



GÖTEBORGS UNIVERSITET

STUDENT

0002-LLL

TENTAMEN

TIA301 Tentamen

Kurskod	--
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Bedömningsfrist	--
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i HT23 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 HT23 reexam Question 1

Describe the concept of *agency* and explain how it can be applied to understand the role of technology in a socio-technical system. Include an example of how technology is an agent of change.

Fill in your answer here

Agency is having capacity, either to act or bring out change in the network where the actor is part of. Actor Network Theory from the course clearly explains that human agency and material agency are very similar considering that materials(main focus on digital materiality) also have this capacity/property.

From the technological advancements recent years, agency of digital artifacts is clearly visible - consider recent example of Chat GPT, which is a digital artifact or a tool.. when it got introduced to society or businesses, the changes it brought in to all systems is evident, it had capacity to transform how people study, how they work and even their day to day work changed. Simple example of each scenario is businesses using the chat GPT algorithms to improve productivity for simpler and redundant jobs, students using it as a personalized mentor or general public using it as a vacation planner. A little earlier older example could be a platforms providing services like video call.. like whats app.. it transformed how people connect with each other, it made it easier for people to stay away from families either for work or studies etc., both these examples help us understand how technology is an agent of change, considering how these tools had capacity to change or impact the respective actors.

Ord: 217

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2 HT23 reexam Question 2

Use your own words to define the concept of *affordance*. Discuss its significance – how it can help us – in understanding the properties of material things.

Fill in your answer here

Before we touch the concept of affordance, I want to quickly bring how we traditionally describe material properties - example, using length, breadth, height, shape, weight, colour etc.,

Now, thinking about Digital Materials, it makes it difficult for us to describe them using similar properties, so the concept of affordance is helpful here. Concept of Affordance focuses on - for example properties like, "purpose of digital artifact" or "what it can do" rather than just focusing on the traditional properties. And, considering that these are relative to humans(because humans are the ones mainly using these digital artifacts) and situations, these affordances can change, especially due to the evolving nature of the digital artifacts itself.

Consider the simple example of click button on your login page, the affordance here being able to click and being able to navigate in to the next page. Lets take another example where affordances can be relative and dynamic based on the users - again using Chat GPT.. being able to act as trainer, vacation planner, mentor etc. can be considered as affordances of this tool. If we have to measure the properties of Chat GPT using traditional means, it becomes challenging. Hence concept of affordance is significant in describing the properties of Digital Materiality.

Ord: 209

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3 HT23 reexam Question 3

Identify one affordance that is distinctive to digital artifacts. Explain how this affordance is intrinsically linked to the digital nature of the artifact. In your response, select a specific example and argue how this digital affordance has influenced socio-technical phenomena, such as innovation, usage, business models, or organizational practices.

Fill in your answer here

Lets take an example of reprogrammability of digital artifact as an affordance. One of the main nature of digital artifact is that evolutionary, there are many scenarios where an intitial artifact was created with a purpose that is completely different than how it evolved in to the future and reprogrammability is often one of the main affordance that makes this evolution possible.

Taking an example off facebook.. consider that initially facebook as a platform was primarily created to bring friends together, later it became a market place for buyers and sellars and later more in to advertising platform etc., Being able to reprogram the tool to support all these functions brought out innovation in the areas of how people buy, sell, advertise, share the knowledge or information, transformed business. Though facebook is quoted as example here, reprogrammability of many digital artifacts like Linux, Mobile phones etc., completely transformed the areas of businesses, innovation, organizational practices etc.,

Ord: 156

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4 HT23 reexam Question 4

While the literature presents several perspectives on generativity, there is consensus that generative processes are *emergent*. Describe the characteristics of an emergent process and provide an illustration of how one such a process has played out in the development or evolution of a specific digital technology.

Fill in your answer here

Digital Artifacts are generative - being emergent is one of the four generative processes. Growth, transformation and being evolving in to something new can be considered as few characteristics of emergent process.

Taking example of mobile phone, intially it was merely an object with a function of being able to speak to people who are distant from each other. Todays, mobile phone is so much more than that. It emerged from just a device used to call, to being a reading platform, gaming platform, working platform etc.,

Ord: 87

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5 HT23 reexam Question 5

We have discussed the role of boundary objects as 'bridges' between different social worlds.

- Describe how a boundary object serves to connect these diverse groups.
- Analyze the usefulness of this bridging function in the context of design processes, particularly in fostering collaboration and innovation across distributed and interdisciplinary teams.

Fill in your answer here

I will try to answer these questions with an example of APIs/interfaces as boundary objects and with a scenario of Automotive Industry.

In the design of vehicle development - boundary objects act as bridges to share information with different design areas, an internal vehicle design example could be Brakes Module sending information that "park brake is applied" to Driver Information module, which then displays to the driver that "Park Brake is applied" on the console. The interfaces make this information sharing among these modules possible to have an effective design.

Taking another example could be the APIs bridging collaboration between Google(for Google Maps) and Driver Information Systems. This helped to have best driver assistance feature in the vehicle possible (as users got used to Google Maps than other navigation systems). APIs are one of the reasons to bring out this possibility.

Considering the above two examples, boundary resources are very useful to foster collaboration and innovation across distributed and interdisciplinary teams.

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6 HT23 reexam Question 6

Give a concrete example of a platform boundary resource, as discussed in our course. Explain how it is useful to (1) the platform owner and to (2) an independent application or service developer.

Fill in your answer here

Take an example of Apple iOS Platform boundary resource, where Apple is owner of the platform owner and all the app developers who develop applications for iOS as service developers.

In Apple iOS platform, a boundary resource, (eg. SDK), enables business by bringing users and developers together. It is useful for developers because they get an opportunity to sell/share their applications with wide users and it enables the reach. For the platform owners, it enables business easily. Having these boundary resources helps integrate the apps in to the platform seamlessly and enables platforms and developers improve their users experience.

Ord: 99

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7 HT23 reexam Question 7

As established firms take on digital innovation, they encounter various competing concerns that need to be carefully managed. Identify one such competing concern that arises specifically due to the process of corporate digitalization. Explain the origin of this competing concern and resonate on how firms can balance or mitigate it.

Fill in your answer here

Digital Innovation although essential in businesses, is still challenging process especially in huge and complex organizations.

One of the digitalization examples that I can quote from the recent trends which firms focused in "Supply Chain Management". Traditionally, supply chain is not as digitalized as it is transforming today - today the firms want to manage each and every step from sourcing raw materials to delivering to the customer due to several reasons like maintaining ethical sourcing, ensuring sustainability, having alternative solutions in case there are disruptions etc.,

Though the digitalization in supply chain management is needed, few challenges involved are - usage and complexity of new technologies like block chain or digital twins, having all actors in the ecosystem being ready for the transformation, need for skill upgradation etc., To balance these risks and mitigate them, one of the solutions currently firms are using is a mix of traditional methods and taking digitalization section by section in the organization and working with the suppliers. They are also working on upskilling the personnel to enable the transition smoother.

Ord: 175

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