WEB CONTENT MANAGEMENT SYSTEM A VIEW AT JUSTTALK COMMUNICATION COMPANY

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ABSTRACT
People agree that maintaining a website is an ongoing task; many are caught off guard by just how quickly the task can grow often ending up being more costly than building it in the first place. As more and more people use website, the number of update can only grow and information that appears out of date could sent customers elsewhere. Paying your site designers a retainer to be available for update is one option, but experience has shown that this becomes extremely frustrating- every change must be explained to someone who is not familiar with the site; charges can rarely de done as quickly as required.
Content management is so important to incorporate into a site; it ensures a quick update of site without affecting any of the graphics or site structures. This means that web site will grow with needs into the future. This content management to also the organizing , categorizing and structuring of information resources (text, images, document, etc) so that they can be stored, published and edited with ease and flexibility. Content management system (CMS) is used to collect, manage and publish contents, storing the content either as components or whole document. It also maintains dynamic links between components.
This entails a combination of a web development software or language which could be macromedia dream we ever and HTML (Hypertext markup language), a server sided scripting language such as Perl pretext preprocessor (PHP) or active server pages (ASP) and a Relative Database management system (RDBMS).

INTRODUCTION
Just Talk Telecommunication is an information Technology firm that load phone credit facilities over the internet. Just Talk employs a system whereby subscriber's private lines can be credited with a specific amount of voice data measured in kilobytes per second (KBPS), which is usually prepaid.
This is done over the internet from the company's website. Each private telephone operators (PTOS) are given a unique – ID for their phone lines. These codes are used to distinguish each PTO from the other. For instance STARCOMS is identified with the code-001 while a network like MULTILINK is identified with -0101 with the system, subscribers of these PTOs.

Network can load their phone lines with enough credit to make international calls at a cheaper rate than they would be charged by the PTO they subscribe to. The just talk telecom has an existing data which is a single database and various problems to come up in structuring of information resources, organizing and in the up grading of the system database. It cost so must for a website designer to design a new page for the site; this is where content management steps in. the term content management covers everything that has to do with information, whether that's producing, processing or presenting it. We live in the information age, and that definition applies to a lot modern activities from printing newspapers to sky writing.

Content Management System and Database
Driven system that has a suite of tools that helps in managing, maintaining and changing the content of a web site. Content management system idea is to take information and organize it that it's easily retrievable, update, flexible in how it how it can be reformatted and retransmitted and searchable.
The phrase ''contented management'' is more often than not used to mean the work that business do with information, usually electronically stored information content stored manually is still content, but only the most pretentious office equipment store would advertise a filling cabinet as a content management system.

When talking about content management it means information handled on a computer system, whether that information is customer orders, press releases or accounts increasingly, content management deals with the information going into and out of a company's website.

Statement of problem
- The major problem associated with TALK TELECOMS website development is paying website designers a retainer fee to be available for update of their site
- There is always occurrence of duplication of phone numbers which is very confusing.
- There is always a manual update of tariff paid by the subscriber.

The website is known to the economy as one of the most influential place where people of various sector of business in life advertise their company or product. The website is also known as a center where vital information is being gotten from. Most content management system (CMS) site are available on a few different level of functionality. Obviously, the ability to update content is shared by all system but some other features that content management site can differ are as follows

- Access rights management and content approval
- Dual or multi-lingual functionality
- Dynamics site maps
- E-commerce
- Email alerts
- Form creation and management
- Image optimization and processing
- Meta-tag updating
- Search functionality
- Site security standards and accessibility compliance
- Statistical reports

There are wide ranges of business benefits that can be obtained by implementing a (CMS) content management system website which includes the following:

- Streamlined authoring process
- Faster turnover time for new pages and changes
- Greater consistency
- Improved site navigation
- Increased site flexibility
- Reduced duplication of information
- Greater capacity for growth
- Reduced site maintenance costs

Beyond these, the greatest benefit (CMS) can provide and support business goals and strategies

For example, the (CMS) content management can help to improve sales, increase user satisfaction or assist in communicating with the public.

Consistency of appearance; unlike a web editing program like Dream-weaver front page or go live, a CMS store the text separately from the presentation of the content. This means when a visitor comes to a web page, the CMS is pulling the various parts and pieces of the page from a database and dynamically generating it. CMS use templates to ensure pages display consistently across the site-even if different people are managing the site. People from various departments who manage a site cannot charge the overall look and fell.

Sharing content: because content is in database it is not tiedto a single page .contentcan be shared among various web editors and the "owner" of the content can be the one to update it and that change is made automatically on all websites using that piece of content

Repurposing content: Again, because the content is in pieces, it can be easily rearranged and displayed in a variety of ways for a variety of media. For example templates can be created to display the same info on a web page that is displayed for a PDA or for a plain text web page.

Publish and Expire date: multiple people can work on a web site at once. Web site editors simply have to go to a login screen on Microsoft Explorer and edit their pages directly from this. Users do not need to know html or have any graphic design experience. This work is handled by programmer and designers on the back end.

Workflow management: with so many people updating a web site, the workflow system allows information to be put into the system and then edited/proofread before it goes live.
A confidentiality as Merton and Nisbet explained that confidentiality is the process of securing the data by keeping it private any secret so that only authorized users are able to access and interpret the content of the data.
 Authentication can be used to provide an identity proof of the user of the information in the websites.
Integrity: was explained as a process in which data should be ensured. It also ensures that no unauthorized person is able to modify the contents of the data. Indeed in a study of information modification by Auderson 1989, he defined information as a source which proven to be true and vital to its sources. It also explained the most definite reasons for modifying information are as stated:-
Spreading rumors: Hackers can modify the contents of your website or any website to spread false rumors.

Underling organization effectiveness: he went further to explain database contain important information which has a direct affect on the overall effectiveness of an organization. This data is the basis for all future planning. If the content of the database is modified, then it can affect the present as well as the future works. Therefore to undermine the effectiveness of an organization, hawkers can either enter false data or modify the contents of the already existing data.
Walsh (1995) summaries that the unauthorized modifications to the contents of a website has become a widespread menace. It has been commonly used for spreading propaganda, misinformation and rumors. The website of some organization isdefiled by their rivals or competitors.
Walsh went ahead to show how to overcome this menace. An organization needs to do the following:
- Make their servers as read-only
- Separate their web servers from application and database server
- Implement a strong authenticate mechanism

Before going into detail of how contents management system (CMS) have impacted and influenced the development of business sector in the economy; it will be necessary to have background knowledge on website development and its usefulness.

Invention of World Wide Web
The basic functionality of the web can be understood in terms of large collection of independently operated server. It can simply be describe as server in which clients tends to make request to. The client could be referred as web browser. A web browser is more than a graphical interface capable of issuing remote procedure or using protocol to establish a connection to a server by which to the a file can be downloaded. Each request made to the server has a timeout. If the internet today plays an important role in the economy espercial in the commerce sector where internet is being aggressively pursued by companies. The internet is known as one of the vast research environment for information, direct purchase and sales between companies. It also provides employment to society of unemployed people.

Functionality of Content Management System
The functionality of a content management system can be broken down into several main categories:
- Content creation
- Content management
- Publishing
- Presentation

Content Creation:

At the front of a content management system is an easy to use authoring environment designed to work like word. This provides a non-technical way of creating new pages or updating content without having to know any HTML (Hypertext Markup Language).

It also allows the managing of the structure of the site, that is where the Pages go and how they are linked together. Almost all content management system now provide a web-based authoring environment which further simplifies implementation and allows content updating to be done remotely. It is this authoring to that is the key to the success of the CMS.

Content Management

Once a page has been created, it issaved into central repository in the CMS. This stores all the content of the site, along with the other supporting details. This central repository allows a range of useful features to be provided by the CMS keeping track of all the versions of a page and who changed what and when. Ensuring that each user can only change the section of the site they are responsible for integration with information sources and 11 systems. Most importantly, the CMS provide a range of workflow capabilities for instance in a business environment when a page is created by a author, it is automatically sent to the manager for approval and then the central web term for their editorial review. It is finally sent to the legal term for their sign-off, before being automatically published to the site.

At each step, the CMS manages the status of the page, notifying the people involved and escalating jobs where required. In this way, the workflow capabilities allow more authors to be involved in the managements of the site, while maintaining strict control over the quality, accuracy and consistency of the information.

Publishing

Once the final content is in the repository, it can be published out either the website or internet.Content management system boast powerful publishing engines which allow the appearance and page layout of the site to be applied automatically during publishing.

Presentation

The content management system can also provide a number of features to enhance the quality and effectiveness of the site itself. An example, the CMS will build the site navigation for you by reading the structure straight out of the content repository. It also makes it easy to support multiple browsers or users with accessibilities issues. The CMS can be used to make site dynamic and interactive, thereby enhancing the site's impact.

CONTENT MANAGEMENT SYSTEM AND ORGANIZATION

The concept of web content management covers everything from an airline's online booking system to a university archives. But its not just large companies and institutions that need good web content management, small business need to employ good practice just a much. These are some tips for good web content management on a smaller scale.

Storage space:

A web space is needed somewhere to host web pages online. How much online storage space needed depends on how much information is need to include on the site, the reason why the web is being created.

Hosting

Many ISPS I internet service providers) offer between 5MB and 15MB of web space free to their customers. However, most ISPS recoup their cost for the "free" services by placing banner advertisement on their customers' pages. This can be disturbing for the customers, so companies that want a professional, streamlined look for their sites usually end up for hosting . Many hosting providers offer discounts on domain names when you buy the hosting shop around and ask many people as possible for hosting recommendations before making your decision.

Offline storage
Webpage need to have offline equivalents and back-ups. A complex, searchable site will be powered by a sturdy database, but even the simplest web page will be stored offline fad. Then, if the worst happens and your hosting company loses all your files in a server crash, you will be able to reload them.

Design
The golden rule for a small business is to keep it simple. Simple clutter-free site is much better than an over-designed fussy-looking one.

Exiting System of Telecommunication
Telecommunication refers to long-distance communication (the Greek for Tele means "far of"). At present, such communication is carried out with the aid of electronic equipment such as the Radio, Telegraphy, Telephone and Television. In earlier time s however, smoke signals, drums, light beacons and various forms of semaphore were used for the same purpose. The information that is transmitted can be in the form of voice, symbols, pictures or data or a combination of these. The physical equipment for a telecommunications system includes a transmitter, one or more receivers and a channelor means of communication such as air, water, wire, cable communication satellite or some combination of these. Loading of phone lines has always being done with the use of credit on a paper securities which are emended on these cards are less, any one can easily retrieved these numbers and exhaust the credit on it. There are instants of missing credit cards, expiring of valid card and blocking of lines on the process when trying to load credit cards. This is the purpose of the present system which will eliminate the problem.

System Analysis:
There is need for a proper diagnosis of the present system: its functions, schema and short falls. This is an important aspect of the design of the new system, because the analysis of the existing system id needed for proper implementation of the new system.
The service of a system analyst is needed to adequately analyze the existing system. Sometimes, the programmer himself may assume this function. The analyst goes the extra mile of seeking information from the users of the existing system. The analyst then gathers all user inputs and relates them programmatically to the programmer who does the final program implementation.

Analysis of the Existing System:
System life circle:
A system life circle is determined by the following procedures:
- Preliminary study
- Feasibility study Technical feasibility and economic feasibility
- Source of data
- Description of the present system.

Preliminary study:
At present the system operating in Just talk telecommunication is a Microsoft access based database of records. Though a relational database system but needs to be redesigned to be implemented as a web program. The new system is design to help secure a good and trusted web based software that helps to process record insertion, update and modification of customers records. This is implemented with the use of the content management system.

Feasibility study:

There is need for a proper study of the system to determine how feasible the new system can before committing resource to the implementation of such project. Judging from the resource committed to the existing system and the fields and entities comprising the system.

Technical Feasibility:
At this stage, it is very important to determine if the proposed system can be technically achieved in terms of availability of hardware components and software development tools. The software and hardware requirement of the proposed system are ones that are easily accessible from the local hardware and **software vendors.**

Economic Feasibility:
The economic feasibility of the proposed system must be considered in term of the financial strength of just talk telecom in purchasing the new software and hardware components. Also, the new system must be a good investment and yield optional profits.

Source of Data
Data which are used on this research work were obtained from Just talk telecommunication company Ikeja.

Facts finding by interview:
This involved meeting the staff of just talk telecommunication and asking relevant questions in understanding the present system

Personal observation:
More often than not, answers gotten from staff are inadequate in the understanding the system, this makes it necessary for personal observation. I noticed that they had an impressive working environment and that their data base was excel application and the front page is HTML.

Description of the Present system:
At present, Just talk telecom operations are based on a database of customer implementation with Microsoft access on a local personal computer. A central database comprising of 3 tables. Each of these tables performs different function.

The tables are:
→ customer- into table
→ New- Accounts table
→ Account table
→ Staff table

Customer-INFOR Table
The customer-infor table contains field such as customer's name, phone number, address, account types and account balance.
Here user's account balances are added or subtracted depending on the user's prompt payment of his/her tariffs. User's address are added, deleted or updated as required.

Tariff table:
This table contains a detailed list of destination and their corresponding rates. These values are usually modified or edited and updated at intervals as the rates charges, on the tariff bills of each call per seconds or minutes made over the phone via the internet.

New account table:

This contains fields that allow for insertion of a new records such as name, phone numbe4r, address, account type and amount via the internet.

Account table:
This table allows for checking and modification of an existing account fields such as accounted, reload date, reload amount balance and marketers name. All these are modified in this table.

Staff table:
This table holds a list of the staff currently under the name of the company. This table allows for user authentication, modification of staff information.

Problems of the Existing System:
The following bottlenecks are detected while analyzing existimg system of the Just talk telecommunication.

Redundancy:
During the analysis of the existing system, the researcher found out that various staff could access the system and this has led to fraud and it has also led to an inadequate account of phone number and customers over the network.

Poor Database up Grading:
The existing database of system uses a Microsoft excel which is not a durable database and error do occur during installation of data and repetition of phone numbers.

Failure of Network:
Just talk telecommunication is one that requires an internet presence because there is always need for internet or ISP (internet service provided) to help in checking customers account.

Poor Database Administrator:
The network administrator has no knowledge of programming and there is always mistake in loading, editing, reloading of phone number.

Analysis and Design:
Personnel interviews and personal observation and procedural manual, it is evident that Just talk telecom present system has to be resigned to grant it an internet presence and improve it operations. The system design will include input/output and segmenting these into the program.

Scope and Stages of the Design
Includes logging in authorized password, loading phone number, crediting an account of a phone line, editing of account. The stages following the step are:
→ **Input** → **File organization** → **Output**
For the purpose of this work, a relational database will be used. A relational database is a database system in which a field in database is related to another field in a separate database. In this case Microsoft access is used. This is achieved by first creating the database using Microsoft access before field are related. Relational database are exceptionally good because they eliminate the problems associated with data duplication and redundancy.

Input Design:

Input is simple data or information that will be fed into the system from the keyboard to produce the deserved output. In the design of the new system, the input to the system is accepted through a user-friendly webpage and database.

FIELD/S/N	FIELD NAME	FIELD TYPE	FIELD WIDTH
1	Account number	TEXT	15
	Last Name	TAXT	20
	First Name	TEXT	20
	Date of Birth	TEXT	10
	Company	TEXT	20
	Address	TEXT	20
	City	TEXT	15
	State	TEXT	15
	Country	TEXT	15
	Zip code	TEXT	10
	Telephone	NUMBER	11
	E-mail	TEXT	20

Output:
This is simply the form which the output (result or will take from the proposed system) the output is normally in the form of a report. The report model would be daily and monthly report. Also, output will be a customer's statement of account, the total credit and the number of calls made on a daily report is generated based on the query instituted.

Program Platform (Program Justification)
The development platform for this program shall be Hypertext markup language (HTML) for the web design and a server sided scripting language such as active server pages (ASP VB Scrip). However the program is developed in such a way that is machine independent and when installed in any computer it will run. Hypertext markup language (HTML), active server pages (ASP VB Script) as chosen because they are user friendly, interactive and object-oriented software that can be used by almost anybody. Secondly, it is a very good programming language for developing website and also deals with database management.

Program Design:
The design method used here allows a logical flow of the program and to create room for easy error detection if there be any error. The program is developed to be a web based and menu driven with each menu leading the user to a sub menu. It also supports the use of a mouse.
The structured chart shows the interrelation of program execution. It shows that at any point in time the program can only exist through the main menu. A menu is a list of computer function appearing on the screen for the selection of any operation by the user.it may be in words, pictures or icons.

Implementation of the New System:
Planning and doing are separate parts of the same job and not   separate jobs. No work can be performed exclusively unless it contained bother elements. One cannot plan exclusively all the time. One cannot do only without a trace of planning his job, else the worker dies not the control he needs. Advocating a divorce of the two is like demanding that swallowing food and digesting at be carried out in separate bodies. In essence whatever plan been carried out will be what implementation stage there are several activities in the implementation of the new system. These include
- Testing of the program
- File conversion
- Training of personnel

Testing of the Program:
At the end of the system analysis stage, the programmer is given a program specification, which then aids in the design of the new system. After the program has been developed, there is need to test for reliability and accuracy of the output. This may require debugging.

File Conversion:
At the design and testing of the new system, it is expedient to change over to the new system.

Training of Personnel:
People by nature are afraid of changes they do not understand, so in a bid to eliminate this fear, a training session must be organized. The training section should be organized to handle the following functions. An orientation and the importance of the new system as compared to the old.

Parallel Change over:
This is a situation where the two systems: the existing and new runs together sides by sides. The aim is to compare the result of the new system along side with the existing one to ensure that they are the scrim and any differences should be improvement on the old one.

Phase Change over:
The phase change over involves implementing new system from department to another. It is dependent on the immediate need of the new system in such area.

Direct Change over:
The direct change over arises where the new system is implemented directly testing and certification.

Pilot Change over:
In this case, sample transaction may be operated in parallel with the existing system followed by direct changeover of the remaining application. However, the parallel change over method will be used in this case, it will avail the programmer the opportunity of comparing outputs and ensure accuracy. It would enable the detention of possible errors (Bubs), which may not be detected at design time and testing stage.

Documentation and Implementation:
Documentation is very vital in the design and development of any new. This is to create a proper guide to whoever may use new system in the headrest future. It is simply a set of written description and explanation of a program for an organized data processing system. We have system documentation and program documentation.
System documentation is a detained instruction written by a system analyst on the functionality of the system and how to update and manage the new system. Without this, it may be difficult to understand the functionality of the new system in terms of updating it when the need arise. This may cause time and resource wastage.

System Requirement/ Configurations:
This include both hardware and software requirement.

Hardware/Technical Requirements:
   a. The system (computer) be IBM or compatible done with 487 or higher processor
   b. A minimum of 16 megabytes of memory
   c. The display should be VGA.
       Minimum hard disk space is 520 megabytes (A hard disk 3.4 GB or higher capacity will be better)
   d. A standard window 98 compatible keyboard
   e. A mouse

Software Requirements:
Windows Operating system Macromedia Dream Weaver and ASP (VB scripts)

Operating menu
The operation module is the user manual. It is designed in a user-friendly manner. The program has a login screen.

Password:
There are basically three types of accounting transaction considered namely:
Deposit, withdrawal, edit of the account.
To be able to operate the program the user should fill in the following data
First name
Last name
Address
State
City
Nationality
E-mail Address
Postal Address/Zip Code
Date of Birth
Telephone Number
Fax

Conclusion
I would like to conclude that the research work if properly handled and used to its maximum capability will definitely benefit both the organization. It also creates a new door to easier and faster web site designing and programming.

Recommendation
We are in an age where the need for information technology cannot be over emphasized with the advent of Voice Internet protocol (VOIP). It is therefore important for the society to be sensitized about the many advantages of transferring packages over the website if wish to survive in the competitive world we find ourselves.

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