GÖTEBORGS UNIVERSITET

STUDENT

0009-YWF

TENTAMEN

TIA315 Teknologi

Kurskod	TIA315
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Skapad av	Catarina Elg

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.

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

Generalized symmetry is useful in analysis of socio-technical systems because it provides a perspective where focus is on capacity to initiate change, rather than the substance the actor is made of. Both human and nonhuman actors can act and be acted upon as operand and operant resources. They can also initiate change in socio-technical systems that have both social and technical consequences, regardless of they are human or not. Since the two types of actors can be equally meaningful in terms of how actor networks are structured and evolve, it is not always meaningful to make a distinction between the two, but instead focus on how they affect other actors and the network as a whole.

Ord: 116

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 something that can initiate or trigger change proactively by itself. It does not need another actor to trigger the action possibilities that it affords. It can act upon something else. An operand resource also affords action possibilities, however it needs an external actor (operant resource) to act upon it and realize it as action, rather than just being possibility for action.

Ord: 65

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 are action possibilities. What actions are possible in the use of a given artifact is relative to the user/observer. Their physical and mental attributes decide what a user can do with that specific artifact. The artifact offers these action possibilities at any given time, whether they are needed/utilized or not. For example a normal, average size chair. It offers sitting, at all times, to an average human with an average, well functioning physique. It does not offer sitting to an elephant, because it would be too big and oddly sized for the chair.

Ord: 94

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

Reproducibility is a core attribute of the Von Neumann Architecture, which is the basis of the modern computer. It is part of why this architecture is known as 'the anything machine'. It helps enable emergent processes and goes hand in hand with reprogrammability. We can make copies of digital artifacts and change inputs and/or instructions as needed, which allows for experimentation while keeping the original as is. We can change parameters and see what happens in many different scenarios and learn from them in iterative feedback loops, improving over time as positive outputs emerge and are implemented. Reproducibility is valuable in emergent processes, where a precise final outcome is not necessarily defined, but it is possible to experiment and encourage unexpected and diverse outcomes to emerge and enter the market.

Ord: 130

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

Capacity for leverage refers to the range of affordances a given technology has. It means what it can do and how good it is at doing it. The more things it can do and the more effort it saves, the more generative it is.

Adaptability refers to the ability of a given technology to adapt to use in different areas, contexts and for different people. The more easily a technology can be adapted, the more generative it is.

Ease of mastery simply refers to the ease of use. The easier it is to use the technology, meaning the less specialized knowledge and skill required, the more generative it is.

Accessibility refers to how easy it is to access the technology itself. This could be monetarily, physically, socially, technically etc., and also refers to knowledge and information regarding the technology. The easier it is to access a technology and relevant information about it, the more generative it is.

These four aspects illustrate how technology affords a large heterogenous audience to produce unpromted change. For this to happen, obviously access to the technology in question is needed. Once there is access to the technology, users must be able to use it - the easier it is to use, the more people can use it. Now if a diverse group of people can access use it, it must be adaptable to a wide range of contexts and have a capacity to do something, be useful and save effort in those contexts.

Ord: 248

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

Apple App Store is a large platform for buying and selling applications for the Apple ecosystem. There is an enormous amount of apps on the platform and they increase the value of the ecosystem, which is very beneficial to Apple. It was originally developed as a response to the iPhone 'jailbreak', an action of self-resourcing by external developers, who created it as their own boundary resource, taking away control from Apple. Apple took back this control with their launch of the App Store. Along with it, they issued multiple boundary resources. This list SDK's and API's in order to promote diversity-resourcing, as well as rules and guidelines to ensure control through regulation-based securing. Focusing on the latter, these regulations were designed to be plastic enough to adapt to the contexts of a large, heterogeneous audience of (potential) third party developers. These regulations were 'robust', in the sense that they maintained the same core identity across these sites; they dictated the rules and guidelines for apps and content on the platform, thus securing Apple control and quality, while allowing flexibility for a diverse network of (potential) developers to create a large variety of apps under the same general regulations.

Ord: 198

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' means relating to existence or reality. The idea of 'ontological reversal' refers to the perceived switch of positions between physical carriers/representations of information and digital ones. Not many decades ago, physical representations were the norm. Digital ones have gradually replaced those and is now the norm in many areas of information systems. They often precede or entirely replace physical ones.

There are many advantages to digital information goods. They are reprogrammable and reproducible. This means that they can easily be changed, adapted or updated as needed and that they can exist in different versions and in numerous copies. This allows for more effective and flexible design of digital information systems. An example of this would be a flight ticket. With a physical ticket, only the original is valid and it can't easily be altered. To ensure legitimacy, it may be required to create a new one if any changes are needed. A digital one can be updated as changes happen, i.e. if a flight number or departure time changes. It can also exist in multiple places at once, both on in the customer account on all their devices as well as in the systems of the supplier and any middlemen. On the other hand, since no copy is the "original" as in information systems that are entirely physical, there may be questions regarding ownership.

Ord: 225

Besvarad.