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Implementing Cloud Education Based on a Government Community Hybrid Model

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The advantages of cloud computing technology are created by the government community hybrid model for education services in offering optimism about information and communication technology infrastructures and resource sharing, provides widely used education services, deployment and feasibility of devices and flexibility of time and place for users, and increase participation from the public and private sector as well as collaboration with government. The purpose of this study is to find models in the learning process in accordance with the character and advantages of this technology with the main role of government to operate, as well as look for relationship between schools, government and society. The research method is qualitative by conducting a literature study and also discussing it with experts. The results of this study consist of the model of the learning process, the implementation strategy and roadmap technology.

Key words: *Cloud education, learning management system, hybrid, architecture, government.*

Introduction

Cloud computing has become a popular topic for discussion, as it offers users access to information as needed by equipment, anytime, anywhere via the internet with a simplified user interface (Chiu, 2008). Cloud computing provides infrastructure sharing, even more resources can be added for more services, yet costs will not change significantly, which is why cloud computing has become a hot trend in the structure of information technology (IT) currently used in many fields. Cloud computing is the utilisation of vacant resources of

computers to increase efficiency through improving utilisation rate and reducing energy consumption, one of the solutions to reducing the greenhouse effect (Zhang et al., 2010).

Various cloud architectures have been implemented in several fields. Cloud architecture can also be tailor-made and used according to user requirements. The cloud platform has been proved significant in the development of various sectors, with the integration of required features with existing technology to present a new innovation in the cloud architecture (Dutta, Peng, and Choudhary, 2013; Eunjeong, 2013). There are various uses of cloud that provide scope for implementing data collection and distribution on a wide platform. Apart from data processing, cloud presents the platform for application and software development along with online usage over a wide range of domains.

Cloud computing technologies enable users who don't have the technical expertise to operate their own infrastructure and to get access to computing on demand. Cloud computing makes it possible for almost anyone to deploy tools that can scale and serve on-demand as desired. Service providers provide greatly simplified software installation, maintenance, and centralised control over versioning. Users can access service anytime, anywhere, share data and collaborate more easily, as well as keep their data stored safely in the infrastructure. For the end-user, cloud supporting is invisible, as the technology that supports the applications doesn't matter for them. For numerous institutions, cloud computing offers a cost-effective solution to the problem of how to provide services, data storage, and computing power to a growing number of internet users without investing capital in physical machines that need to be maintained and upgraded on-site (Al-Zoube, 2009). Since the invention of the implementation, there has been constant growth in cloud development and management. IT companies and other organisations are taking various steps to increase cloud computing techniques (Zota and Fratila, 2013).

Based on Chandran and Kempegowda (2010), in recent years, there has been an increase in the use of electronic devices to access e-learning content depending on (i) increase in broadband width, affordable cost of computer or handheld devices; (ii) due to low enrolment and budget cuts, educational institutions such as Universities and TAFE colleges are offering some of their courses on-line; (iii) the aging population's educational needs, to access materials anytime anywhere has also fuelled the growth of e-learning; and (iv) the recognition of online education degrees offered by Institutions has a great impetus on foreign nationals taking up such courses.

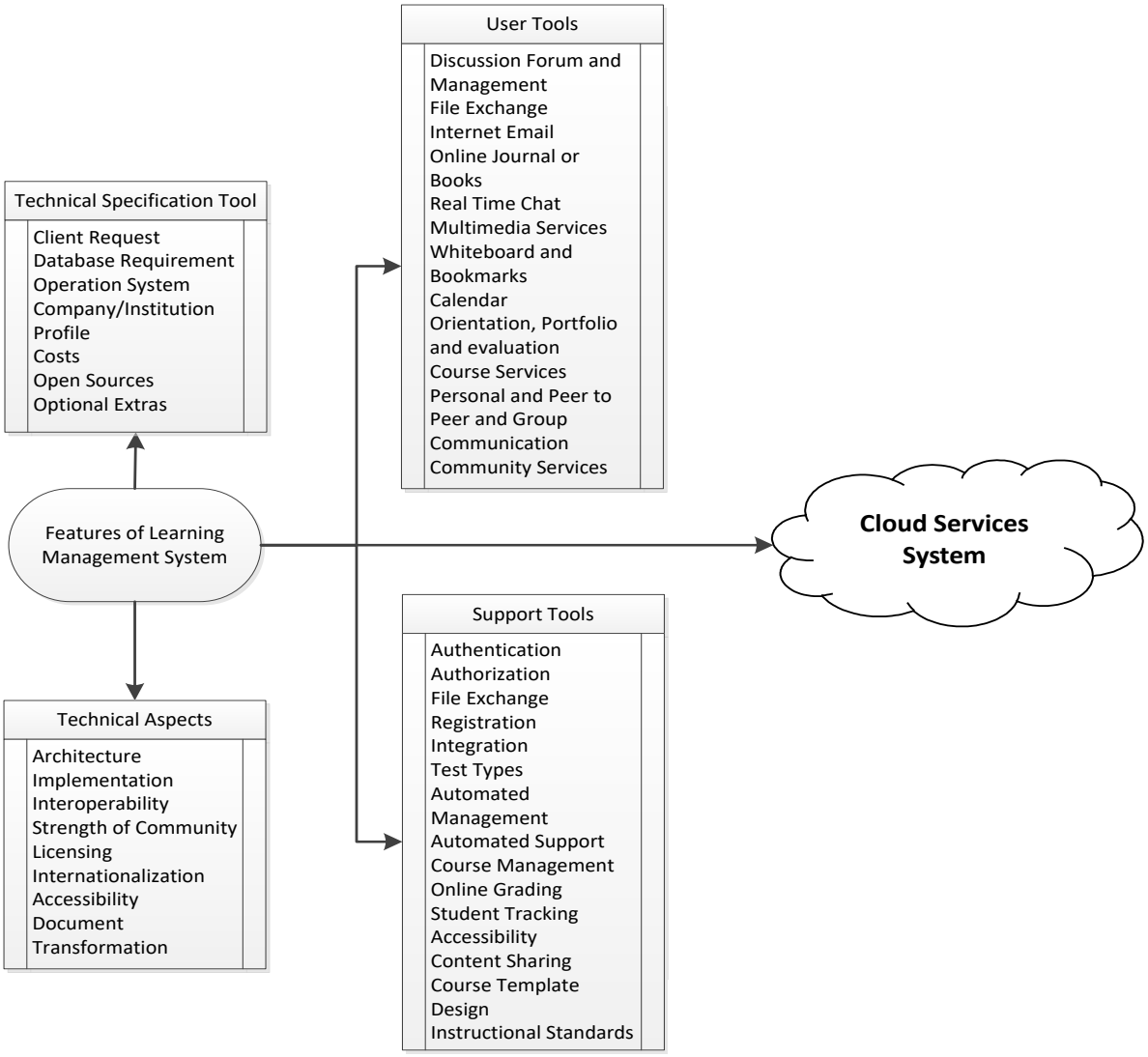
Table 1 shows the difference between traditional and cloud computing e-learning. Traditional Distance Learning (DL) or e-learning systems have limited synergistic capabilities due to lack of reusability, portability and interoperability. Cloud computing emerges and becomes a solution. Cloud is a metaphor to describe the web as a space where computing has been pre-

installed and provides a service: data, operating systems, applications, storage and processing power exist on the web ready to be shared. The emergence of information and communication technology in education such as cloud computing creates numerous applications for learning management systems (LMS) (Figure 1). LMS is used for supporting cognitive processes and psychological education aspects and the instruction process of learning can be used in various ways, e.g. as a tool enhancing the face-to-face process of teaching/learning, as an administration tool, and also for creating an educational environment where the process of instruction is managed by an ICT system.

Table 1: Differential Traditional E-learning and Cloud E-learning

Indicators	**Learning Method**	
	Traditional E-learning	**Cloud Computing E-learning**
Learning Resources	Knowledge from education system based on internet	Knowledge from education system, independence of teacher and student for learning based on internet
Added Learning Resources	Books, manual, learning material in audio and video usage	Books, manual, learning material in rich multimedia usage
Sharing Resources	Teacher to student, teacher to teacher, and student to student by using the Internet	Teacher to student, teacher to teacher, and student to student by using the Internet with high flexibility, feasibility and integration of resources
Learning Process	System and Teacher as central learning	Student as central learning and independent arrangement as needed
Evaluation System	System and teacher responsible for final evaluation	System and teacher responsible for final evaluation
Quality of Education	Depends on quality of knowledge sources based on electronic and didactic skills.	Depends on quality of knowledge sources based on electronic and didactic skills.
Customisation	Mostly only by education system	Combined by student, teacher and education system

Figure 1. Features of Learning Management System

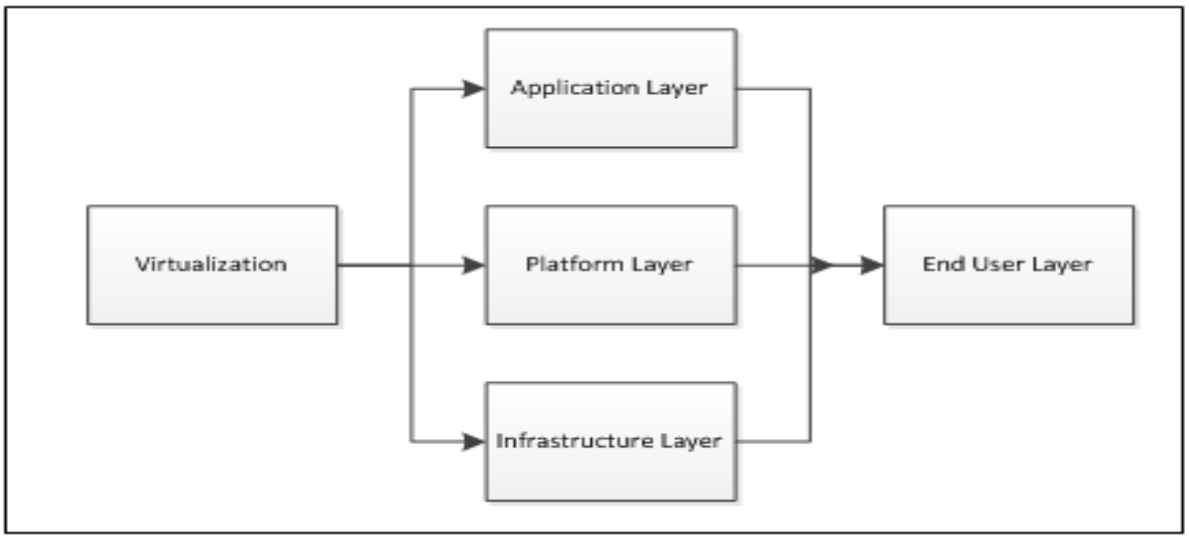


Based on the above, by looking at the potential of cloud computing to answer the challenges of education in the future, this research seeks to propose the ideal model of cloud computing that can be used in the education field and at the same time its implementation. This paper is organised as follows: section 1 discusses current issues about cloud computing for Education, E-learning management system and its features. Section 2 explains the main types of cloud education, discusses the concept of cloud computing, its theory and characteristic, and the cloud educational system. Section 3 examines the Government-Community Cloud Educational System and organising methods of learning resources;; section 4 examines implementation issues and section 5 makes some conclusive remarks.

Main Typical Architecture of Cloud Education

Cloud computing evolved from Application Service Providers (ASP) (Ercan, 2010) based on Service Oriented Architecture (SOA), where the software applications can be dynamically configured to utilise the best breed of application in the market place. Cloud underpinning technologies are virtualisation, Software as a Service (SaaS) (Boniface et. al., 2010; Tsai, Sun and Balasooriya, 2010), and broadband width or 3G mobile networks (Figure 2).

Figure 2. The Basic Cloud Computing Framework



Cloud Computing Characteristic and Advantages

Cloud computing has essential characteristics (Noor et al., 2013). These include (i) *on-demand self-service*, where a user can unilaterally provision computing capabilities, server time and network storage as needed without requiring human interaction with each service provider; (ii) *broad network access* capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., tablets, laptops, mobile phones, and workstations; (iii) *resource pooling*, the provider's computing resources are pooled to serve multiple consumers using a multitenant model, with various physical and virtual resources dynamically assigned and reassigned according to consumer demand. There is a sense of location independence in that the customer generally has no control or knowledge over the exact location of the provided resource but may be able to specify location at a higher level of abstraction (e.g., country, state, or data centre). Examples of resources include storage, processing, memory, and network bandwidth; (iv) r*apid elasticity*, capabilities can be easily provisioned and released, in some cases automatically, to scale rapidly outward and inward commensurate with demand. To the consumer, the capabilities available for provisioning often appear to be

unlimited and can be appropriated in any quantity at any time and (v) m*easured service*, cloud systems automatically control and optimise resource use by leveraging a metering capability at some level of abstraction appropriate to the type of service (e.g., processing, storage, bandwidth, and active user accounts). Resource usage can be monitored, controlled, and reported, providing transparency for both the provider and consumer of the utilised service.

From the essential and architecture characteristics (Table 2), cloud computing presents new features of excellence service characteristics (Zhao, Wang and Yang, 2011), i.e.: (i) *virtualisation* makes users obtain services from anywhere at anytime by using all kinds of terminals and devices, the resources requested are from "cloud" but not a fixed and shaped entity because the applications are executed somewhere else. Therefore, users do not need to know about the location, they just need the devices such as notebooks and mobile phone to realise what is required; (ii) *high reliability*, the "cloud" measurement applies multi-copy data fault-tolerant and computing node double replacement to guarantee high reliability of service, so that using cloud computing is more reliable than using local computer; (iii) *versatility***,** cloud computing is not directed against particular application, with the support of ""cloud" you can make tens of thousands of applications, and support different applications concurrently; (iv) *high expandability*, the scale of "cloud" can be adjusted dynamically to meet the needs of increased scale of applications and users; (v) *service on demand*, t "cloud" is just like a big pool of resources, you can buy what you want and "cloud" can be provided as a service or billed just like water, electricity and gas; (vi) *extremely cheap***,** we can build "cloud" by using extremely cheap node due to the special fault-tolerant measures of cloud. Automatic and central management allow lots of enterprises to be free from the high cost of data centres, the versatility of cloud helps the utilisation ratio of resources increase much higher than the traditional system.

Table 2: Characteristics of Cloud Architecture

Cloud Architecture Categories	**Characteristics**
Software as a Service (SaaS), software delivery model providing access to applications through the Internet as a web-based service.	• The software is made available through the Internet. • The Software is maintained by the service provider. • The license to the software is based on subscription or usage and billed on a recurring basis. • Zero maintenance is required at the end-user side and hence SaaS applications are very cost effective. • Software is available on demand and can be

	scaled up and down according to demand. • Software is upgraded and updated automatically and also supports multitenant.
Platform as a Service (PaaS), solutions constitute the middleware on top of which applications are built and provide a development and deployment platform for running applications on the cloud.	• Built-in security, scalability, and web service interfaces are provided by PaaS. • Built-in tools for defining business rules and workflow and approval processes are provided by PaaS. • Integration of applications with other applications on the same platform is easy. • PaaS provides web service interfaces which enable us to connect the applications outside the platform.
Infrastructure as a Service (IaaS), solutions are most popular and developed market segment of cloud computing. IaaS solutions bring all the benefits of hardware virtualisation.	• IaaS provides virtual machines with pre-installed Operating Systems. • Resources are available On-demand. • IaaS allows storing copies of data in different locations. • Computing resources in Cloud can be easily scaled up and down.

In order to develop enterprise-wide applications and services, a comprehensive viewpoint has to be assumed with deployment models. There are four common deployment models: (i)) *public cloud*, infrastructures, and premises of this model are under control provider. The general public or a large industry group can access cloud services for usage, on a pay according to usage method. Users are allocated resources in Cloud on-demand and provided on a dynamic basis over the Internet. Small and medium enterprises (SMEs) greatly benefit from using public Clouds. This model also has advantages such as location independence, cost-effectiveness, reliability, flexibility, utility-style costing and high scalability. However, there are also dis-advantage such as low security and less customisability; (ii) *private cloud*, the infrastructure of private cloud model operates solely for an Organisation. It can be managed by the Organisation itself or a third party and can exist on or off-premises. The advantages of private Clouds include higher security and more privacy, more control, cost, and energy efficiency while disadvantages are limited scalability due to limited resources, inflexible pricing and private cloud being limited to a particular area; (iii) *community cloud*, cloud infrastructure in a community cloud is shared by several Organisations which have shared concerns (e.g., mission, security requirements, policy and compliance considerations). It is generally managed by Organisations in the community or a third party and can be

present either on or off-premises. The advantages of Community Clouds are that they are more secure than public Clouds and share resources amongst several Organisations while disadvantages are that it is less secure than private Cloud and requires governing policies for administration; and (d) *Hybrid Cloud* hybrid cloud infrastructure is a composition of two or more clouds (private, community, or public). Each remains as a unique entity but linked together by standardised or proprietary technology. This technology enables data and application portability. The advantages of this model are scalability, flexibility, cost-efficiency and security, while include networking issues and security compliances.

Architecture Cloud Education System

a. Cloud Education System (CED)

Cloud computing brings flexibility and feasibility in the classroom with their its characteristics. There are two options, to use the advantages of this technology in the education system or let it develop outside it. If it can be brought to the system, it can be managed for our educational goal, i.e. acceleration of education quality and called Cloud Educational System (CES) (Liu et al., 2010).

CES refers to cloud computing being used for the educational system. There are three cloud educational systems:: (i) centralised cloud educational system links numerous school data centres which become scattered but close with large enterprise cloud data centres. Therefore, schools can directly use the free Cloud service or develop practical services based on an open platform; (ii) distributed cloud educational system, numerous school data centres are directly connected with each other, but not directly with large enterprise data centres. Each school can stride over a large enterprise data centre and set up its own data centre with available resources (e.g., hardware, software, human resources and so on). In addition, to supply abundant information for instructors, school data can centres join and share educational resources. Services for instructors mainly include storage. resource, platform and software service; (iii) hybrid cloud educational system, where school data centres, and many large enterprises are significantly interrelated and directly connected, one school can share information resources with others and make use of many services from other enterprises.

For current e-learning architecture, the research presents the Hybrid Instructional Model as a blend of traditional classroom and online education and its customisation n for e-learning applications running on Cloud computing infrastructure (Chandran and Kempegowda, 2010). Learners still need to attend the class and be able to access courseware through e-learning. This combination makes the best use of both and helps learners shift from classroom training to e-learning mode. Users and stakeholders are able to adapt to use services in this hybrid model with a smooth transition in skill, resources, environment, culture and motivation as needed.

Learning Resources Organising Method

Table 3 shows the advantages of cloud computing for educational resources. The main goal of cloud computing for education services is effectiveness and efficiency of educational resources for education services. It shows that Cloud computing can provide safety, stability and ease to expand and integrate the platform of application education services.

Table 3: The Benefit of Cloud Computing for Educational Resources

Education Resources	**Benefits**
Institution	Optimising resource allocation, decreasing the need for in-house IT staff, and short implementation process
Teacher and Student	Raises computing resource accessibility and availability, even in underserved districts and adds mobility
Administrator	Standardising applications and processes, provisioning software, resources and management of data, and lightens the burden of software version control
Module, books and curriculum	Increasing availability and integrity of data, applications and research/learning materials, making delivery schedule of assignment instructions, study materials, syllabi or software, and large capacity
Infrastructure and technology	Based on the Internet, brings greater virtualisation to Amplifies application & computing performance, to reduce client application and system resource footprint, improving server and data storage capacity, to raises server utilisation and software licenses, reducing purchasing requirements.
User and Institution	Cutting resource management and infrastructure costs (hardware, application) including power and cooling

A new concept of learning based on the Cloud computing environment is proposed, where researchers build learning resource organising method based on Cloud. This model consists of three sections: (i) the learning process; (ii) publication and socialisation; (iii) supporting the learning section.

In the beginning, the Government and provider help to develop Cloud architecture for the Cloud Education System. Cloud architecture will provide education services for

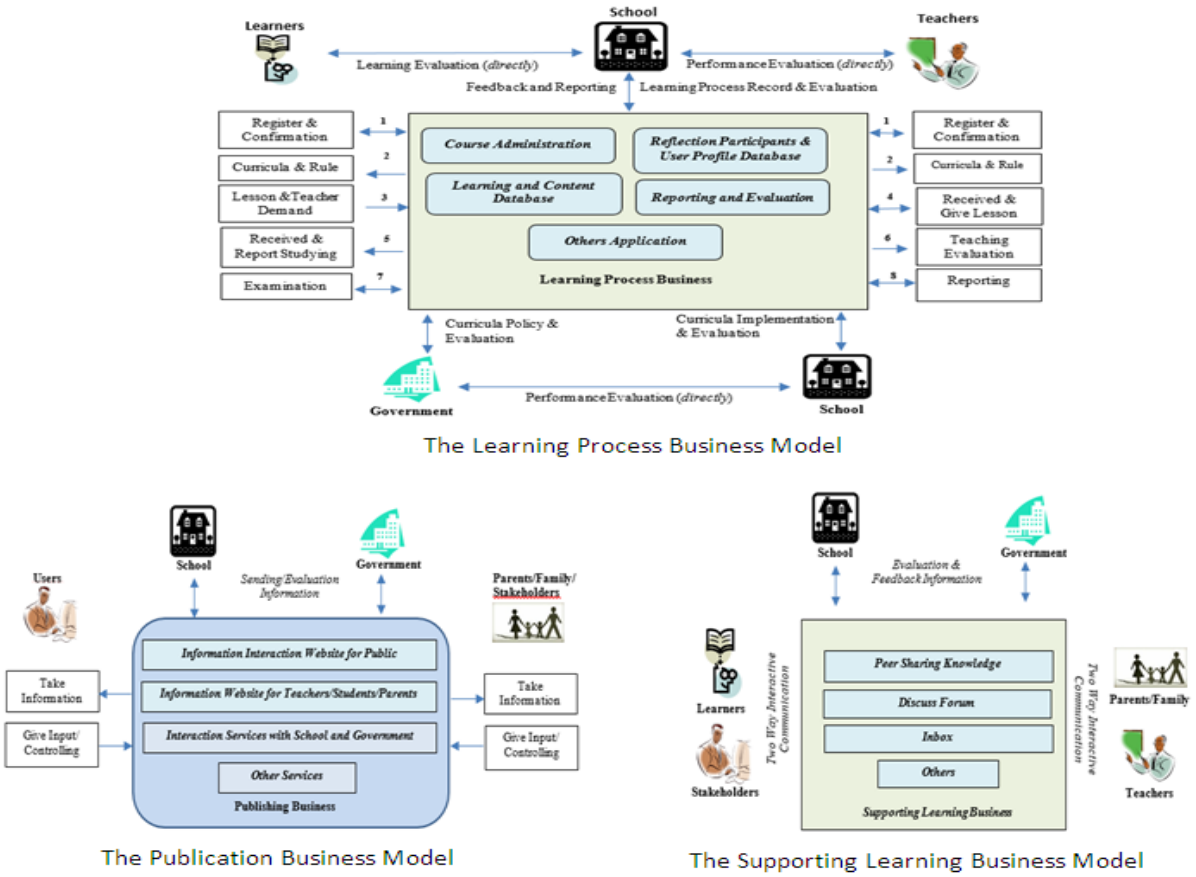
users/stakeholders. The infrastructure provides services for education services and support (Table 4).

Table 4: The Learning Process Business Flow

Users/ Stakeholders	**Descriptions Task**
Government	1. To inform and socialise curriculum and government policy in the Cloud system for all users and stakeholders. 2. To evaluate school performance based on Cloud documentation and directly report from the school itself. 3. To evaluate teacher and student performance based on Cloud documentation and school evaluation according to the Cloud system and evaluation report.
Schools	1. To identify and implement government curricula and government policy based on education resource potential in an Institution. 2. To inform and socialise school program and policy for users and stakeholders in Cloud. 3. To evaluate teacher and student performance based on cloud documentation and directly report.
Teachers	1. To identify students learning assessment and create a learning schedule as curriculum needed and government policy. 2. To send learning material and evaluate student learning in Cloud. 3. To evaluate students' ability through direct examination and via cloud to create a school report.
Students	1. To understand curriculum and identify learning needed as potential, flexibility time and passion. 2. To propose a learning schedule confirmed by the teacher. 3. To follow direct and Cloud-based. examination

Figure 3 shows the learning model t divided into three sub-models. *The Learning Process Business*, consists of learning process services. It is a bridge for learning process interaction between teachers, students and schools as well as the Government, providing the stages of learning process services such as input, process, evaluation and monitoring.

Figure 3. The Learning Model



The Government and schools are responsible for publishing information, evaluation, control, and monitoring of the learning process. Users and stakeholders in this section only follow regulations provided to them.

Publication Business, where all data and information from the Government and School about learning process reports will be uploaded. This section also provides an opportunity for users and stakeholders to interact with the Government and schools about data and uploaded information.

Teachers, students and parents as well as society can be aware of the progress of the learning process as needed. As all the learning processes are published in the Cloud, it allows users and stakeholders easy control and gives input for the learning process, and support Education Institutions or Government for improved education.

Supporting Learning Business, outlines learning supporting applications, such as a discussion forum, inbox, sharing knowledge, information feedback or government policy feedback, etc. It is helpful for the Government and Schools to obtain real information about the learning

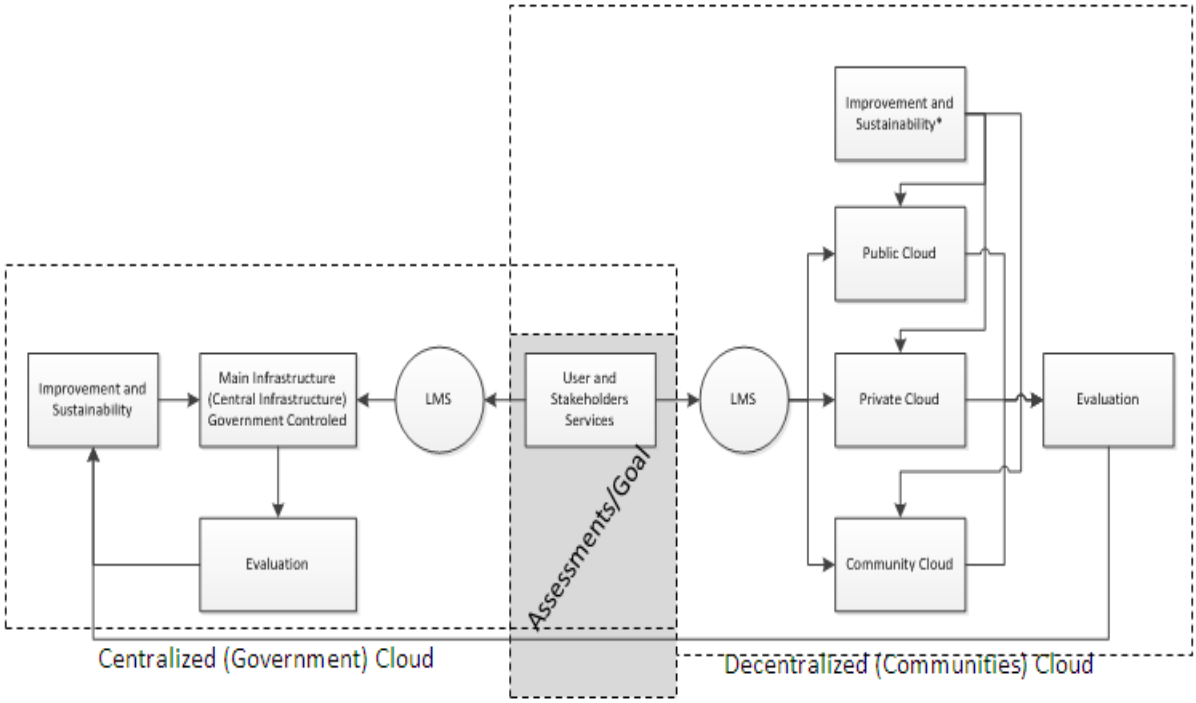
process, Government policy and user/stakeholder satisfaction. Furthermore, but it can also be used for free interaction and discussion and free sharing of knowledge. .

Government-Community Hybrid Cloud Education System

Government-Community Hybrid Cloud is a hybrid cloud computing model under government supervision dealing with the hybridisation or intermixing of private with public and community Cloud that users need for more efficient Cloud management. . In the simplest terms, the hybrid model proposed is primarily a private Cloud that allows the Government as the main infrastructure to obtain information from private, public and community based Cloud to evaluate and analyse the requirement of sharing data regarding users and stakeholders.

Figure 4 shows that the model provides more efficient ways to keep data and applications secure. Unlike the public Cloud, hybrid Cloud can provide a higher level of security for sensitive data and also support government policy, program and regulations. This is the best utility-oriented technique and the most frequently used model in the education services for acceleration.

Figure 4. The Hybrid Cloud Educational Model



The Cloud model allows companies to adjust the amount of user computing needs, and enables faster understanding by the Government the required computing capacity. On the

other hand, there are various ways to manage a hybrid Cloud. It includes the selection of required applications and other education services to be interconnected with Cloud technology and redistribution and sharing of information. In this model, researchers also found new learning concepts such as centralisation and decentralisation of managerial educational teaching resources and blending learning between face to face cloud based learning.

The hybrid education system under government control makes the government responsible for continuing and maintaining the system, which is also associated with a new strategy for catching the gap in quality education between remote and developed areas i.e., implementation of Cloud education should be mainly co-ordinated by the Government.

The impact of this concept makes all data and information about education resources centralised. This condition enables the Government to easily manage education resources and services for adjusting user requirements to accelerate the quality of education.
The hybrid cloud educational system under Government supervision means the system uses composition between private, public and community-based Cloud. Researchers propose that the government will build a private cloud for education services. Otherwise, under Government control and regulation, users or Educational Institution still have the opportunity to use the above-mentioned Cloud systems as long as needed. The Government will evaluate this condition and provide input for the Government's cloud for improvement.

This system characteristic makes the Government fully responsible and will support policy, regulation and buffer programs. Furthermore, it also makes all data and information about educational resources and learning processes become centralised. This is an advantage for Government to manage educational resources and accelerate education quality.

Centralisation and decentralisation of managerial educational resources: the managerial concept of this system is a joint system between centralisation and decentralisation. The Government which co-ordinates all educational systems will be responsible for all main infrastructure, policy and regulation as well as maintenance team. On the other hand, the system also provides some space to schools for autonomous learning services such as managing educational resources, material learning, user information and so on.

This combination will allow some acceleration for education quality improvement, and all educational resources will be more effective and efficient with this system. There is effective co-ordination, supervision, mentoring and evaluation between programs and Institutions for successful policy and treatment of increasing and accelerating the quality of education.

Combined learning in face to face e-learning based on cloud computing environment: face to face teaching will be not replaceable because teachers not only transfer knowledge but also create a bond between teacher and student. This means the way for students to achieve the teacher's requirements, related to how he or she understands the uniqueness of students to provide the best learning based on individual characteristics.

Buffering strategy achievement for the main goal which is using ICT for accessible education and ease of use of education resources for users and stakeholders. With this cloud model, researchers believe that the Government can identify, manage and fulfil both gaps through naturalisation and accelerate education quality.

This system allows cloud education in the community but still under government watch and evaluation, while perfecting the Government's own system through evaluations and surveys. An effective Government management cloud-based system can overtake all services of Cloud education in the community and create centralised improvement with decentralised support based on government goals and the requirement for user education and capability.

Implementation

According to this article, government intervention will provide more advantages for the implementation of this program, as the government has policy power, networking, funding and human resources for support and maintenance. The following roadmap is proposed:.

Table 5: Planning of Roadmap Implementation

	Job Description			
Technology Roadmap (*Figure 5*)	***Current Condition***	***Transition (1):*** *Phase 1*	***Transition (2):*** *Phase 2*	***Transition (3):*** *Phase 3*
Implementation Strategy (*Figure 6*)	***Stage 1***	***Stage 2***	***Stage 3*** ***Stage 4***	***Stage 5*** ***Stage 6***
Time	*Schedule as Planning and Condition*			

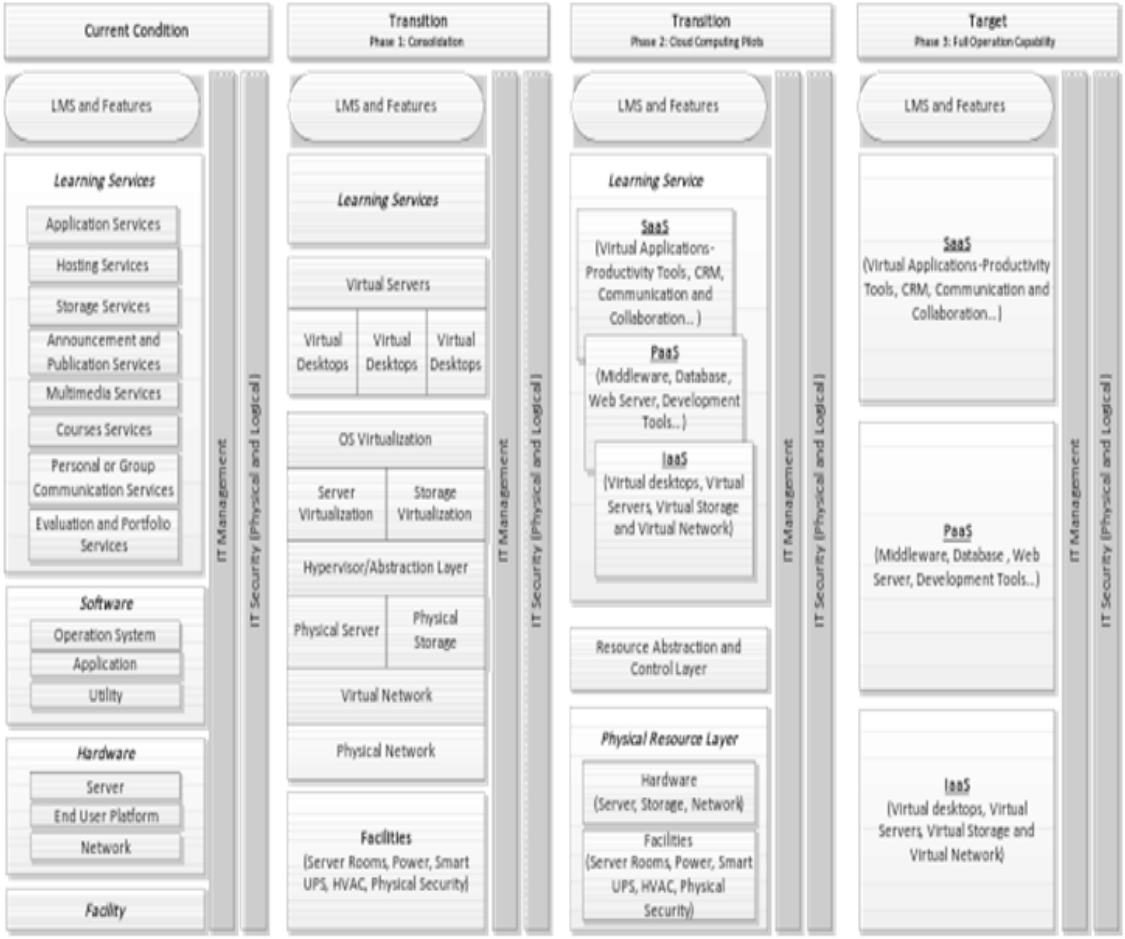
The Government also has goals to increase quality education to develop[smart people. Furthermore, there will always be problems when implementing new technology due to user resistance and unskilled users. Therefore, there is a strong need for having a strategy for implementing the Cloud education system that complements these details and fulfils the following requirements.

Migration Issues

Policy, is the main power of government to support regulation. Since the Government has the authority to allocate resources for developing the Cloud Educational System, it must be protected and supported by regulation, which should be an umbrella term for all project activities. . *Firstly*, the regulation also describes the role of Government, Schools, Universities, users and stakeholders. *Secondly*, regulation helps to implement the project based on standard operational procedure (SOP) of the system for operators, users and stakeholders, evaluators and providers. Finally, the regulation makes the development of the cloud educational system more effective, efficient and accountable for best results.

Infrastructure support: Central Government is responsible for developing the main infrastructure and human resources for running and maintenance of Cloud computing for the educational system, which is the core business of Government task. . However, some user areas don't have appropriate infrastructure for applying this system, including Internet connection problems and minimum devices (Figure 5).

Figure 5. Implementation of Roadmap Technology



Since the government includes local governments such as provinces and districts, it can use this networking to make sure that the area has good Internet connection such as the infrastructures of Internet connection. Today, numerous technologies can help provide Internet services, for example, Google balloon internet and other supporting technologies.

Cloud computing means end users can do anything with their devices without worry about the application. However, the meaning of minimum devices also has a standard. Therefore, the Government networking and provision should also ensure this standard.

Utilisation, the cloud educational system offers different services in its application including platform and infrastructure level fitting educational level or user needs. The system provides the opportunity for servicing between users, users to stakeholders and users to the Government as needed. It has a function to manage and control data, information and knowledge based on user needs.

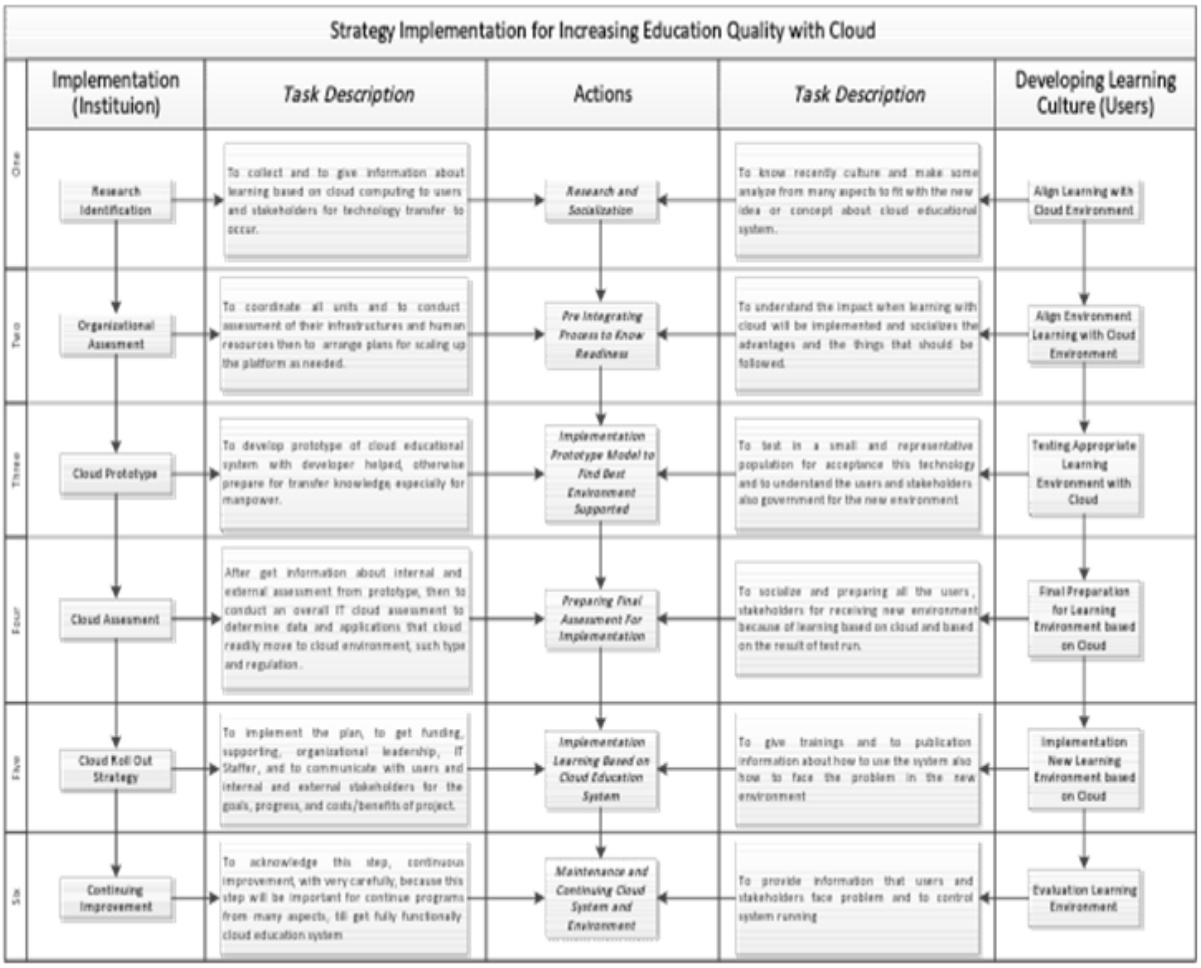
To achieve this purpose, users must be ready to use the system. To ensure this, the Government or Society needs to create some programs for user readiness, such as publication programs both online and offline, training courses programs, help desk programs, forum programs and so on.

Continuing, one of the big issues of technology is continuing, due to the rapid growth of technology. According to researchers, we don't face this problem because cloud computing offers a new concept of learning, so that it builds a new culture or offers us a new way of learning.

Implementation Strategy

Figure 6 proposes that the implementation strategy has six phases: (i) strategy based on research identification; (ii) organisational assessment; (iii) cloud prototype; (iv) cloud assesement; (v) cloud rollout strategy; and (vi) continuing improvement.

Figure 6. The Implementation Strategy n



The construction of CED exercised in parallel, from the side of technology and the side of a learning culture in order to change user readiness. One of the challenges of the sustainability of a system using new technology is user readiness, as well as paying attention to the sustainability of the technology itself. Often the technology is changing quickly, but researchers believe that Cloud computing will change everything because this technology will create a new culture in learning.

The role of Government also became important as a responsible business success: this program becomes very important with all the potential and ease offered by cloud computing, especially in educational services. Not only infrastructure and human resource readiness but also continuity of management. Subsequently, there needs to be an effort to create a supporting environment for CED. Using all Government resources, will be implemented in programs for supporting and stimulating users to build the system.

Culture Development Issues

There are three significant changes in the Cloud educational system: when a student becomes a learning centre, face to face teaching can be replaced as needed and concern of community or society for watching the learning process that will support the flexibility and feasibility of cloud computing characteristics.

Our culture still believes that face to face learning is the best method for learning, that bonding between teachers and students occurs in the classroom. However, according to research this assumption is debatable, as the main task of teachers is to transfer knowledge, bonding between teachers and students concern how to obtain knowledge, also knowing one's gifted and potential to explore and master it. Therefore, it's not necessary to have physical meetings in the classroom, however it is important to maintain several quality meetings including several tests.

The Government should help people understand this matter, as learning is not only in class but also by one's self to maintain motivation. It must be highlighted that even though in the Cloud educational system all stakeholders of teaching control the learning process and support learners.

While *ICT is expensive,* cloud computing is centralized and unites all infrastructures for sharing services as virtual while users also become end-users. These advantages make all ICT investment low cost and provide ease of service for users. Users don't need to think about changing devices to fit with the system, upgrade the application, hard interfacing and so on.
*As a trusted system***,** ICT is widely used and virtual. This allows anyone to access it as long they have access or capability, making security an important issue.

Developing trust is not easy, it requires time and confidence. When the government takes control of the education system, it's a good first step for obtaining trust from users, as government action will be supported through policy, program and funding. Furthermore, the system must be accountable to users, to increase user trust. Cloud computing also offers ease of use as a direct bridge between users and stakeholders.

Conclusion

Cloud computing offers a wide range of delivery models and solutions that benefit various types of Organisations to meet their demands in the most efficient way in the education field. The advantage of Cloud computing is its learning management system. One of the important

things for implementing the new technology is continuation and customer readiness, as well as for describing the implementation strategy.

Government-Community Hybrid Cloud Education will solve the education service problem due to education obstacles, as this system also becomes a buffer or can be used as a transition system that is controlled as an educational resource condition. This system is flexible and provides the opportunity for growth for servicing, user ability and infrastructure.

Researchers also believe in Government supervision, education service improvement, development of user capability, and system excess, therefore a developing country can catch up on the lack of education quality with a developed country. Not only the Government, this system will also make not only the Government but also Society care more about Education, as there is space for the community to act.

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