- The assimilation of the Veritas group with the Meeganism group so that the process is as transparent to business continuity as possible. This would include setting up physical space so to take advantage of work environments and collaborations within groups.
- The combination of both the Veritas and Meeganism information into a single data warehouse so that information that each company offers is easily searchable and maintained. Giving the people who need the information access to the information.
- The development of a new infrastructure, one that might be ready for the day that cloud technology and virtualization might need to be implemented and supported within the DDGC.

• A definitive exploration of cloud based technology and how it might help in every do business operation with the consideration to security of company data and systems.

• The design of a HRMS system so to keep track of employees within the company.

1.3 Estimated Cost Analysis

The overall cost of Big Combo stands at \$682,000. The cost factors the average new computer systems and mobile devices for both the staff of Meeganism and Veritas. It takes into account of the 65 employees plus an additional 5 systems that could be used immediately for new hires if the need arises. The computer will be leased so to cut cost and to stay current with the latest technology offerings by refreshing the systems every 3 years. The budget for the new systems is \$46,000.

Project Deliverable 6 13



it in the past without stopping to see if there is a better, more efficient way to do things now. Thomas Bertram once said "If it isn't broke then why fix it", many times business has adopted this mentality. Instead one should sometimes ask "Why is the competition selling more than our company if the methods are not broke?" well, that company did not wait for the companies something to break down. The other company just found a way to increase the competitive advantage which means that the company could do something better/faster/cheaper than competitors (engineer, 2010, \P 1).

The project plan solution will provide a competitive advantage for DDGC by increasing

- Infrastructure to support communications between DDGC and the Solution • Provider.
- The necessary client software to support and obtain information that is needed on demand by DDGC when requested from it's the solution provider.
- The necessary storage capacity to facilitate the scalable data storage needs of DDGC.
- A 24 x 7 x 365 support staff that is readily available in the case of any issues or events that might transpire.
- A superior disaster recovery plans if a worst case scenario happens.
- A business provider model that support 9599% availability of system and network resources 0 • Bres. 16 of 90 e price

The companies that DDGC has picked have proven track records as solution providers in the world of IT. The three providers and their solution are as follows:

> 1. Amazon Redshift (AWS) – Known for providing fast query performance by using columnar storage. Amazon Redshift handles all the work needed to manage, monitor, and scale a data warehouse, from monitoring cluster health and taking backups to applying patches and upgrades. One can easily add or remove nodes from the cluster as the performance and capacity needs change. Amazon Redshift strives to be the complete data warehouse service, reducing overhead (Sullivan, 2014, ¶ 4).

- Google BigQuery BigQuery is a fully managed data analysis service offered in the cloud that enables agile business analytics for today's fast changing business environment. Getting started with BigQuery requires no additional capital expenditures to buy. The BigQuery service is readily available with a Service Level Agreement of greater or equal to a 99.9% uptime (Google Developers [GD], n.d., p. 1).
- 3. Microsoft Azure Azure enables a company to build and deploy a wide variety of applications including web, mobile, media and line of business solutions. It was built in Auto Scale so it enables a company to dynamically scale up or down to meet needs (Microsoft, 2014, ¶ 4). Microsoft's hybrid consistency enables a company to use the same virtual machine and management tools that they use on-premises. Windows there Active Directory is a complete identity and access management cloud solution. One can manage user accounts, synchronize with on-site directories, and get single sign on across Azure and hundreds of popular SaaS applications like Salesforce, Workday, Concur and more.

- 2. Data Warehouses save time in the short and long term. This is because information is accessed in one location and end-users don't need to resort to searching multiple sites. This leads to rapid informed decision making that were made from pulling the information from multiple sources. No more does a manager or executive need to wait around for an IT staff to generate reports.
- 3. A Data Warehouse Enhances the quality and consistency of data. Data from various departments are placed into a standard format that can be easily read. This is a total advantage because the data is pulled in from multiple sources.
- 4. A Data Warehouse can pull in Historical data in externel because it stores a large amount of data that one comanalyze from different periods of time. This helps in making future predictions.

There is a high Return on Investment (ROI), because businesses that have implemented warehouses with business intelligence have been proven to generate more revenue and saved more money than businesses that have not. In a study by the International Data Corporation it mentioned that the Average 3 year ROI was 401% with an average payback of 2.3 years (Kelley, 2001, p. 1).

2.5.2 Cloud Technology and Virtualization

Cloud Technology offers a new level of flexibility in application and data delivery. Positioning applications and services from a cloud can give a company operational benefits without the capital expenses of maintaining on premise environments. There is no doubt of the visibility of cloud technology; it has materialized as a common form of networking in today's

Project Deliverable 6 29 on a medium to large sized network. CPF-1 automatically blocks and then logs any oversized packets or packets that appear to be part of a SYN flood.

Along with the Check Point firewall an Intrusion detection system using anomaly detection will be setup to inspect all outbound and inbound network activity and identify suspicious patterns that may indicate a network or system attack from someone attempting to break into or compromise a system.

2.6 Scope and Controls

The Project Management Body of Knowledge (PMBOK) defines scope as the process required to ensure that a project includes all the work required, and only the work required to Notesale.co. complete the project successfully.

The "Big Combo" project will the following:

overing storage system will provide more space ig of the data ware so that the data of both companies can be stored.

Integration of all systems which includes Database

- Integration of Infrastructure
- Expand from 1 floor to 3 floors within the existing building
- Explore the use and security of cloud and virtualization technology systems •
- Develop a HRMS system

The database will need to be upgraded because the existing database does not have enough space to accommodate both companies. Since a record is, technically, something that a company needs to keep around for a set period of time, either for regulatory, legal or business reasons only important data will be considered for conversion beyond five years. Before the

Project Deliverable 6 31

Any changes to the scope will need to go through change management process first and reviewed by the Project Office. It is necessary for the change management process in order to control scope so that the project does not suffer from scope creep. Change will be documented using an electronic change control form. Minor changes within scope will need to be approved by the project manager. Any changes affecting a solution provider would need to be reviewed with that solution provider who then would agree any necessary contract revisions or payments. Changes to scope and contract revisions would need the approval of the Change Control Board.

2.7 Constraints and Assumptions

The following constraints have been identified:

- e.co.uk Both Companies had different wa of historical records.
- There is a difference in Database Manag ms.

otocols and methods used on both companies networks.

- The project is dependent on the shared resources of each company and outside solution providers.
- The project has a limited time frame to complete the project. •

The following assumptions have been made in defining the scope, objectives and approach:

- All data will be migrated over to a new system.
- The new system will need to support at least 65 employees. •
- The Steering Committee will participate in implementation of the project plan.

maintains how the network or company information should be used. Security weaknesses occur when there is no clear or written security policy.

5.2 Logical and Topographical Layout of a planned network

5.2.1 Current Network Layout:



Project Deliverable 6 65 they need through a secure VPN connection that uses L2TP/IPSEC because it provides data confidentiality, data integrity and data authentication.

5.5 Comprehensive security policy

The meaning of the term security policy differed depending on the context in which it is used. Governmental agencies, as an example discuss security policy in terms of national security and interaction with foreign states. In general a security policy consists of a set of rules that protects organizations assets. An information security policy provides rules for protection of the information assets of an organization (Whitman & Mattord, p. 61). The Security policy for the Defense Design Corporation will begin on the next page.

Defense Design Corporation Security PorcyO-UK

5.5.1 POLICY

A. It is the policy of the Deterst Design Corporation for the ormation, as defined hereinefter it with forms which i Cluco written, spoken, reordered electronically or printed is protected from accidental or intentional unauthorized modification, destruction or disclosure throughout its life cycle. This protection includes an appropriate level of security over the equipment and software used to process, store and transmit the information.

B. All policies and procedures must be documented and made available to individuals responsible for their implementation and compliance. All activities identified by the policies and procedures must also be documented. All the documentation, which may be in electronic form, must be retained for at least 6 years after the initial creation or pertaining to policy and procedure, after changes are made. All documentation must be

Risk: The probability of loss of confidentiality, integrity, or availability of information resources.

5.5.5 INFORMATION SECURITY RESPONSIBILITIES

A. **Information Security Officer:** The information security officer (ISO) for each entity has the responsibility for working with user management, owners, custodians and end users to develop and implement security policies, procedures, and controls, subject to the approval of the Defense Design Corporation. This includes:

- 1. Making sure security policies, procedures, and standards are in ploy and adhered to.
- 2. Providing basic security support for all system and users.
- 3. Advising owners in the intentit cation and classification of computer resources.

4. Advising sectoms development and opplication owners in the implementation of security controls for information on systems, from the point of system design, through testing and production implementation.

- 5. Performing Security Audits.
- 6. Providing on-going employee security education.
- 7. Performing security audits.

8. Reporting regularly to the Defense Design Corporations Oversight Committee on entity's status with regard to information security.

B. Information Owner: The owner of a collection of information which is usually the manager responsible for the creation of that information or the primary user of that information. In context ownership does not signify proprietary interest, and ownership

Project Deliverable 6 72 applied are dependent on the sensitivity of the information. Information must be classified accordance to the most sensitive detail it includes. Information recorded in several formats must have the same classification regardless of format. The following levels are to be used when classifying information:

A. Confidential Information

1. Confidential Information is very important and highly sensitive material. This information is private or sensitive in nature and must be restricted to those with legitimate business need for access.

Examples of Confidential Information may include: personnel information, key financial information, proprietary information of commercial research sponsors, system access passwords and information file encryptor equal.

2. Unauthorized disclosure on the information to reoper without a business need for access and regulations or may cause significant problems for the Defense Design Corporation, if customers or its business partners. Decisions about the provision of access to this information must be cleared by the owner.

B. Internal Information

 Internal Information is intended for unrestricted use within the Defense Design Corporation, and in some cases within affiliate organizations such as Defense Design Corporation's business partners. This type of information is already widely-distributed within the Defense Design Corporation, or it could be so distributed within the organization without advanced permission from the information owner.

Examples of Internal Information may include: personnel directories, internal policies and procedures, most internal electronic messages.

Project Deliverable 6 73 2. Unauthorized disclosure of this information to outsiders may not be appropriate due to legal or contractual provisions.

C. Public Information

1. Public Information has been specifically approved for public release by a designated authority within each entity of the Defense Design Corporation.

2. This information may be disclosed outside of the Defense Design Corporation.

5.5.7 COMPUTER AND INFORMATION CONTROL

All involved systems and information are assets of the Defense Design Constantion and are expected to be protected from misuse, unauthorized campulation, and destruction. These protection measures may be obviously near and software based. A. Ownership Molftware: All computer of tware designed by the Defense Design Corporation's employers of contracted personal on behalf of the Defense Design Corporation or licensed for Defense Design Corporation use is the property of the Defense Design Corporation and must not be copied for use at home or any other location, unless otherwise specified by a license agreement.

B. Installed Software: All software packages that reside on computers and networks within the Defense Design Corporation must comply with applicable licensing agreements and restrictions and must comply with the Defense Design Corporation's

acquisition of software policies.

C. **Virus Protection:** Virus checking systems approved by the Information Security Officer and Information Services must be deployed using a multi-layered approach

D. **Access Controls:** Physical and electronic access to Confidential and Internal information and computing resources are controlled. This is to ensure appropriate levels of access by internal workers; a variety of security measures will be instituted as recommended by the Information Security Officer and approved by the Defense Design Corporation. Mechanisms to control the access to Confidential and internal information include the following methods:

 Authorization: Access will be granted on a "need to know" basis and must be authorized by the immediate supervisor and application owner win the assistance of the ISO. Any of the following methods are acceptate to providing access under this policy:

a. Context bases access the cess control based of the context of a transaction. The testernal" factors might include time of day, location of the user, strength of user authentication, etc.

b. Role based access: An alternative to traditional access control models hat permits the specification and enforcement of enterprise specific security policies in a way that maps more naturally to an organization's structure and business activities. Each user is assigned to one or more predefined roles, each of which has been assigned the various privileges needed to perform that role.

c. User based access: A security mechanism used to grant users of a system access based upon the identity of the user.

Project Deliverable 6
Explore how cloud technologies and virtualization will benefit the company with an eye towards security.

82

The expansion from one to three floors will require some consideration in regard to hardware to link the two additional floors. New Switches will be purchased as well as additional computers and network jacks. A Human Relationship Management System will be put into place to keep track of staff that is already occupying the building in the Meeganism Company and for the additional people that Veritas will be bringing on board.

Amazon Web Service (AWS) is a cloud computing platform. Redshift from AWS is a petabyte scale data warehouse that is designed for anal ric workroads which connects to standard SQL-based clients and htelligence. According to Amazon ry and I/O performance Redshift (RDS) delivers fas qu virtually any sized dataset by analyzing and distributing queries across multiple nodes. Most common administrative tasks associated with provisioning. configuring, monitoring and backing up, and securing a data warehouse are automated (Rouse, 2013, p. 1). In an article dated March 26th 2014 Amazon announced a new round of price cuts for a number of services on its cloud platform which included RDS cloud databases (Lardinois, 2014, p. 1). For the first terabyte of data, Amazon S3 will only charge \$.03 per gigabyte on standard storage and \$.024 for reduced redundancy storage. In addition, Amazon also cut its prices for its EC2 cloud computing by up to 40 percent. For this reason the Defense Design Global Corporation has decided to use Amazon's service to host their Data Warehouse. This will cut costs as it relates to energy consumption, hardware support, and technical support by housing their Data Warehouse

Project Deliverable 6 90 http://searchcloudcomputing.techtarget.com/tip/Cloud-database-admin-roles-blur-as-ITattempts-to-house-more-big-data

- Tullman, H. A. (2011). 3 Employees You Need To Fire. Now . *Inc.*. Retrieved from http://www.inc.com/howard-tullman/three-employees-you-need-to-fire-now.html
- Whitman, M. E., & Mattord, H. J. (2010). *Management of Information Security* (3 ed.). Boston, MA: Cengage.

Zhu, J. (2008). *Handbook of Cloud Computing*. Retrieved from http://books.google.com/books?id=jLNGCPs6rr4C&pg=PA37&lpg=PA37&dq=Consolid ated+IDC+fabric&source=bl&ots=iypMmnJRP6&sig=_x7k3lu43_l47vSL0HRGUXDcs Qs&hl=en&sa=X&ei=gYv9UryAMpKCyAH47oDADA&ved=0cc06ALwAQ#v=onep age&q=Consolidated%20IDC%20fabrio&f=f1\$653 from 90 of 90 preview from 90 of 90