Introduction

Nowadays, the workplace platforms of many companies are still composed of PCs and laptops in a traditional distributed model. This type of model presents a series of problems that are addressed from different strategies.

The PC life cycle can be summarized in different phases, each of which has its own intrinsic problems and estimated costs that in some cases are not taken into account.

Desktop life cycle stages

Planning. This is the stage in which one chooses the hardware that is to be installed for the workplace, the image creation or template strategies for deploying these stations are established, and the design of the environment is drafted. This phase does not entail high costs in the PC life cycle, but it can affect the cost of other stages in the event that the established strategies are incorrect.

Desktop acquisition. This is approximately 50% of the total cost of the desktop life cycle. This stage includes:

- Purchasing negotiations
- Physical installation and connection of the components
- Installation of peripherals
- Image creation (OS and application installation)

Deployment of the new fleet of desktops. This is the moment in which the new workplaces are delivered to the users. The following tasks are included during this stage:

- Creation of standard images
- Migration of data and applications
- Desktop customization
- Installation and administration

Operating. This stage covers the entire desktop life cycle in the company. It is important to take certain costs into account that are not considered in some cases:

- Electrical consumption
  - Inherent use of the desktops
  - Electric consumption of cooling the working areas
- Supplies
- Security. Anti-virus, access control, detection and prevention of security violations, virus infections and recovery processes of the affected desktops
- Management and administration of the user station
- OS and application updates

Support. This stage has the second highest impact regarding the cost of the desktop life cycle and has the highest impact concerning the business, because the time since a PC becomes inoperative and the time when it is repaired results in an inactive time for the user. One must bear in mind the following factors during this phase:

- Emergency *first-aid kit* with PCs available to substitute other damaged PCs
- User training courses
- Customer support staff
- Logistics for moving and substituting the inactive desktop

Updating. In this stage, all the hardware or software changes that are not defined during the planning stage are considered. These might include:

- Replacement of the PCs
- Change of hardware
- Change of new software (OS and applications)

Removal of the desktop. During this phase, administrative tasks are carried out to start the process of reselling the equipment, technical tasks of data destruction of the desktops and logistic tasks to remove the desktops.

Below is a table about the TCO of the desktop that shows the different items imputed to its life cycle:

	Unmanaged	Somewhat Managed	Moderately Managed	Locked and Well-Managed
Hardware	$ 243	$ 243	$ 241	$ 239
Hardware Maintenance	35	36	37	38
Software and Software Maintenance	750	725	699	648
IT Software	70	75	79	88
Data Center Allocation	-	1	1	1
Electricity/Heating/Cooling	67	55	48	24
Hardware, Software, and Facilities	$ 1,165	$ 1,135	$ 1,106	$ 1,038
Tier 1	$ 112	$ 106	$ 101	$ 90
Tier 2	219	186	153	87
Tier 3	95	96	89	75
Security	93	86	78	61
Desktop Management	145	202	191	170
IT Operations	$ 663	$ 677	$ 612	$ 483
Administration	$ 71	$ 69	$ 66	$ 60
Management	65	65	65	65
User Training	28	30	31	34
IT Training	14	15	15	15
Disposal	30	29	29	29
Administration	$ 209	$ 208	$ 206	$ 203
Training	$ 460	$ 450	$ 441	$ 422
Fixing	3,101	2,608	2,115	1,129
Downtime	197	157	116	35
End-User Costs	$ 3,757	$ 3,215	$ 2,672	$ 1,586
Hardware and Software	$ 1,165	$ 1,135	$ 1,106	$ 1,038
IT Operations Labor	663	677	612	483
Administration Labor	209	208	206	203
Direct Costs	$ 2,038	$ 2,020	$ 1,925	$ 1,724
End-User Costs	$ 3,757	$ 3,215	$ 2,672	$ 1,586
TCO	$ 5,795	$ 5,235	$ 4,597	$ 3,310

(Source: Gartner)

Desktop life cycle management

For managing the desktop life cycle, particularly during the operating, support and updating stages, dozens of different manufacturing tools have been developed to perform administrative tasks (inventory, equipment costs, etc.), customer service (ticketing systems, database incidents, etc.) and updating (image managers, patch managers, updates, etc).

The use of these tools requires an additional effort regarding installation, configuration and integration.

A poorly defined strategy in the planning stage results in mismatches in the following stages that could cause a significant cost increase or poor customer service, elements that directly impact the business.

How can the virtual desktop help in life cycle management?

Adopting virtual desktops greatly affects the life cycle of the desktop in each one of its stages, improving operations and providing better customer service and updates management as well as desktop security.

Each one of the desktop life cycle stages is listed below in detail, together with the resulting improvements from implementing virtual PCs.

Planning. During this stage, the server platform, shared storage and software to manage the virtual desktop fleet are defined. In this case, calculations are made to determine which shared resources are needed to host the virtual desktops.

Making a pilot or proof of concept is considered essential in this phase.

During the pilot, the IT department must take the requirements and needs of the environment, business and end users into account. The tests and adjustments made during the pilot stage are crucial to recreating the operation of the virtual desktops in a real environment and measuring the shared resources needed for the subsequent deployment of the virtual desktops.

In this stage, we consider the use of non-persistent virtual desktops. This is a critical point in the planning process, as it directly affects the subsequent desktop life cycle stages.

While the physical characteristics of the PC or desktop to be implemented are decided during this stage in standard platforms, one can choose from different alternatives with a virtual desktop platform:

- Substitute the current fleet of desktops with thin clients
- Gradually make this substitution by using the existing desktops as mere connection terminals

Desktop acquisition. The following tasks are carried out during this stage:

- Negotiations for purchasing the server platform that will host the virtual desktops
- Installation and physical connection of the server platform
  o Installation and configuration of peripheral virtual desktops management software
  o Creation of images (OS installation and applications)
  o Installation and configuration of connection terminals (thin clients, current reconverted PCs)

Deployment of the new fleet of desktops. By using the management software of the virtual desktop fleet from a single administration point, you can complete practically all the tasks that allow you to deploy the virtual desktops:

- Creation of standard images
- Creation of virtualized applications
- User and user group configuration
- Creation of virtual desktop usage policies
- Creation of virtual desktop groups
- Configuration of virtual desktop deployment policies.
- Desktop personalization

Operating. Operating with virtual desktops has certain significant differences with respect to operating with standard platforms:

- Management and administration of the workplace. From a centralized administration center you can manage and operate with any virtual desktop directly impacting the quality of customer service

- Electric consumption.
  o Intrinsic consumption of the desktops. With the use of thin clients the electrical consumption is drastically reduced, since this type of devices have a consumption of 7 to 20 watts
  o Electrical consumption for cooling the spaces enabled for work. Thin client devices do not generate heat, so they do not produce significant temperature changes in the room where they are operating

- Security. Anti-virus and access control. Since virtual desktops are hosted in a completely secure environment and are subject to usage policies, they are quite more secure than standard desktops. With non-persistent virtual desktops, the virtual desktops returns to its initial state each time a user closes his/her session. It is also possible to perform a centralized emergency shutdown of infected virtual desktops, forcing the users to shut down their sessions. Subsequently, these desktops can be restarted in isolated environments in order to eliminate the virus from the network
- OS and application updates. Thanks to the use of non-persistent virtual desktops, OS updates can be performed practically automatically, since the platform administrator can prepare the different templates that make up the migration and try the deployment in a testing environment. When the new desktops are ready, the user starts a new session with the new OS implemented. The installation and configuration of new applications has a similar process

Support. As mentioned, this stage directly impacts the business since the time that passes from the moment a PC stops operating and when the issue is fixed means downtime for the user. With the use of virtual desktops, the support task is greatly sped up because:

- The thin client devices are easy to replace and repair
- Many of the issues that may arise in a non-persistent virtual desktop are fixed by starting a new session
- Compatibility problems between hardware and OS or applications disappear, as the virtual desktops present the same hardware to the OS

Updating. The hardware updating and renewal periods are extended, since the amortization time of the thin client devices can be from 7 to 10 years, while the server platform can be increased in the event that more resources are necessary due to OS change, increasing the fleet of PCs.

Concerning application changes, they can be made directly on the base images before being deployed or different virtualized application packets can be made that will be delivered on the virtual desktops.

Support and professional services

Virtual Cable sells UDS Enterprise through a subscription model based on number of users, including support and product updates.

Additionally, Virtual Cable offers professional services to install and configure UDS Enterprise.

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