Faculty of Economics and Business
University of Indonesia

# Mid-term Exam 2019

# Digital Economics (ECEU602308)
## Instructor: Ibrahim Kholilul Rohman
## Monday, October 21, 2019
## Time: 2.5 hours (closed book)

**Instructions**

- There are mandatory and optional questions

- You might answer these questions in Bahasa Indonesia or English, but please do not mix except for technical terms.

- You might elaborate your arguments using graphs, data and or numerical examples. Evidence based is important.

- **Read through all questions first and wisely allocate the time. These questions require concise answers.**

**Mandatory**

1. **(15 points)** Just in early 2019, I was invited to be one of examiners for a writing competition at FEBUI. The topic was about Industry 4.0.  After listening to the presentations—some of them were indeed great, I asked each finalist if they know who Klaus Schwab is. To my surprise, literally **NONE** of them knew who he is/was. Thus, it became quite embarrassing as Prof. Schwab was the one introducing the concept of Industry 4.0 in his book *"The Fourth Industrial Revolution"* published by the World Economic Forum (WEF) – a main theme of the writing competition. To avoid the same story, you are asked to complete the following table identifying main authors and titles of books discussed in the course of Digital Economics (ECEU602308):

| No | Title of the book | Name of author(s) or editor(s) | University affiliation* | In a sentence or two, what is the main theme of the book |
|---|---|---|---|---|
| 1. | ………………………………… . | F.M. Scherer | …………………………….. | …………………… |
| 2. | The New ICT Ecosystem | ………………………………….. | …………………………….. | …………………… |

| No. | | | | |
|---|---|---|---|---|
| 3. | The economics of digital market | …………………………… …. | ………………………… .. | …………………… |
| 4. | …………………………… .. | …………………………… …. | ………………………… .. | This book discusses about intellectual property from both the economic and management approaches. This encompasses history and strategy in modern patent eras. |
| 5. | …………………………… …. | Hal Varian (Farrel and Saphiro) | ……………………… .. | ……………………… … |

*when the book is written as affiliation might change often

2. **(25 points)** You will find 40 concepts and keywords discussed in Digital Economic course listed below. Construct **five** elaborated short paragraph using these keywords. At least you are about to use **5 keywords** in each short paragraph consisting 4-5 sentences- you might go on as long as you wish, but 4-5 sentences sound decent. Convince the reader that you comprehend the meaning of the concepts and you are able link them in a coherent presentation.

| digital divide | telecommunication | two-sided market | lock-in | Solow productivity paradox |
|---|---|---|---|---|
| adoption | Universal Service Obligation | demand side network externality | research and development (R&D) | supply side network externality |
| sailing ship effect | the waterbed effect | penetration rate | bill and keep | switching cost |
| Economic of space | network effect vs. competition effect | network element provider | over the top (OTT) | critical mass |
| invention | electronic commerce | chasm | receiving call party | Internet and platform |

| price basket | secrecy | mobile termination rate (MTR) | average revenue per user (ARPU) | creative destruction |
|---|---|---|---|---|
| patent strategy | economic of scope | intellectual property | EU-US productivity gap | broadband |
| digital economics | ICT ecosystem | plain old telephony services (POTS) | diffusion | innovation |

3. **(20 points)** How can the framework of the ICT ecosystem be helpful to analyze the progress of the digital economy? Can you accentuate this case for Indonesia?

4. **(20 points)** In a network industry where WTP = $ax^2 + bx + c$.

   a. Draw the WTP curve.

      i. Assume that MC =0, draw the price line.

      ii. Explain the graph thoroughly, identify where are the critical mass point and the long run equilibrium point?

      iii. Explain the properties of the graph: why do we have flat price line and the inverted U-willingness to pay?

   b. Assume you are in e-commerce or a ride-sharing platform, simulate the following cases in a separate graph- each graph denotes to each case. Identify the impact of these cases for the producer, the platform and the consumer. IF the impact is foreseen to be negative for producer, what indicative policies needed to mitigate?

      These are stand-alone scenarios so everything else held constant *(ceteris paribus)*.

      i. The government introduced "the digital tax"

      ii. The new investor put some money to strengthen the working capital and the investment

      iii. The government mandated the platform to sell 50% local product vis-à-vis previous condition where they are not responsible for the origin of the products.

      iv. The marginal cost becomes more expensive thus MC!=0.

      v. As the CEO of **"Bojek",** you received a letter from the Ministry of Labor Force demanding all ride-sharing companies to cope with the standard minimum of salary (UMR) and other employment benefits.
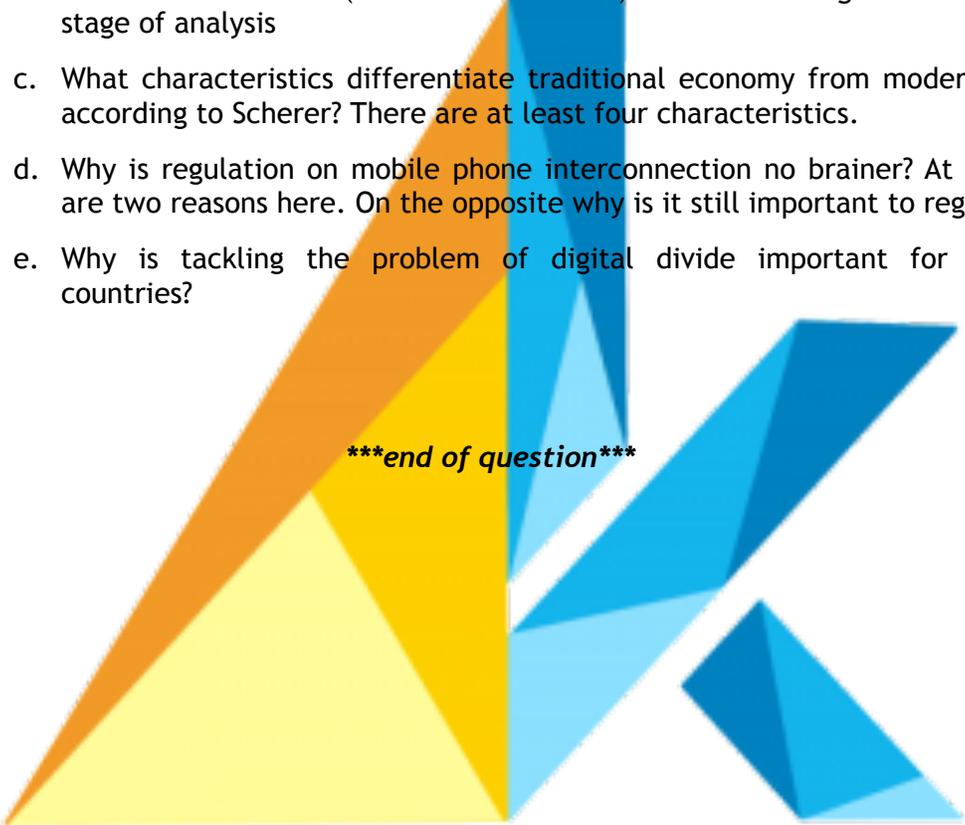
**Optional**

5.  Select two from four issues below (each worth **10 points)**

    a.  Why are robust policies related to R&D and digital economics important based on the study explaining the EU-US productivity gap? There are at least two reasons here

    b.  Explain the methodology used by Röller and Waverman (2001) to estimate to contribution of ICT (telecommunications) on economic growth? Explain the stage of analysis

    c.  What characteristics differentiate traditional economy from modern economy according to Scherer? There are at least four characteristics.

    d.  Why is regulation on mobile phone interconnection no brainer? At least there are two reasons here. On the opposite why is it still important to regulate?

    e.  Why is tackling the problem of digital divide important for developing countries?

***end of question***