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P151758

Project Management

Managing a Hardware/Software Project for Disaster Recovery

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Objectives

The purpose of the project is to restore the IT infrastructure of Ebne-Sina hospital in Iran if there was a natural disaster. Ebne-Sina hospital was chosen between the group because of its location on the Alpine-Himalayan seismic belt. If a natural disaster was to occur, for example an earthquake or a flood, the hospital need a plan of action ready to restore the IT infrastructure as quick as possible, otherwise a lot of the patients will be at risk.

Restoring a network after a disaster could take up a lot of time, including calling out IT specialists, engineers and electricians, etc. Within all this time waiting for specialists to arrive, patients are at risk, doctors and all staff cannot communicate across the hospital and more and more patients are entering the hospital seeking help. Petrol generators and maybe backup batteries could restore the electrical equipment, but they wouldn't last long as a lot of energy would be consumed.

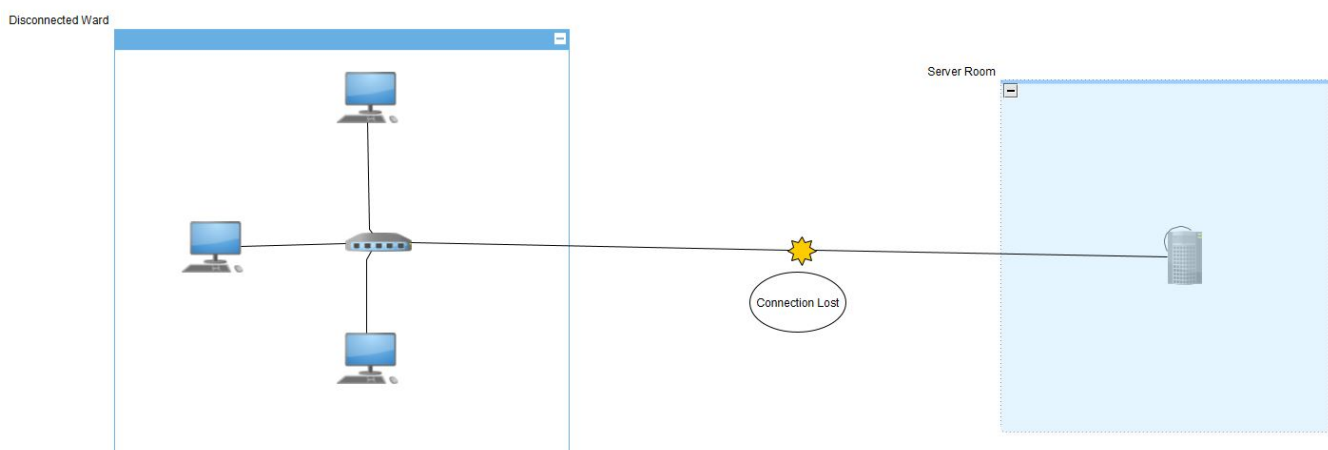
That is why the hospital staff, most likely the IT staff, will need an important design feature that could restore the infrastructure as quick as possible, instead of wasting valuable time waiting on other specialists.

Scope

- Must
- Could/Should
- Definitely
- Wont

Depending what the disaster is, all servers and vital connections must be able to function and kept restored at all times. If a flood was to occur, the ground floor is usually wiped out so the servers should never stay on the ground floor (In this case). In the case of an earthquake, any part of the building could be separated from the server. Cables and equipment could be destroyed in a fire, the flood or an earthquake. Basically there are many different ways the vital connections could be lost during the disaster.

Disaster Diagram: [1]



So we are proposing a backup wireless network system ready to go if all wired systems are shut down because of a natural disaster.

To setup this wireless network system, hospital IT staff will need to quickly replace the wired network with a wireless connection to the server so that the system will stay connected, even if the cables have been destroyed in the disaster. Two wireless access points will be setup to talk to each other with all settings installed in advance. One could be left connected to the server and the other stored in a safe and secure location ready for an emergency.

To keep on top of the limited time, instead of every computer becoming wireless, its quicker for all of the existing network cables to be unplugged from the back of every Pc, then the cables from the wireless AP plugged into each Pc instead. Now we have wireless connectivity to the other half of the kit, restoring the systems connection.

Using access points is a reliable way of keeping connections secure and much quicker for the staff to setup and use instead of going from one computer to the other trying to connect them to the wireless network. [3] This proposition will definitely save a lot of time.

Wireless Network Diagram: [1]



The disadvantages about a wireless infrastructure is the cost, wireless networks can cost up to four times more than a wired one. They are also a lot slower than wired connections so they would need to keep the bandwidth to a minimum. This could be done by blocking social media, or blocking voice calls through the kit etc. [2] The range of the wireless connection is limited. Wireless networks can be accessed by any computer within range of the network's signal so information transmitted through the network (including encrypted information) may be intercepted by unauthorized user. [2]

We will also be proposing a Wireless Local Area Network (WLAN) communications between all hospital staff, public services, patients with immediate effect if a disaster occurs.

Constraints

One constraint is IT budget. IT budget is traditionally focused on data backup, mainly focused on such probability as hard drive failure. With the hospital being in an earthquake zone, it is probably best to widen the budget for other eventualities like network infrastructure failure. This would mean more money provided by stakeholders.

Another constraint would be if the hospital takes a long time to get the authorisation to buy the kit.

Designing and testing could cause problems and cause delays, and it only takes one delay to delay the rest of the timescale.

With only a short amount of staff, even if there's a problem with one of them it will also cause delays and the installation/designing/testing will be delayed.

Authority

The authority we would have to convince to buy this kit and all the setup would be higher authority in the hospital, the hospital managers, finance managers and the chief of medicine.

Resources

Workers on payroll

- James Davies
- Rhys Roberts
- Jac Edwards
- Dean Brown
- David Haggett
- Anna Kiev

Equipment needed

- Spare Network Cables
- 2 Access Points
- New Servers

Finance to pay for this equipment and workers will be provided by the stakeholders

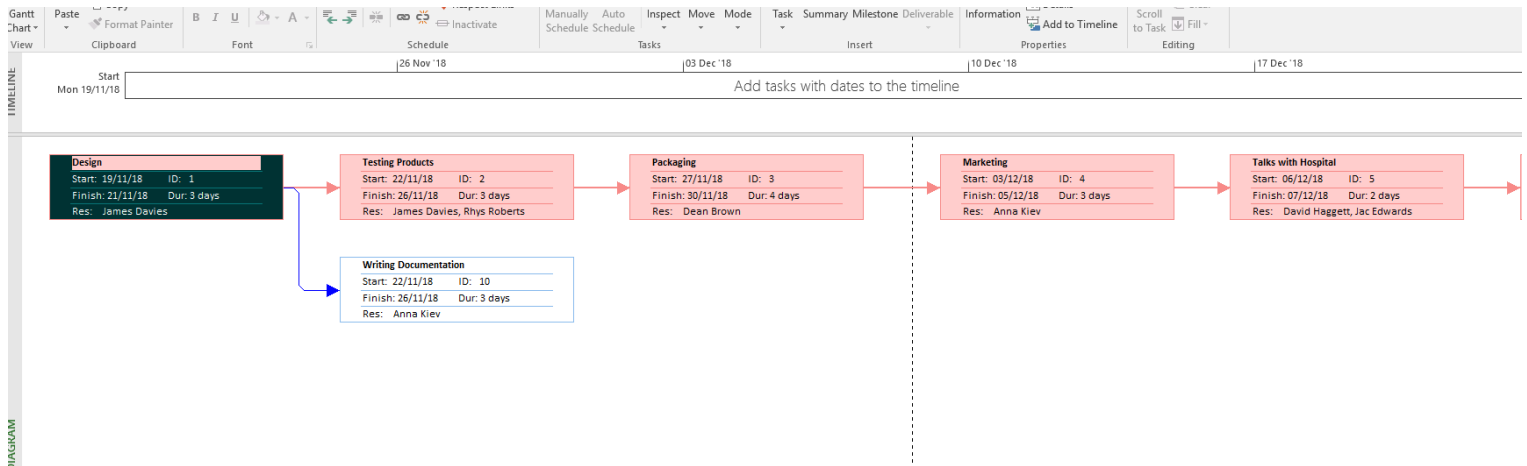
- Government
- Private insurers

FRONT LINE STAFF	SURGEONS					
	DOCTORS					
	NURSES					
	ANAESTHETISTS					
	MIDWIVES					
	WARD MANAGERS					
	CONSULTANTS					
	SPECIALISTS					
OTHER STAFF	PARAMEDICS					
	AMBULANCE STAFF					
	RECEPTIONISTS					
	IT STAFF					
	CLEANERS					
	MAINTENANCE / BUILDERS					
	COOKS					
	STUDENT DOCTORS					
	AUDITORS					
	MEDICAL REPS					
CUSTOMERS / PATIENTS	WAITING TO BE SEEN					
	MID SURGERY					
	RECOVERING AFTER OPERATION					
	NEW BORN BABIES					
	VISITORS					
HOSPITAL TYPE	1) PRIVATE INSURANCE /					
	PAY ON ARRIVAL					
	2) GOV. SUBSIDISED INSURANCE					
FINANCE STAKEHOLDERS	PRIVATE INSURANCE COMPANY					
	LOCAL AUTHORITY RESPONSIBLE					
	FOR FINANCE OF CARE					

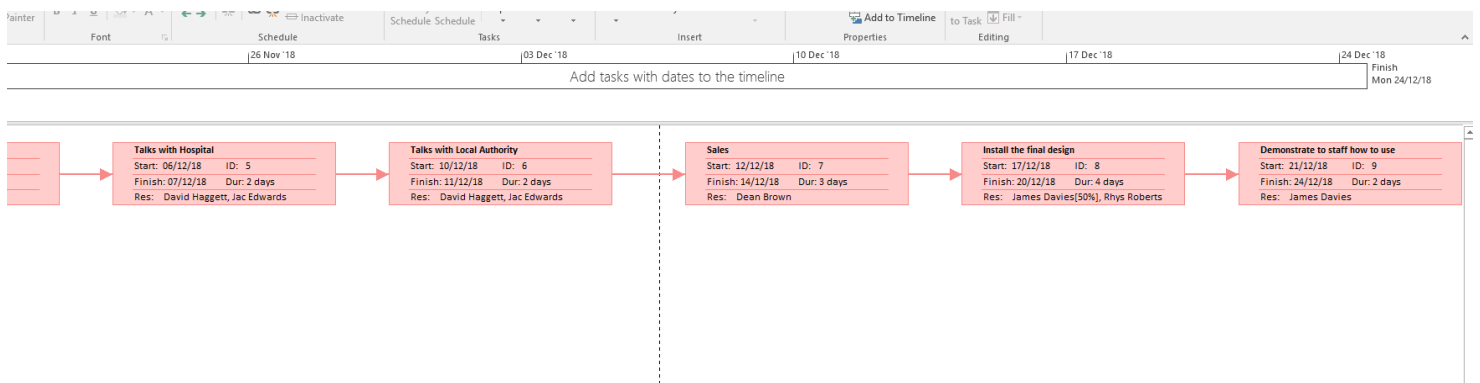
Above is a table of all the possible hospital staff in Ebne-Sina and all the information about the hospital. [1]

Project Management in Project 2016

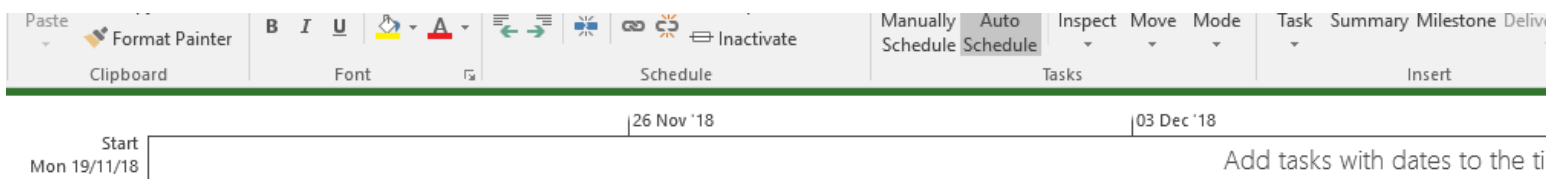
Network Diagram part 1



Network Diagram part 2

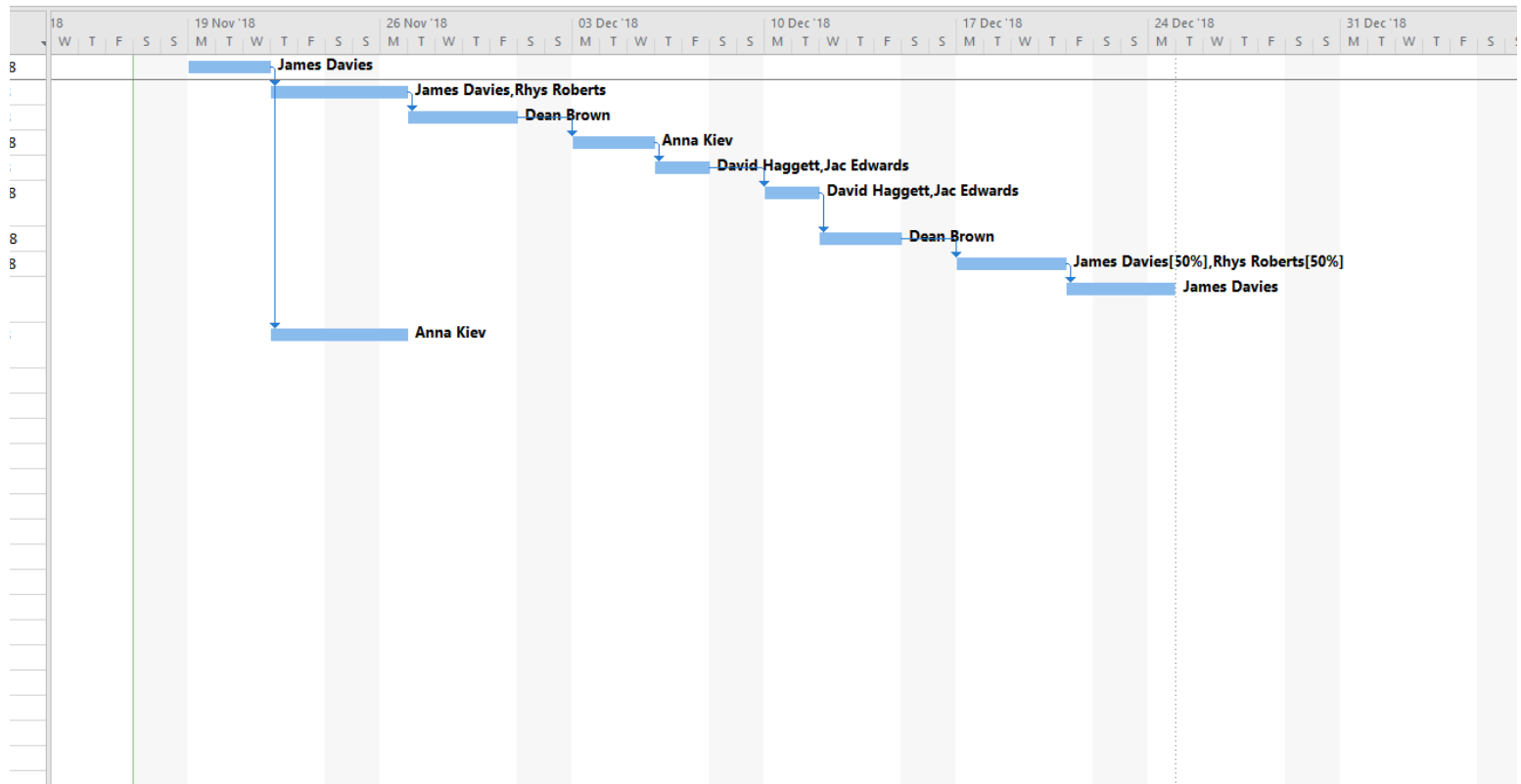
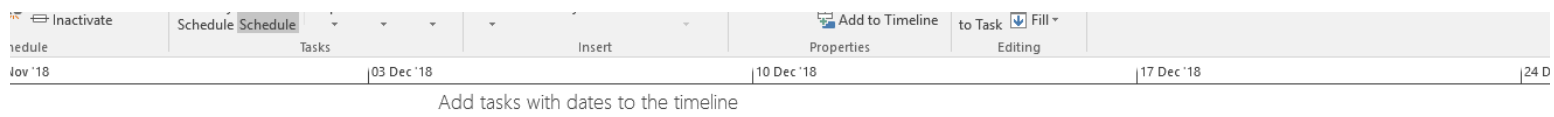


Gantt Chart part 1



Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
	Design	3 days	Mon 19/11/18	Wed 21/11/18		James Davies
	Testing Products	3 days	Thu 22/11/18	Mon 26/11/18	1	James Davies,Rhys Roberts
	Packaging	4 days	Tue 27/11/18	Fri 30/11/18	2	Dean Brown
	Marketing	3 days	Mon 03/12/18	Wed 05/12/18	3	Anna Kiev
	Talks with Hospital	2 days	Thu 06/12/18	Fri 07/12/18	4	David Haggett,Jac Edwards
	Talks with Local Authority	2 days	Mon 10/12/18	Tue 11/12/18	5	David Haggett,Jac Edwards
	Sales	3 days	Wed 12/12/18	Fri 14/12/18	6	Dean Brown
	Install the final design	4 days	Mon 17/12/18	Thu 20/12/18	7	James Davies[50%],Rhys Roberts[50%]
	Demonstrate to staff how to use	2 days	Fri 21/12/18	Mon 24/12/18	8	James Davies
	Writing Documentation	3 days	Thu 22/11/18	Mon 26/11/18	1	Anna Kiev

Gantt Chart part 2



Resource Sheet

[illegible]

Bibliography

[1] Nick Alexander, Networks Diagrams, 2018

[2] Techwalla, Evan Mckinney, Disadvantages of Wireless Networks
<https://www.techwalla.com/articles/disadvantages-of-wireless-networks>

[3] Wired/Wireless Internet Communications, published book, Kaushik Roy Chowdhury, 2018