Digitalized Hospital - Emergency room

Safety requirements are a necessity. Traditional methods like BIM are becoming less capable of real-time updates of building status due to the volume of big data traffic. We propose the creation of a digital system for hospitals and in particular for emergency rooms that allows, without interruption, remote monitoring, automatic and assisted management as well as predictive simulations, thanks to the use of static and dynamic data from sensors distributed in the building, from the preplanning phase up to the O&M phase (Operations & Maintenance Phase). Hospital managers will have the ability to perceive the real-time status of the entire hospital, patients, external workers, visitors, medical and nursing staff, but also from linked data from other Hospital and structures. Automated management will allow the efficiency of many sectors as well as the reduction of energy consumption, prevention of breakdowns in the structure, reduction of the number of management interventions required, synchronization of resources through territory and improved quality and security of daily maintenance work of the healthcare operators themselves and of the patients.

Stakeholders

- City Municipalities
- City Hospitals
- University Hospitals
- Regional Emergency services administration Institutions
- National Health Service (SSN)

Customers

- Italian national health service (SSN)
- Local health unit company (AUSL)
- Highly specialized companies of national importance (ARNAS)
- Accredited private health facilities
- Local citizenry and visitors
- Red Cross, ANPAS, Misericordia and other EMS private companies
- Providers

Objectives

- Development of a real-time software to receive, store and analyze data through visual interaction
- Deployment of a distributed sensor system
- Recovery of static data from BIM infrastructure
- Optional artificial intelligence system for simulation and predictive maintenance through the use of IoT-dedicated platforms.

In Scope

- Creation of software infrastructures.
- Interface definition/design.
- Supply-demand analysis.
- Testing of application and software changes. Legal policy research.

Out of Scope

- Improvement of the healthcare system on a
- Regional level through the implementation of artificial intelligence management.
- Creation of digital health profiles of Customers that allows constant monitoring out of the hospital to reduce clustering.
- Remote assistance.
- Automatic Cooperation with other health
- Structures to redistribute burden during time crises and emergencies.

Risks

- Non-respected time constrains.
- Difficulties in finding key people for software development.
- Difficulties and delays in software development.
- Sensor data security issues.
- Privacy legal issues.
- Lack of sufficient funding by sponsors being public and governmental.
- Higher than planned costs.
- Other contingent difficulties

Phases

Budgeted estimated costs

The estimated costs are yet to be evalued and will depends both on providers costs, optional choices by the customers and eventual risk and difficulties stoppers we though estimate a possible minimum of

250.000 €

Constrains

We have to "backfill" key project IT developer and partnerships for field engineer positions to ensure we have right people and partnerships.

Benefits

- Real time data visualization from the building
- Ability to analyze and automate tasks for necessary interventions.
- Manpower reduced costs.
- Manteinance cost optimization.
- Predictive manteinance.
- Predictive crysis simulations.
- Complexity minimization.
- Structures synchronizations on territory

Assumptions

We assume that all permissions for the installation of sensor systems and legal issues will be resolved by clients before implementation.

Project Managers

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