GÖTEBORGS UNIVERSITET

STUDENT

0011-KLW

TENTAMEN

TIA315 Technology

Kurskod	TIA315
Bedömningsform	--
Starttid	01.10.2025 08:00
Sluttid	01.10.2025 10:00
Bedömningsfrist	--
PDF skapad	17.10.2025 13:18
Skapad av	Golsa Nouri Hosseini

HT25: 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 HT25, Question 1

Delegation and Prescription. Your colleague, Linda, argues that a digital artifact, like a password management app, only performs actions because humans program it. In that vein, she argues, it has no agency.

Latour introduces the concepts of *delegation* – the transferring of human action to non-human artifacts – and *prescription* – the capacity to impose behaviors back on human users. Use these concepts to explain how a digital password management app exercises material agency. Provide specific examples of:

1. what gets delegated to the app, and
2. how it prescribes behaviors back to users.

Skriv in ditt svar här

Digital password management apps exercise material agency because they have an influence on the socio-technical system. These apps enforce agency by influencing the overall network of humans and non-humans.They enforce certain behaviors onto the human, and influence the non-human actor (the website) by protecting it. The password management app is created by humans, but this does not mean that it does not have the ability to perform actions that are similar to human actions.

The password management app does a task that would otherwise be done by a human. In this particular example the password management stores password information and automatically fills it in at a website. This means that the task that the human had to do (namely, remembering the password, writing it down on a paper and then manually fill this in on the website) has been delegated to a machine.

It also has an influence on the user of the app. For instance, the password app has certain limitations. It could only allow the user to store a certain length of password, which will change the behaviors of the user by forcing him/her to be creative in making new passwords. It therefore has a certain prescribed behavior in it which is (make a long password). It therefore forces a human actor to perform certain actions.

Ord: 218

Besvarad.

2 HT25, Question 2

Affordances. Maria is working on her thesis about digital design. Studying the literature, she learns that affordances emphasize meanings over specific, inherent attributes of artifacts. While a focus on what users can do with artifacts seems attractive, she becomes frustrated reading that affordances are defined in *relation* to an observer or user. If an affordance is something relative, it seems pointless to her. How can such a subjective concept be useful for design?

What is Maria overlooking about affordances? Address specifically:

1. Why affordances, despite being relational, can still describe and explain general aspects of material artifacts, and
2. How this relational quality actually makes affordances useful for understanding and designing digital artifacts.

Skriv in ditt svar här

Affordances are not only important in the sense that it describes how people **are using** a technolgy (the relational element), it is also important in the sense that it describes the **potential** use of a certain object. This is a more stable way to look at a digital artifact. For instance, a chair might be used differently by different people, but the design of a chair prevents it being used by an elephant. It has a limited potential that seems to be a more fixed.

This relational quality makes affordances useful for understanding digital artifacts because they describe how, by whom and in what context a technology could be used. Therefore, affordances give valuable context to what a technology *really* is in relation to its use. It helps to describe both the real hard boundaries and its social an contextual usage.

Ord: 141

Besvarad.

3 HT25, Question 3

Digital Materiality. David sees no fundamental differences between physical products, like a car, and digital products, like a smartphone. To him, both are manufactured products. Explain to David why digital artifacts are inherently ***unbounded***, ***open-ended***, and ***incomplete***, in ways that physical products are not. Specifically:

1. Explain what each of these three characteristics means in the context of digital artifacts, and
2. Resonate on the properties of digital technology that enable these characteristics. Use a concrete example, if helpful.

Skriv in ditt svar här

The characteristics **unbounded** means that digital technologies are not restricted by physical limits, digital technologies can be shared across many devices and systems and they be send with ease across large spaces within seconds. This means that they are somewhat unrestricted by their underlying architecture.

Secondly, digital technlogies are incomplete because they often have elements that are left blank by the developers. For instance, streamlit as a website builder does not automatically show you the same website every time you open it up. It allows you to fill in the blanks and lets you produce a website yourself. It does this by providing you the building blocks and by not assembling this into something already finished.

Thirdly, digital technologies are open-ended in the sense that there is no clear end goal to the product. You can keep reassembling it continuously for new means and new purposes. This means that you can keep on producing new things with it and that the development of new products is never really finished.

An nice example of this is the python framework streamlit. It is unbounded in the sense that streamlit can be launched online and is not limited to the physical elements of my laptop. Secondly, streamlit consist of many building blocks that are not pre-arranged. It is like a open construction site, and you can build a plurality of things with it. Additionally, streamlit is open ended, the framework does not show in any way a predefined ideal website that users can strive for, therefore there are endless examples of websites for various uses.

The underlying elements that allow for this in digital technologies are that they are firstly non-material. Meaning that it can be easily shared without it being restricted by the physical world . Secondly, digital technologies are homogenous in the sense that all devices that are digital use the same language of binary numbers. And also these technologies are reprogrammable, meaning that they can be changed over time.

Ord: 329

Besvarad.

4 HT25, Question 4

Defining features of generative technology. During a product development meeting, Sarah argues that their company's new photo editing software is highly generative because it has many advanced features and can perform complex tasks efficiently. Her colleague responds that having sophisticated functionality doesn't necessarily make a system generative.

Using Zittrain's framework, address specifically:

1. What are the four characteristics that define generative technology, and
2. Apply each of these four characteristics to explain to Sarah what makes a product generative.

Skriv in ditt svar här

According to Zittrain the four characteristics that define generative technology are:

- capacity for leverage, which means that technologies can be used in a plurality of settings. Digital technologies can be used in various environments to achieve a number of goals. The photo editing software can be used for many types of pictures and in a number of situations and for many varying goals. This makes it a highly versatile technology. This means it has a high capacity for leverage.

- Ease of mastery, meaning that it is not difficult to master/use of the technology. In the case of the photo editing software this is not clear. It might be easily used by a majority of people depending on how easy and intuitive the UI is.

- Accessibility; this means that many people have access to the digital artifact, or could easily get access to the particular artifact. If it were easy to access by it being, for instance, easy to download and being very cheap then this would increase the generativity of the digital technology .

- Adaptability, the technology needs to be able to be reprogrammed (*reprogrammability)* which means that it can grow and develop over time. This also means that it can adapt to multiple situations and environments. It appears that the photo editing software does not have this particular trait as the underlying software code is not adjustable. Or at least not easily accessible.

Generally speaking I would argue that the coworker was right in saying that the technology that Sarah develops is not very generative. It does not seem to be either adaptable, easy to master and does not specify being accessible.

Ord: 277

Besvarad.

5 HT25, Question 5

The Paradox of Control and Generativity. Liam believes that creative freedom and openness are the primary drivers of innovation. To him, any form of control will inevitably hamper creativity. He is therefore confused by the academic literature on *generative governance*, suggesting that control can actually reinforce (strengthen) generativity.

Explain this apparent paradox to Liam. Address specifically:

1. How can control mechanisms increase generativity and innovation in sociotechnical systems, and
2. What distinguishes generative control from traditional, restrictive control. Use a concrete example, if helpful.

Skriv in ditt svar här

Control mechanisms can work by providing a general rule of how to build products. These mechanisms may, for instance, restrict certain apps through enforcing the use of certain frameworks. This would be an example of architectural control. By creating shared values and rules it is easier for complementaries to engage and communicate

Through mechanisms such as architectural restrictions and technical standards, the platform assures that all users can easily use and reuse each others creations, because the users are familiar with the language and frameworks being used. It enables both information exchange and the exchange of new innovative ideas between both the users and the platform and the users. This makes the platform more easy to use and increases reprogrammability and accessibility. In a way it centralizes information and makes it more useful and accessible, and in the process makes it more generative.

Generative control is different from traditional control as it is aimed at enforcing interaction from a buttom-up perspective and is aimed at increasing the overall use and adjustability of digital products. Traditional control is more hierarchical by nature and is more often aimed at restricting a system in order to comply with the goals of the owners.

Ord: 200

Besvarad.

6 HT25, Question 6

Resourcing and Securing. The company HomeEase has developed a new platform for the smart home. It aims to establish an open ecosystem, allowing third-party developers to create innovative applications. As the platform owner, HomeEase faces a key challenge: how to develop and deploy platform boundary resources (PBRs) that can both attract third-party developers and preserve platform control.

In the context of platform governance:

1. Explain what ***resourcing*** is and describe a scenario where HomeEase might engage in resourcing by designing new platform boundary resources.
2. Explain what ***securing*** is and describe a scenario where HomeEase might engage in securing through platform boundary resource (re)design.

Skriv in ditt svar här

Resourcing is the act of providing resources/possibilities to third-party developers to engage and extend a platform or ecosystem. The HomeEase platform might do this by providing API's to complementors like app developers who can now easily produce apps on the platform. Platforms could also do resourcing by informing complementors on how to use these API's and by providing e-learnings.

Securing is the ability of a platform to protect themselves and gain control over the platform. These are more restrictive measures that prevent the platform from becoming, for instance, uncontrolled or too large. App review systems and quality control standards could be fitting measures for securing a platform. An example of this would be that HomeEase would only allow a new app on the platform if it has reached certain specific quality standards.

Ord: 132

Besvarad.

7 HT25, Question 7

Ontological Reversal. 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

The ontological reversal means that instead of the digital realm representing merely an element in the physical realm. The digital realm becomes the center of value creation. Airplane tickets are a good example of this. Nowadays the airplane ticket is fully digitalized. The digital airplane ticket is not a representation for something else in the real world, but it is the thing in itself that you buy. The digital has become the center, most important element.

In the design of digital systems this has certain consequences. Firstly, it means that value has shifted to the digital realm meaning that you must think about some digital technologies being digital first. Secondly, this means that the digital artifact has a stronger impact on the lives of people. Which in return means that the ethical responsibility for the developer will increase significantly as his product has more impact on the user. This means that digital systems need to be designed with more care.

Ord: 160

Besvarad.