human experts. To this effects, to solve expert-level problems, expert systems need access to a substantial domain knowledge base, which must be built as efficiently as possible. They also need to exploit one or more reasoning mechanisms to apply their knowledge to the challenges they are given to solve. They need a mechanism for explaining what they have done to the users who rely on them.

One way to look at expert systems is that they represent applied AI in a very broad sense. They tend to lag several years behind research advances, but because they are tackling major strong challenges in a workplace, they will eventually be able to make use of all kind of results.

Knowledge base is a database system of the computer where virtually all large management information system stores their data or information in some type of hierarchical or relational database. At this point in the history of information technology, the distinction between a database and a knowledge-base was clear and unambiguous to solve problems in the workplace.

A Database has the following Properties

- ❖ Flat data: Data is usually represented in a tabular format with strings or numbers in each field.

- ❖ Multiple users: A conventional database needed to support more than one user or system logged into the same data at the same time.
- ❖ Transactions: An essential requirement for a database is to maintain integrity and consistency among data accessed by concurrent users. These are the so-called ACID properties: Atomicity, Consistency, Isolation, and Durability.
- ❖ Large, long-lived data: A corporate database needed to support not just thousands but hundreds of thousands or more rows of data. Such a database usually needed to persist past the specific uses of any individual program; it needed to store data for years and decades rather than for the life of a program.

The first knowledge-based systems had data needs that were the opposite of these database requirements. An expert system requires structured data. Not just tables with numbers and strings, but pointers to other objects that in-turn have additional pointers.

To solve various problems, expert systems were designed by human experts in the different areas to enhance the decisions made by experts in their own areas. They use appropriate programming language to design the system base on some certain decision making processes following some steps identified by experts to arrive at a decision.

The main aim or objective of the system is to produce a decision better than the one given by the experts in person. Experts in a particular field know their subject matter thoroughly, know how and where to get additional information quickly, if required, can apply the subject matter to a particular challenge and produce a solution, taking into account all facets of the situation. Such expert in various fields were widely consulted for both routine and specialized decisions. Such expert includes:

- ➢ External specialists: Management consultants, solicitors, secretarial professionals, accountants and other professionals.
- ➢ Internal specialists' employees: These are based in management services, personnel or other staff departments.
- ➢ Experienced employees: These are those who have an understanding of particular company rules and procedures.

The ideal representation for a knowledge base is an object model (often called an onotology in artificial intelligence literature) with classes, subclasses and instances.

Early expert systems also had little need for multiple users or the complexity that comes with requiring transactional properties on data. The data for the early expert systems was used to arrive at a specific answer, such as secretarial usage for

typesetting, medical diagnosis, the design of a molecule, or a response to an emergency. Once the solution to the problem is known, there will be no critical demand to store large amounts of data back to a permanent memory store. A more precise statement would be that given the technologies available, researchers compromised and did without these capabilities because they realized they were beyond what could be expected, and they could develop useful solutions to non-trivial problems without them. Even from the beginning, the more astute researchers realized the potential benefits of being able to store, analyze, and reuse knowledge. For example, see the discussion of Corporate Memory in the earliest work of the Knowledge-Based Software Assistant program by Cordell Green (2017).

The volume requirements were also different for a knowledge-based compared to a conventional database. The knowledge-based needed to know facts about the world. For example, to represent the statement that "All secretaries are humans". A database typically could not represent this general knowledge but instead would need to store information about thousands of tables that represented information about the specific secretary who is a human. Representing that all secretaries are humans and being able to reason about any given secretary is a human and that is the work of a knowledge-base, any time you needed the information the system produce it for you. Representing that Nasiru, Rafat, Salisu, Buhari, Oliver, and hundreds of thousands of other APSSON members are all secretarial humans with specific ages, sex, address, etc. is the work for a database.

As expert systems moved from being prototypes to systems deployed in corporate environments the requirements for their data storage rapidly started to overlap with the standard database requirements for multiple, distributed users with support for transactions. Initially, the demand could be seen in two different but competitive markets. From the AI and Object-Oriented communities, object-oriented databases such as Versant emerged. These were systems designed from the ground up to have support for object-oriented capabilities but also to support standard database services as well. On the other hand, the large database vendors such as Oracle added capabilities to their products that provided support for knowledge-based requirements such as class-subclass relations and rules.

Internet as a Knowledge Base for Problem Solving

Internet is another very large knowledge-base where problems are being solved in a workplace. The secretaries being the most users of computers found it very easy to get all its required in the net to solve problems in the workplace. Information is mostly secure in the cloud and other internet database. With the rise of the Internet, documents, hypertext, and multimedia support were now critical for any corporate database. It was no longer enough to support large tables of data or relatively small objects that lived primarily in computer memory. Support for corporate web sites

required persistence and transactions for documents. This created a whole new discipline known as **'web content management'**.

The other driver for document support was the rise of **knowledge management** vendors such as **Lotus Notes**. Knowledge Management actually predated the Internet but with the Internet there was great synergy between the two areas. Knowledge management products adopted the term "knowledge-base" to describe their repositories but the meaning had a big difference. In the case of previous knowledge-based systems, the knowledge was primarily for the use of an automated system, to reason about and draw conclusions about the world. With knowledge management products, the knowledge was primarily meant for humans, for example to serve as a repository of manuals, procedures, policies, best practices, reusable designs and code, etc. In both cases the distinctions between the uses and kinds of systems were ill-defined. As the technology scaled up it was rare to find a system that could really be cleanly classified as knowledge-based in the sense of an expert system that performed automated reasoning and knowledge-based in the sense of knowledge management that provided knowledge in the form of documents and media that could be leveraged by humans. Today's workforce is experiencing a cultural revolution. Shifting demographics, new technologies and changing social norms are all transforming the ways people work. A positive and seamless end-user experience with workplace technology is a competitive advantage for both attracting and retaining top talent. However, IT is experiencing a revolution of its own. The IT department is being tasked with both supporting and growing the business — a tall order not always accounted for in resource allocation. IT leaders must find a way to effectively manage business today while freeing resources to transform the future.

Improve the Secretary (End-User) Experience in Workplace against Challenges

Organizations today have the potential to span five generations of workers. This broad, modern workforce is not only powerful in size, but also in its demands for new ways of working. Digital natives, in particular, expect workplace technology to mirror the ease and familiarity of the technology they use as consumers.

As a whole, 92% of working secretaries said to have the right technology to help them work efficiently directly impacts their job satisfaction, according to a 2016 survey by Ultimate Software.[1]

The ''2018 insight intelligent technology pulse survey report'' reveals that IT professionals recognize the need to "deliver high-quality, seamless IT solutions to keep their employees including the secretaries to engaged with the digital equipment against all odds for productivity." Additionally, IT pros believe they can gain a competitive advantage by improving the secretaries the end-user experience.

Although companies are increasingly aware of the need to create positive user experiences, they often struggle to deliver on those expectations. According to the Insight report, 16% of survey respondents are concerned with the employee experience and other challenges related to accessing competitive technology.

To attract and retain top talent and empower a productive and engaged workforce, you need to close the gap between end-user (secretary) expectations and experiences — without adding a burden on IT. Even with large in-house IT capabilities, the day-to-day operations of device management can be a drain on resources, leaving little room for innovation.

Technology and Innovations

Lionnet (2003) defines innovation as a dynamic technical, economic and social process that involves the interaction of people coming from different horizons, with different perspectives and different motivations. It is a process where a novel idea is brought to the stage where it eventually produces money. Innovation represent a process, or an activity of creating a new product or service, new technological process, new organization, or enhancement of existing product or service, existing technological process and existing organization. Reamer (2014) notes that innovation may or may not include invention, but is the complex process of introducing novel ideas into use or practice and includes entrepreneurship as an integral part, and that innovation is usually considered noteworthy only if it is a commercial success which helps to solve organizational challenges in a workplace. The importance of innovation cannot be over-emphasized as it plays a strategic role in the rapid development of both the advanced and developing nations, although it has been argued that it places increasing demands on finite natural resources which lead to unfavourable climate changes. In economic terms, innovation describes the development and application of ideas and technologies that improve goods and services or make their production more efficient. A classic example of innovation is the development of steam engine technology in the 18th century, which was deployed in factories, enabling mass production, which also revolutionized transportation with the railways. More recently, information technology transformed the way companies produce and sell their goods and services, while opening up new markets and new business models. Thus technological innovation is a part of the total innovation discipline, it focuses specifically on technology and how to embody it successfully in products, services and processes. Technology as a body of knowledge might thus be seen as a building block for technological innovation, serving as cornerstone to research, design, development, manufacturing and marketing. Therefore, secretaries working in these productive organizations, must have the techno-panacea to be functioned and revolutionized in the workforce, utilizing the innovative ideology to tackle challenges in the workplace.

Let's explore four ways you can optimize IT resources to improve the secretaries' experience — and enable a workforce productivity, connected and inspired.

1. Outsource IT services.

In knowledge-base, IT services as a matter of fact is one of the solutions that allow your IT team to focus on business growth by entrusting a secretary to handle the heavy lifting of device deployment for official operations. A secretary who can provide safe workplace services to overcome office challenges and managed the office via solution will simplify your IT from procurement, configuration and testing to deployment, would sustain the growth management of the organization. workplace services are billed on a monthly subscription for a more effective and predictable cost model.

Some benefits of a managed office solution include:

- Reduced support costs and higher return on investment
- Reclaimed IT resources for business-critical projects
- Improved service levels and end-user (secretary) support
- IT governance and scalability

To get the most from your investment, secretary can manage office solution that provides customized Device as a Service (DaaS), cloud applications and comprehensive support. A DaaS solution tailored to individual user needs which can help the secretary deliver the competitive devices workers need while offsetting capital expenses.

A partner who provides hardware, software and cloud applications can also speed deployment with preconfigured and provisioned devices upon delivery to the (secretary) end user.

2. Modernize support.

To stay productive and reduce downtime, your employees need fast resolutions to their technology challenges. As your organization looks for ways to transform IT to improve the secretary experience and keep workers productive, examine your existing IT support model. Are you relying on a legacy ticketing system with a clunky interface? Are you using a traditional support model with a slow Service Level Agreement (SLA)?

Your workforce demands easy, modernized experiences — and they don't mind taking matters into their own hands. Traditional user support models (typewriters and stencils) are often inefficient and expensively outdated to solve or tackle office challenges. High-volume help desk calls bog down IT resources and are often costly to resolve problems. IT leaders have a difficult time controlling costs and balancing IT budget for support and business-critical initiatives.

To keep secretary productive, the IT and other technological devices have to be a focused on innovation to transform your workforce and to sustain the economic growth of the organization with managed services and a "shift left" approach. This means moving issue resolution to the lowest cost level. For example, support level zero drives the end user to a self-help or self-service resolution. Self-service is revolutionizing IT support, and the benefits are in three-folds: ***Secretaries are empowered to find fast resolutions to simple problems or challenges in the workplace, IT teams gain valuable time from the reduction in support tickets, and support costs drop significantly on the devices for end-users***.

On the opposite spectrum, a support level above a three would automatically escalate to field or vendor support.

Operating in-house IT help desk support can be expensive; and with a complex device landscape, having the right levels of expertise which is not always feasible. A managed services solution can be a cost-effective way to provide end users with full support — delivered through a consumer-friendly platform.

3 Support a mobile or remote workforce.
It isn't just the technology that's changing the ways people work. Today's workers prefer constant connectivity and the ability to work remotely. In a study by Soft choice, 85% of respondents said they "feel it's important for their employer to provide technology that enables them to work remotely."
Additionally, 74% would quit their current job for another job at the same salary if they had the option to work remotely more often.

With a "work wherever and however" mindset, the modern workforce has ushered in a complex landscape of devices from desktops to laptops and tablets, and even mobile devices. This proliferation of devices makes lifecycle management and endpoint security a consistent pain point for IT teams. According to the insight intelligent technology pulse survey report, 55% of IT decision-makers rate security among their top three challenges.

In order to run your business smarter, you need to run it safely. That means connecting devices, locations and data security to proactively warding off threats.

However, the various levels of experience needed to manage a diverse mobile landscape aren't practical for most organizations, and assigning mobile management to high-salary IT engineers or other business-critical team members is a misallocation of resources. This is another challenge many organizations are working to resolve.

The Insight report found 81% of chief information and technology officers and 79% of procurement staff agree "balancing resources to maintain infrastructure and grow the business is a pain point for their organization."

To help your business run with confidence, offload the full lifecycle of mobile management to a trusted partner. Working with a partner is a more efficient, cost-effective solution that can help you to:

- Determine the right devices for the needs of your users.
- Create a mobile endpoint strategy.
- Procure, provision and deploy new technology.
- Manage endpoint security and respond to threats.
- Support end users and take the burden off internal IT.
- Manage and refresh devices without disruption.

4. Enable effective collaboration.

Although today's secretaries demand more time away from the office because of their workload, they don't work in isolation. A report by The Economist reveals workers believe effective collaboration has the greatest impact on their creativity and company loyalty.

For much of the workforce, teamwork is a requirement of the job. In fact, the Soft-choice study shows 94% of North American office secretaries whether remote or not — need to collaborate with teammates in order to do their jobs. They share their works online in several occasions. 83% of them use technology to work with remote workers in real time.

Whether your workforce is remote, entirely on-site or a combination, having the right collaboration tools is vital to your organization's productivity and employee satisfaction.

Solutions such as cloud-based unified communications, high-definition audio/video, IP phones, mobile devices and more help unify your workforce and fuel effective collaboration. However, before you implement new technology, it's important to engage your teams to understand how they work and assess the barriers or challenges technology can solve. (Jillian, 2018).

Equipping your organization with technology alone isn't enough. To ensure employee satisfaction, your workforce requires adequate training for a seamless end-user experience and readily available support when technology hiccups occur.

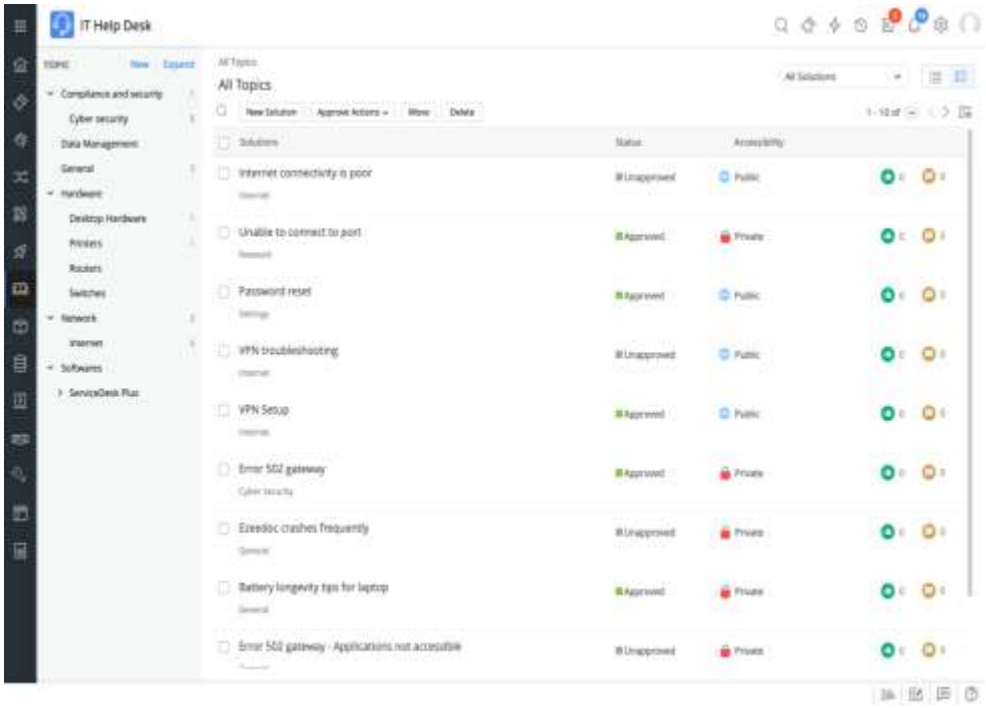
According to the Soft-choice study, "78% of workers who use collaboration technology frequently experience technical difficulties." To reduce ticket volume for internal IT, vet your technology solutions critically and choose a partner who can provide reliable, ongoing support.

Transforming the Secretary's Experience

Your business is only as good as your people. As the market for talent becomes increasingly competitive, you need to create powerful employee experiences that

will attract and retain top talent. Empowering a connected workforce means putting the secretary at the forefront of your IT strategy. By modernizing your technology management, you can improve the secretary experience and drive productivity in the organization via the below scenario:

- Create knowledge rich articles to provide solutions, workarounds, and FAQs
- Include rich text, images, and attachments to the knowledge base content.
- Ensure the quality of knowledge-based content with a streamlined approval mechanism.
- Organize knowledge articles under configurable topics to let end users and technicians easily browse and access.
- Provide advanced keyword search capability and the solutions auto suggest feature to enable end users and technicians to quickly pull out relevant knowledge articles.



Intuitive knowledge base

Conclusion

Over the years, technological innovations which are the basis for the development of knowledge-based economics have always been the major factor in economic growth and human development, as they play a prominent role in the rapid

development of advanced and emerging economics from the workforce. Economic development is a sustainable increase in living standards that implies increased per capita income, better education and health, as well as environmental protection. A requisite economic development theory shows that scientific innovation is the source of economic growth, while the concerns for improving the production of ideas, knowledge, and information are the elements that drive technological innovations. So, employees including secretaries should not hesitate to acquire the technological skills for innovations and the use for solving workplace challenges,

Today's workforce is experiencing a cultural revolution, and anyone including secretarial professionals who do not shift ground to adjust to these computational technological trends will be relegated and kept redundant. Shifting demographics, new technologies and changing social norms are all transforming the ways people work. A positive and seamless end-user experience with workplace technology is a competitive advantage for both attracting and retaining top talent. However, computer technology is experiencing a revolution of its own to solve organizational challenges. The IT department is being tasked with both supporting and growing the business a tall order not always accounted for in resource allocation. IT experts must find a way to effectively manage business today while freeing resources to transform the future. The secretaries can use these following technological tools to tackle Workplace Challenges and improve productivity as technopanacea:

- Use Virtual Private Networks
- Use Video Conferencing Software
- Use a Networked Voice and Data Solution
- Use an Outsourced IT Service Provider
- Use the Cloud
- Use a Scheduling System.

These computational tools aides the secretary and any other end-users to solve problems in the workplace of any organization.

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