

# Implementation of Virtual Office in a Cloud Environment

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**Abstract**— With respect to the paper published [1], the methodology has been formulated without using Speech technology .In this paper it is formulated the methodology to find the approximate benefits like increasing companies turnover by reducing sick leave and as a social responsibility the approximate calculation of pollution reduction is done due to reduction in travelling by using virtual office. And the methodology focuses the way for the customers to get the minimal calculation of the work to be done and possible saving for a company. And it is also compared the benefits and techniques of the actual desktop implementation with the virtualization desktop setup.

**Index Terms**— Cloud Computing, Virtual, Virtualization, Computing, Client-server, Client, Server

## I. INTRODUCTION

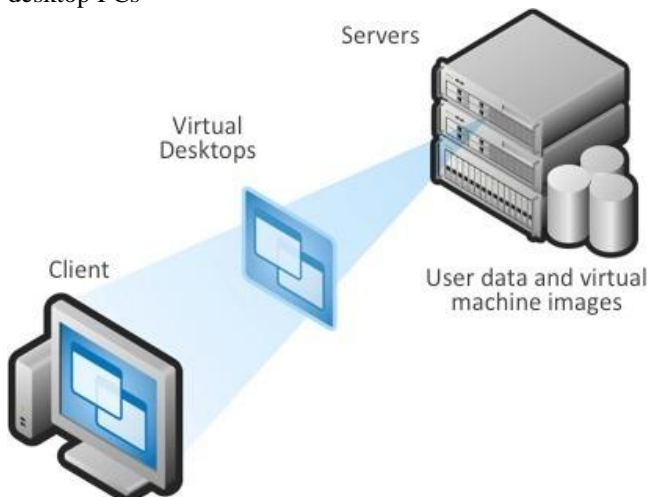
### 1.1 Virtualization

Virtualization ,in general ,is the creation of a virtual (rather than actual) version of something, such as an operating system, a server, a storage device or network resources.

*Virtualization*, in computing, refers to the act of creating a virtual (rather than actual) version of something, including but not limited to a virtual computer hardware platform, operating system (OS), storage device, or computer network resources.

### 1.2 Virtual Desktop Infrastructure (VDI)<sup>[2]</sup>.

Virtual Desktop Infrastructure (VDI) is a computing model that adds a layer of virtualization between the server and the desktop PCs



### 1.3 VDI Characteristics <sup>[4]</sup>

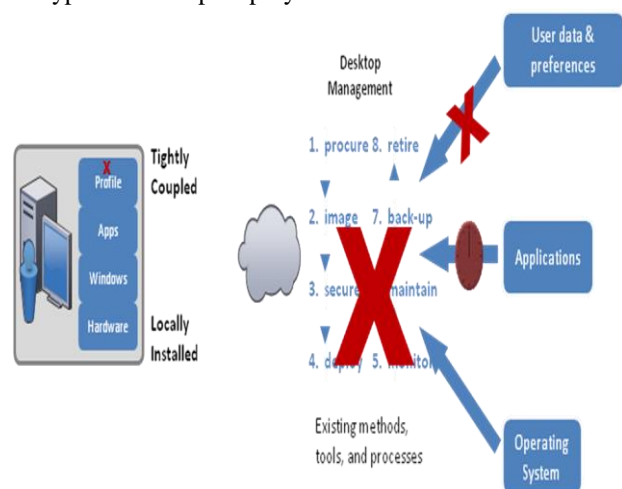
Every desktop user can utilize the same image

- Reduce management and support costs
- Generally have just one system to troubleshoot
- Processing moves from individual workstations to a VDI server

Hardware costs can be more easily managed

- Since almost everything will reside in the data center

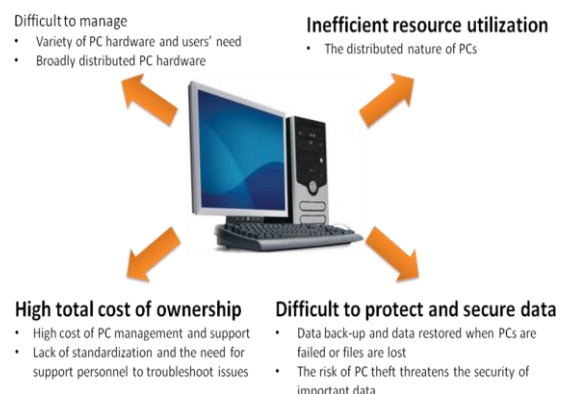
### 1.4 Typical Desktop Deployment <sup>[3]</sup>



Tight binding between layers

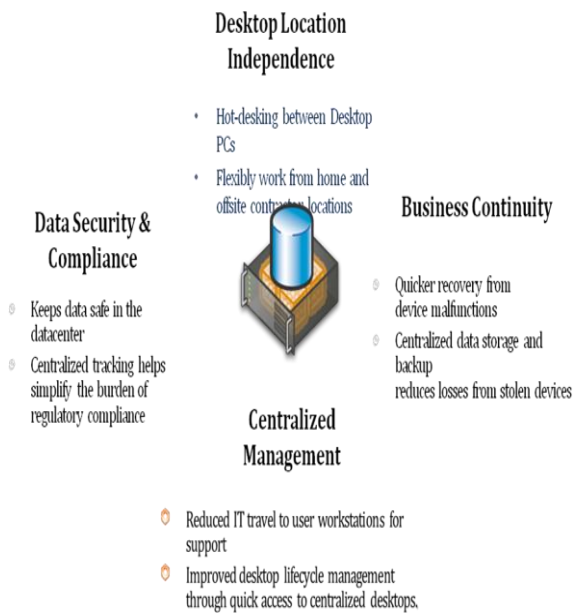
- The components are linked together in ways that are difficult to support and maintain
- A problem at one layer often causes a chain reaction
- May destroy the whole stack
- Make recovery difficult
- Threaten any locally stored user data and settings
- Most organizations just replace or re-image the whole PC

### 1.5 Traditional Desktop Infrastructure Challenges <sup>[4]</sup>



### 1.6 Why Centralize with VDI?<sup>[3]</sup>

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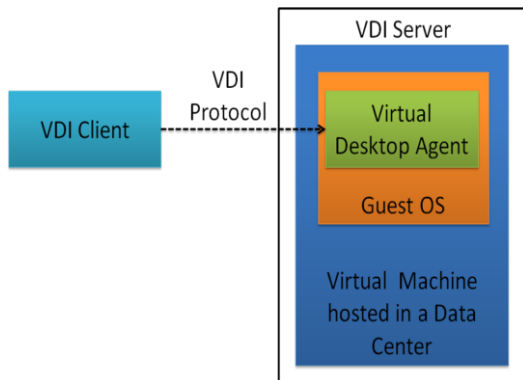


- Improved utilization
- Efficient use of CPU and memory resources
- Improved availability
- Reduced desktop downtime
- Improved manageability
- Patches and upgrades performed in data center
- Centralized management reduces operational expenses
- Improved security
- Data and applications reside in secure data centers
- Rapid Client Deployment
- New users can be up and running quickly

### 1.10 Challenges for VDI<sup>[4]</sup>

- Interoperability
- Ecosystem
- Mobile access

### 1.7 Basic View<sup>[2]</sup>



### Virtual Desktop Client (VDC)

- The converged end user device
- VDI server
- Virtual Desktop Agent (VDA)

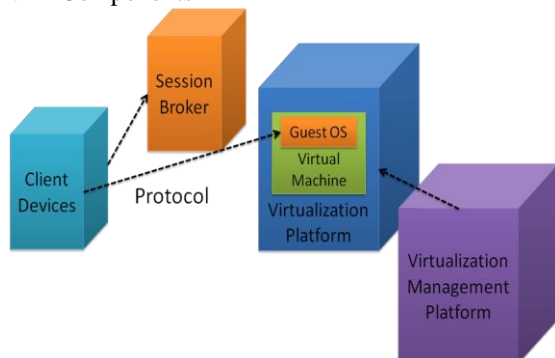
The control software resides in a virtual machine hosted in a data center

### VDI protocol

- Connect client and server,
- Transport the necessary control commands and I/O data

Different I/O data may be encapsulated in different virtual channel

### 1.8 VDI Components<sup>[4]</sup>



### 1.9 VDI Advantages<sup>[4]</sup>

## II. METHODOLOGY<sup>[2]</sup>

For standardization purposes, the following measures should be used when calculating the potential cost savings that may result from implementing Virtual Office. Please note that the values used for these calculations change annually and differs based on company.Estimation

### 2.1 Savings from Reduced Sick Leave

To find out the amount of savings due to reduced sick leave, i multiplied the number of Employees in the agency by the reduced number average days of sick leave and by the average daily wage. The average daily wage and sick leave is based on the company requirement.

Amount of savings by reducing Sick Leave =No of employees\*Average days of Sick leave\*Average Daily Wage per day

### 2.2 Estimating Increase in Productivity

Calculate the difference of productivity within the Virtual Office setting as compared with the average productivity standard within the office setting. This can be a measurement of how many applications were processed in a month, how many calls were handled in a month, how many cases were processed in a month, etc.

$$\text{Percentage of Increase in Productivity} = \frac{\text{No applications Processed in Normal Office per month} - \text{No applications Processed in Virtual Office per month}}{\text{No applications Processed in Normal Office per month}} \times 100$$

### 2.3 Estimating Commute Miles Saved

Using the percentage of State employees drive alone to work, and the average commute distance in miles round trip the number of miles saved per year is calculated.

Commute miles saved =No of Workers\*working Days per year\*percentage of Employees Drive to work\*No of miles per trip

### 2.4 Estimating Pollution Saved

Vehicle emissions tests show that one pound of pollution is emitted for every thirty miles driven in Maricopa County. based on that by dividing the number of vehicle miles saved per year by 30 i get the number of pounds of pollution saved by teleworkers in one year.

$$\text{pollution saved per year} = \frac{\text{Commute Miles}}{\text{No of miles taken to emit one pound pollution}}$$

2.5 SUMMARY

This Chapter also describes the methodology work that has been applied to predict the above mentioned relevant Factors. These results will be used to establish a comparison of benefits and Savings of the proposed method in this work. From the above figures, the results generated for Virtual office Settings can be seen.

III. EXPERIMENTAL RESULTS

This chapter deals with the experimental evaluation of the proposed approach. The performance evaluation of the proposed approaches is evaluated based on the Performance Model discussed in Methodology.

3.1 Comparison with other models:<sup>[1]</sup>

Table 3.1: Comparisons of Virtual Office with Normal Office Settings

Existing Office Process	Virtual Office Process
Managing by Productivity “Seeing” employees work Stats	Managing by Productivity Productivity numbers
Communication Face to face E-mail Phone	Communication E-mail Phone
Planning All hands meetings Work desk	Planning Meeting software ( NetMeeting etc.) Home workspace
Work Environment Office Direct Social interaction Relying on others	Work Environment Home No direct social interaction Relying on yourself
Measuring Success “Seeing” employees work Status	Measuring Success Productivity requirements
Employee Issues Walk to HR Walk to mgr. E-mail Phone Call	Employee Issues E-mail Phone call

3.2 Related Work Results

3.2.1.Login

3.2.2. Concept Review

- Cloud Computing
- Virtual Office

3.2.3. Report Generation

- Performance Analysis

- Social Awareness Analysis

FIG 3.2.1 : Login Screen

Used for application Login and Provides security access to Application

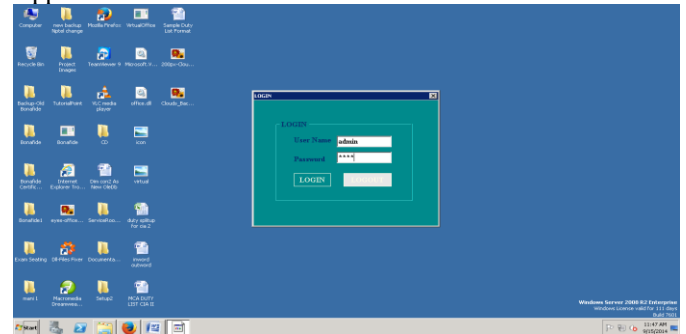


Figure 3.2.1: Concept of Cloud Computing

3.2.2.(a) Concept of Cloud Computing Screen

Herein summarized the basic concepts of Cloud Computing, to create the awareness for customers and users

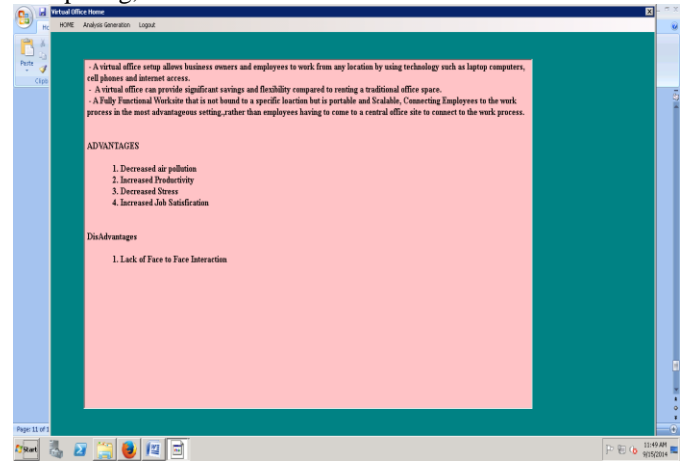


Figure 3.2.2 (a) : Concept of Cloud Computing

3.2.2. (b) Concept of Virtual Office Screen

Here, it is summarized the basic concepts of Virtual Office, to create the awareness for customers and users.

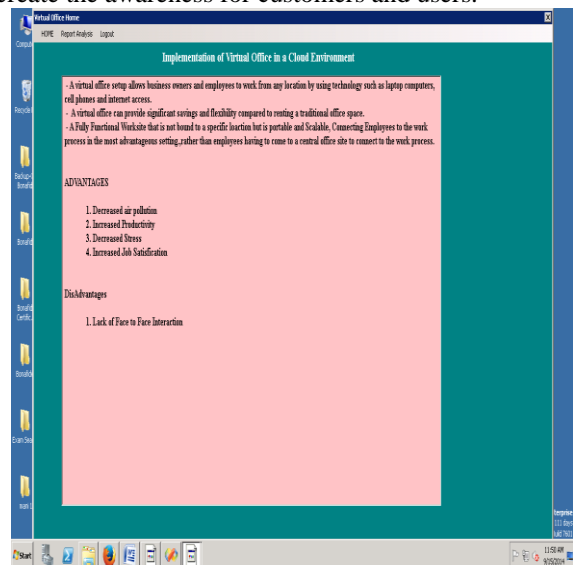


Figure 3.2.2(b) : Concept of Virtual Office

Select your Choice:2

3.2.3 (a) Virtual Office Result Generation Screen

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In this Module i calculate the Increase in Productivity and saving earned by reducing in sick leave due to virtual office

Input Given	Value
Total No of Person Employed	20
Average Days of Sick Leave	5
Average of Daily Wages	200
Applications Processed in Normal Office Per Month	23

The Result Produced for the Virtual Office is:	Value
Estimation for Increase in Productivity	0.6956521791
Estimation Savings from Reduced Sick Leave	18000

setup.

Figure 3.2.3(a): Virtual Office Result Generation

### 3.2.3(b) Social Awareness Report Calculation Screen

In this Module i calculated the Pollution saved and the commute miles saved due to the virtual office setup.

Input Given to Generate Social Awareness	Value
Enter the Total Number of Vehicles in your Virtual Office	50
Enter the Percentage of Employees Commute in Vehicles	25
Enter the average Commute Distance in Miles/Day	53
Enter the No of Working Days per Year	248

Result Generated is:	Value
The Commute Miles Saved is	29400
Pollution Saved Per Year is	6820

Figure 3.2.3(b) : Social Awareness Report Calculation

The Formula has been successfully applied in the Baseline Productivity of Virtual office Setup, providing very competitive results. The performance was accurate in all of them, showing thus the robustness and adaptability of the proposed approach for time series of different nature.

## CONCLUSION AND FUTURE WORK

So, a Virtual office reduces the operational <sup>[1]</sup> cost and lab our turnover by reducing the optimum level of E-Wastage. Thus in this paper i explored some of the basic idea of virtual office using in the cloud environment which

leads to Green IT and also Implementation has been done. Each company and personality differs in what works. Generation discrepancy as generation X and Y enters the workforce. Personal responsibility and work habits determine which method is better

As the future work I had started doing to examine how the virtual office with speech can be used and Its performance comparisons with some other technologies is also be taken as a better direction for my next work.

## REFERENCES

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