

UNIT NAME:ARTIFICIAL INTELLIGENCE

UNIT CODE: BIT 2319

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**SMART SPACES**

* These are interconnected spaces and places whereby the physical components and locations are equipped with networked sensors that are able to give their respective owners information regarding their conditions and usage.
* The humans and technology –enabled systems are able to interact in an open, connected, coordinated and intelligent ecosystems
* E.g. smart cities: Vienna’s residents and tourists rely on Wienbot, the chatbot of the city to provide a variety of answers of various things such as finding parking, restrooms and other critical information

**Benefits of smart spaces**

1. Reduction in costs-energy costs are reduced in real time thus reducing the amount of money used to cater for these resources
2. Environmental benefits-due to the intelligent systems in place, energy requirements are reduced and thus the carbon footprints are reduced as well.
3. Risk mitigation-the ability to monitor and control the smart systems allows the supervisors to catch problems early on and to solve them before they escalate. The system is also able to predict future and expected problems which can be addressed before hand.
4. Real time accountability-It bills users for actual use.
5. Creates a more productive workspace-It configures the space to support productivity with innovative space sharing.
6. Creates a safer environment-the systems can be used for surveillance which improves the environment for users. The system also provides sensor alerts which inform the users of anything suspicious in real-time.

**Disadvantages of smart spaces**

1. Hacking-Unauthorized access gain may compromise the system and in turn affect the users.
2. Cost-The set-up cost is high due to it its ultimate energy-saving potential.
3. Misuse by manufacturers-They may gather personal data of the users without consent.

**Improving smart spaces**

* Optimize operations-This done by understanding the deficiencies and how to mitigate them
* Enhance experiences-Improve customer experiences by using a data driven approach
* Improve safety- Keep the system safe by informing the users by using real-time alerts and situational awareness

**Difference between an expert system and a knowledge base system**

1. A knowledge base system is a computer program that reasons and uses a knowledge base to solve complex problems, whereas an expert system is a computer system that emulates the decision making ability of a human expert.
2. In a knowledge base system the knowledge base consists facts about the world, often in same form of ontology whereas the knowledge base in an expert system represents simply facts and rules.
3. Knowledge based systems are intended to be expanded and the results can be counterproductive i.e. they are discovery system, expert systems on the other hand are not, they distill just a particular set of skillset they are intended to present qualified result.
4. A knowledge base system generally works with “what’s available” which may or may not be invalid information, whereas an expert system

**Work cited:**

* <https://www.cognizant.com/glossary/smart-spaces>
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