GÖTEBORGS UNIVERSITET

STUDENT

0007-YKN

TENTAMEN

TIA315 Teknologi

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ℹ HT24 reexam: Welcome to examination!

This examination consists of open questions, sometimes referred to as 'essay questions'. It includes ***7 questions***, each rewarded with a maximum of 3 points. The examination is limited to ***2 hours.*** To pass it you need ***13 points*** (60%)

The grading will focus on the overall capability to explain and apply ideas. It will assess whether (1) answers are logically coherent, whether (2) they are grounded in readings, lectures, and discussions, and, when applicable, that (3) answers engage the key concepts of the course.

Advice:

Please, read the questions carefully! Each question normally consists of multiple requests, such as: "***Define***... and ***explain***... ***illustrate*** ... with an example..."

If you feel unsure about how to respond or don't remember exactly what papers or lectures said, trust your instincts and stay focused on the question. Explain in your own words, to the best of your abilities. Do ***not*** start to broadly talk about related things, to show you know other things.

It could be worth noting that longer answers are not necessarily better answers, since long texts increase the risk of ending up with inconsistencies.

1 HT24 reexam, Question 1

In actor-network theory, the principle of *generalized symmetry* proposes that humans and material artifacts should be viewed equally regarding their capacity to act, i.e., in terms of agency.

Describe, in your own terms, how this principle is useful when analyzing how socio-technical systems—systems that include both human and technological elements—behave and evolve.

Skriv in ditt svar här

The concept of generalized symmetry is about that humans and material artifacts should be viewed in the same way when it comes to their capacity to act in terms of agency. This principle is useful to understand how sociotechnical networks works. In a sociotechical network there are both human and human actants interact in relation to each other.

To give an example of how this should be understood in a more conret way, we can use the act of killing as an example. Here both the gun (the non-human) and the human (the human) are needed for the act of killing. Neither of these are enough without the other, but they are both needed and playing their role in this situation.

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Besvarad.

2 HT24 reexam, Question 2

Jacob has been learning about operand and operant resources. He understands that an operand resource is something that is acted upon to achieve a goal. This aligns well with his view of technologies as tools. However, he's unsure about the concept of *operant resources*.

Explain to Jacob what an operant resource is, and how it is different from an operand.

Skriv in ditt svar här

An operant resource is a resource that can act upon other resources to create value. Traditionally, humans have been seen as operant resources in the way that human can use other resources to create effects and value. Operant resources, in comparasion to operand resources are idependent, have agency and can take active decisions. An operand resources is a resouce that needs to be act upon to achive a goal, it is not independed in the same way as the operant resource is. Operant resources are therefore more generative than operand resources.

However, with the digital development today also technologies can be seen as operant resources. For example with the AI even technologies can be treated as operant resources that can be independent ant act as actants with their own agency. AI do not need another resource to act upon them to create value, but they can often act by themselves which makes them operant.

Ord: 154

Besvarad.

3 HT24 reexam, Question 3

Daniel struggles with the concept of *affordances*. He understands that affordances emphasize *meanings* over the inherent attributes of artifacts. His confusion stems from the fact that affordances are defined in *relation* to an observer or user. To him, if an affordance is something relative, it seems pointless.

What did Daniel miss about affordances? Explain to him why an affordance, although being defined in relation to an observer, can be useful to explain general aspects of material artifacts.

Skriv in ditt svar här

Affordances is defined in relation to an observer, which means that an artifact *affords* someone (often a human) to do something with it. For example a chair affords the human to sit on it. However, it does not matter if the human actually sit on the chair or not, the chair will still afford the action of sitting to the human. The thing with that affordances is defined in relation to an observer means that an artifact is always defined to an observer. Even though is is defined in relation to to something it is relevant to understand affordances ti understand a material artifact. Affordances does not require a human to actuallt act upon the material artifact.

Ord: 117

Besvarad.

4 HT24 reexam, Question 4

Olivia understands that *reproducibility* refers to the ability to create copies of a digital artifact without any additional marginal cost. However, she's unsure about the consequences of this. The lecture she's attending suggests that reproducibility leads to more diverse markets, including a wider range of niche products and services.

Explain to Olivia why the reproducibility of digital technology tends to produce markets with greater diversity.

Skriv in ditt svar här

Reproduciblity means that it is easy to create copies of a digital artifact without any, or very low additional marginal costs. This is possible because of the generative nature of digital technology and that digital technology affors reprogrammable, which is a difference from physical artifacts where the marginal costs are usually a lot higher.

Reproducibility creates *diversity* because the marginal cost of producing one more procuct is very low when it comes to digital technologies because of its possibility to easily reproduce. Therefore reproducibility affords *scalability and diversity.* It is easy and cheap to produce and store extra units when it comes to digtial businesses. Therefore digital markets can afford to be more diverse and have more niche products. Diversity and more more niche products is possible when it comes to digital artifacts is because it is immaterial and does not need physical storage, like in a physical store.

To give an example we can look at a bookstore. In a tradional physical bookstore you need to change and update the books the whole time to stay competetive on the market, you need to follow the booktrends etc. This means that it is not alway worhy to have a lot of nieche books, because they will propability not get you so much profit and at the same time cost more. However, in a digtial bookstore you can sell how many books and different niche you would like to. You are not longer dependent to the physical storage and to include extra niche-books must not mean extra cost or less profit. Amazon is a good example of a digtial store that took advantage of the possibilites of reproducibility to scale up their business. If they would not have digital stores, the diversity of the products that they offer would most likley not be possible, because of the need of physical storage and higher costs.

Ord: 313

Besvarad.

5 HT24 reexam, Question 5

According to Jonathan Zittrain, *generativity* is found in “a technology’s overall capacity to produce unprompted change driven by large, varied and uncoordinated audiences”. He also proposes that such generative capacity derives from four aspects of the technology: capacity for leverage; adaptability; ease of mastery; and accessibility.

Explain, in your own terns, how these four aspects “produce unprompted [spontaneous] change driven by large, varied and uncoordinated audiences”.

Skriv in ditt svar här

Ease of mastery: Ease of mastery is about how easy something is to use. The easier something is to use, the more generative the technology gets. When something is easy to use is more likely that a large varied and uncoordinated group of people that can use the technologie to experiment and innovate spontanously.

Leverage: Is about how many different things you can do with the technology and if you can use it for many different tasks. The more things you can use a technology for, the more generative it is and the bigger the change is to produce spontaneous change and innvative acts.

Accessability: Is about how easy it is to get something in the users hands. This aspect could for example be about the price of something. If something is easily avaible and cheap it is easier to get access to it and to use it for producing unpromted change and be innovative. If something would be difficult to some in contact with, it would be hard to use it for spontaneous use.

Adapatbility: Is about how much you can adapt the technology to the users needs and to get it to work in different scenarios and for different things. If a technology is adaptable so that is can be used by different people and for different situation, the change that is leads to sponanteous change and usage is bigger.

The more of each of these four aspect that you get, the more genereative the technology is and when a technology is highly generative it affors people to use it in different ways which could contribute to creativity and innovations.

Ord: 272

Besvarad.

6 HT24 reexam, Question 6

Emma is trying to understand how the concept of *boundary objects* can be useful in design. She has read that a boundary object is something general that different people can recognize and use in various contexts, but it can still have different meanings in each of them. This helps maintain a common identity, align different interests, and enable knowledge sharing between environments, while also supporting local needs and specialized designs. To fully grasp the concept, Emma needs an example.

Choose an example of a boundary object that is relevant to design. Use this example to explain to Emma how boundary objects can be *plastic* enough to adapt to local needs and constraints while still being *robust* enough to maintain a common identity across different sites.

Skriv in ditt svar här

An boundary object that is relevant to design could be a design programme. A boundary object is something that connects different social words. In the case of design, a ***design programme*** could be a bondary obejct because it allows heterogenity of people to contribute and work together on the deisgn projects even though the poeple that are working on it can come from different places in the world, with different cultures and different views on design. Because of the design programme (the boudary object) they can all understand each other design ideas in an easy way which could be more difficult without this boudary object. Without the boudary object they could have gett issues with not understanding each other lanugues or cultural styles. However, with the digtial programme, they do not have to understand each others lanuges or cultural preferences to work together. The boundary object is therefore both plastic and roboust, which in this example means that the design programme is plastic and therefore flexible to adapt to each of the workers needs and to the differences of the users, which is the part that make heterogenity possible. It does not matter if you come from Asia or Europe, you can still understand the design programme and work with it in the way that you would like to. At the same time it is also roboust and helps to maintain a common identity. In this example it means that even though a lot of different people are working with a design project, the main purople and the common aim with the project is still clear. They are all working on a house design for instance which is the robout part of the boundary object. Even thoguh the heterogenity of the users they main purpose remains.

Ord: 296

Besvarad.

7 HT24 reexam, Question 7

Explain the basic idea behind *ontological reversal* and reflect on the consequences of ontological reversal for the design of digital systems.

Skriv in ditt svar här

Ontological Reversal is about what is seen as the original or the truth. Before the evolution of digtial technologies, the physical world was seen as the real world. However, today the digital is in many cases seen as the real world and is where the original things happens.

The consequences of ontological reversal for the design of digtial systems, should therefore take this shift into account. When the digtial is increasingly seen as the real world this means that the requirements on the digtial also have to be higher. In the case of design och digital systems legal considerations and privacy concerns should for instance be taken into account when designing digital systems. If more of the real words acitivites happens on digital platforms, these also have to be design in a way that matches the needs of the real word.

To give another example it could be beneficial to design digtial sytems in a way that is easy to the user to handle and make it easily availble so that they actually can use it for everyday tasks. In other words, the requirements of the digtial becomes higher as a consequence of the ontological reversal.

Ord: 196

Besvarad.