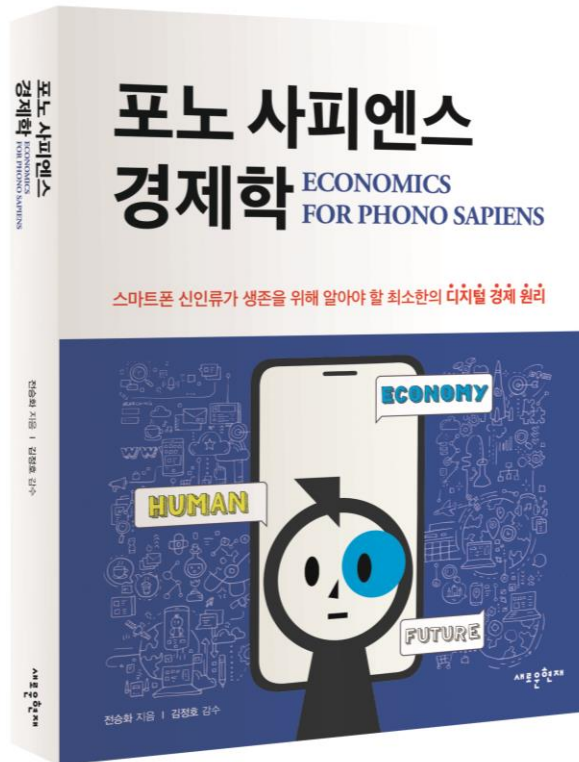


Paul Dean, Soo Bin Hwang, Seunghwa Jun

UofTSTG201905DATA3 | Oct 10, 2019



CREATING

⋮

(Maybe the World's First!)

⋮

Economics Book!

With Interactive Online References!!

1      **Project Outline**

2      **Reference List & Search**

3      **Reference Dashboard**

---

4      **Latest Articles**

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# 1 Outline

Creating the **Online Reference Database** and the **Interactive Functions** for the book titled << *Phono Sapiens Economics : The New 'Human-Centered Digital Economy'* >>

- The book was published in Korean in this September (paper and e-book) and will be e-book published in English in January 2020.
- Team members' names will be listed in the 'Acknowledgements.'

[ In Korean bookstores ]





# PhonoSapiens Economics

## Reference List and URL Links

5 Filter Searches  
(Part / Chapter /  
Page / Institution /  
Language)

Automatic Reference Table with URLs  
(When clicked, it opens a new window  
of the linked website)

Filter Search	Part	Chapter	Page	Institution	Language	Keyword	URL
Enter a Part I/II/III/VI	Prologue	Prologue	7	Economist	EN	Phono Sapiens	<a href="https://www.economist.com/leaders/2015/02/26/planet-of-the-phones">https://www.economist.com/leaders/2015/02/26/planet-of-the-phones</a>
Enter a Chapter 1 to 14	I	1	28	Pew Research Center	EN	World Wide Web timeline	<a href="https://www.pewinternet.org/2014/03/11/world-wide-web-timeline/">https://www.pewinternet.org/2014/03/11/world-wide-web-timeline/</a>
Enter a Page 1 to 325	I	1	32	GSMA	EN	Smartphone Users	<a href="https://www.gsmaintelligence.com/research/?file=b9a6e6202ee1d5f787cfbb95d3639c58download">https://www.gsmaintelligence.com/research/?file=b9a6e6202ee1d5f787cfbb95d3639c58download</a>
Enter an Institution Institution	I	1	35	McKinsey	EN	Rethinking Car	<a href="https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/rethinking-car-software-and-electronics-architecture">https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/rethinking-car-software-and-electronics-architecture</a>
Enter a Language EN/KOR	I	1	35	McKinsey	EN	5G and Autonomous Car	<a href="https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/development-in-the-mobility-technology-ecosystem-how-can-5g-help">https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/development-in-the-mobility-technology-ecosystem-how-can-5g-help</a>
Filter Table	I	1	39	GSMA	EN	Understanding 5G	<a href="https://www.gsma.com/futurenetworks/wp-content/uploads/2015/01/2014-12-08-c88a32b3c59a11944a9c4e544fee7770.pdf">https://www.gsma.com/futurenetworks/wp-content/uploads/2015/01/2014-12-08-c88a32b3c59a11944a9c4e544fee7770.pdf</a>
Reset Table	I	1	39	GSMA	EN	5G, Future Network	<a href="https://www.gsma.com/futurenetworks/technology/understanding-5g/">https://www.gsma.com/futurenetworks/technology/understanding-5g/</a>
	I	1	39	GSMA	EN	From 4G to 5G	<a href="https://www.gsma.com/futurenetworks/wp-content/uploads/2017/03/T04_GSMA_unlocking_comm_opp_report_v5.pdf">https://www.gsma.com/futurenetworks/wp-content/uploads/2017/03/T04_GSMA_unlocking_comm_opp_report_v5.pdf</a>
	I	1	39	GSMA	EN	Mobile Infrastructure	<a href="https://www.gsma.com/publicpolicy/wp-content/uploads/2018/02/GSMA_DigitalTransformation_Delivering-the-Digital-Revolution.pdf">https://www.gsma.com/publicpolicy/wp-content/uploads/2018/02/GSMA_DigitalTransformation_Delivering-the-Digital-Revolution.pdf</a>
	I	1	39	Visual Capitalist	EN	Comparing 4G and 5G	<a href="https://www.visualcapitalist.com/the-future-of-5g-comparing-3-generations-of-wireless-technology/">https://www.visualcapitalist.com/the-future-of-5g-comparing-3-generations-of-wireless-technology/</a>
	I	2	41	Visual Capitalist	EN	50 Million Users	<a href="https://www.visualcapitalist.com/how-long-does-it-take-to-hit-50-million-users/">https://www.visualcapitalist.com/how-long-does-it-take-to-hit-50-million-users/</a>
	I	2	42	Forrester	EN	Metcalfe's Law	<a href="https://go.forrester.com/blogs/beyond-moores-law-how-exponential-technology-will-drive-disruption/">https://go.forrester.com/blogs/beyond-moores-law-how-exponential-technology-will-drive-disruption/</a>
	I	2	42	HBR	EN	Network Effects	<a href="https://hbr.org/2016/04/network-effects-arent-enough">https://hbr.org/2016/04/network-effects-arent-enough</a>
	I	2	42	WEF	EN	Moore's Law	<a href="https://www.weforum.org/agenda/2015/04/whats-beyond-moores-law/">https://www.weforum.org/agenda/2015/04/whats-beyond-moores-law/</a>
	I	2	43	Ericsson	EN	Mobility Report (2019)	<a href="https://www.ericsson.com/49d1d9/assets/local/mobility-report/documents/2019/ericsson-mobility-report-june-2019.pdf">https://www.ericsson.com/49d1d9/assets/local/mobility-report/documents/2019/ericsson-mobility-report-june-2019.pdf</a>
	I	2	43	Forrester	EN	Deceptive Nature of Exponential Change	<a href="https://www.ayasdi.com/blog/artificial-intelligence/the-deceptive-nature-of-exponential-change/">https://www.ayasdi.com/blog/artificial-intelligence/the-deceptive-nature-of-exponential-change/</a>
	I	2	43	Forrester	EN	Deceptive Nature of Exponential Change	<a href="https://www.forrester.com/report/Move+Your+Big+Data+Into+The+Public+Cloud/-/E-RES136229">https://www.forrester.com/report/Move+Your+Big+Data+Into+The+Public+Cloud/-/E-RES136229</a>
	I	2	43	GSMA	EN	Mobile Internet Users	<a href="https://www.gsmaintelligence.com/research/?file=b9a6e6202ee1d5f787cfbb95d3639c58download">https://www.gsmaintelligence.com/research/?file=b9a6e6202ee1d5f787cfbb95d3639c58download</a>

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1      **Outline of the Project**

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2      **Reference List & Search**

3      **Reference Dashboard**

4      **Latest Articles**

---

### 3 Reference Dashboard

#### Displaying detailed consultant info using dropdown menu

Consultant Name:

WEF ▼

##### Consultant Info

Institution:

WEF

Referred to in Parts:

I,II,III,IV

Referred to in Chapters:

2,4,6,7,8,10,11,12,13,14

Referred to on Pages:

42,45,49,80,81,121,147,162,164,165,195,201,235,262,263,271,284,296,297,315,316

Key Terms:

Moore's Law, Technological Tipping Points , Inequality in USA, Digital Transformation, Fourth Industrial Revolution, Digital Revolution, Human-Centered Economic Progress, End of Capitalism, AI, AR/VR, Blockchain (Creative Economy), Talentism , LawGeex and AI , Future of Jobs , Readiness for the Future Production Report, Future of Production, Future of Retail, Sharing Economy , The Future of Jobs, 2022 Robot Adoption Rate, 2022 Skills Outlook , Future Employment Model, Alibaba Ecosystem, Organization Transformation, Putting People at the Center, Trust in Government , Trust Gap

### 3 Reference Dashboard

#### Overview of Steps

Consultant Name:  
WEF

Consultant Info

Institution:

WEF

Referred to in Parts:

I,II,III,IV

Referred to in Chapters:

2,4,6,7,8,10,11,12,13,14

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Key Terms:

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Import data from JSON file into app.js using `d3.json().then`

Collect the consultant name selection using `element.property('value')`

Filter the data using that consultant name, and create lists of unique parts, chapters, etc. using `if(list.includes(item))` statements

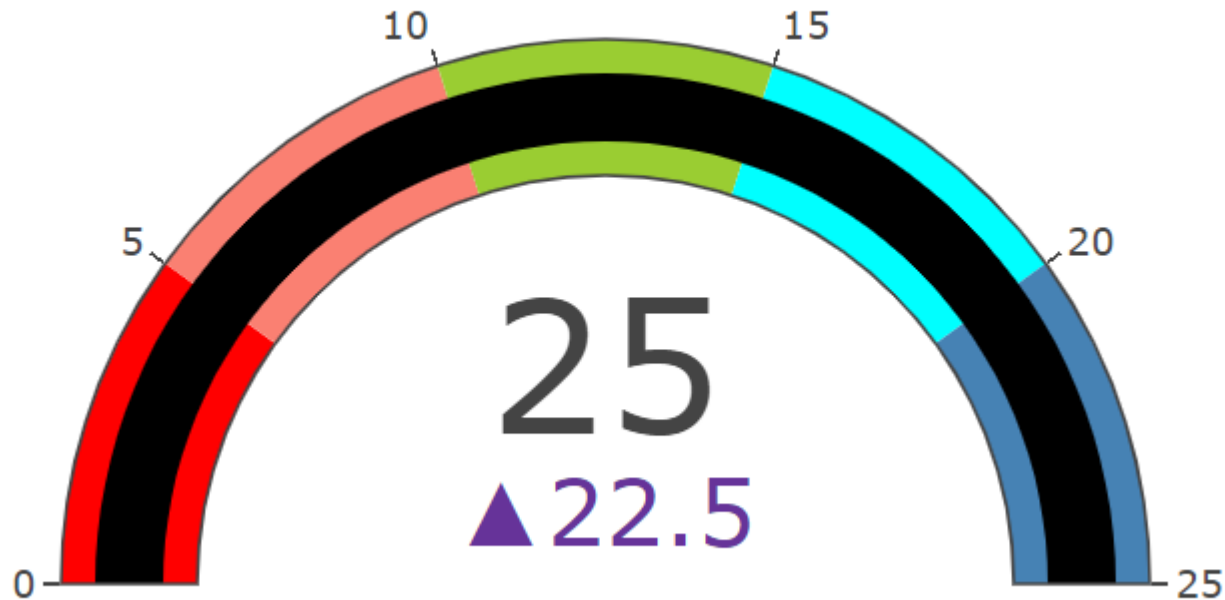
Print data to the info box by iterating through those lists



### 3 Reference Dashboard

Displaying gauge info using dropdown menu

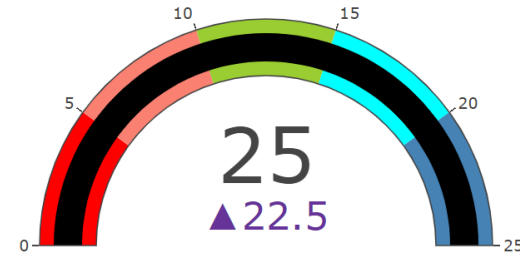
Number of References of Institution vs Mean



## 5 Reference Dashboard

### Overview of Steps

Number of References of Institution vs Mean



Import data from JSON file into app.js using `d3.json().then`

Collect the consultant name selection using `element.property('value')`

Filter the data using that consultant name, and collect the number of times that consultant name was referenced

Feed that reference count amount into plotly using mode: 'gauge+number+delta'

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1      **Outline of the Project**

---

2      **Reference List & Search**

---

3      **Reference Dashboard**

---

4      **Latest Articles**

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## 4 Scraping Latest Articles

Visit each website and scrape the top search result.

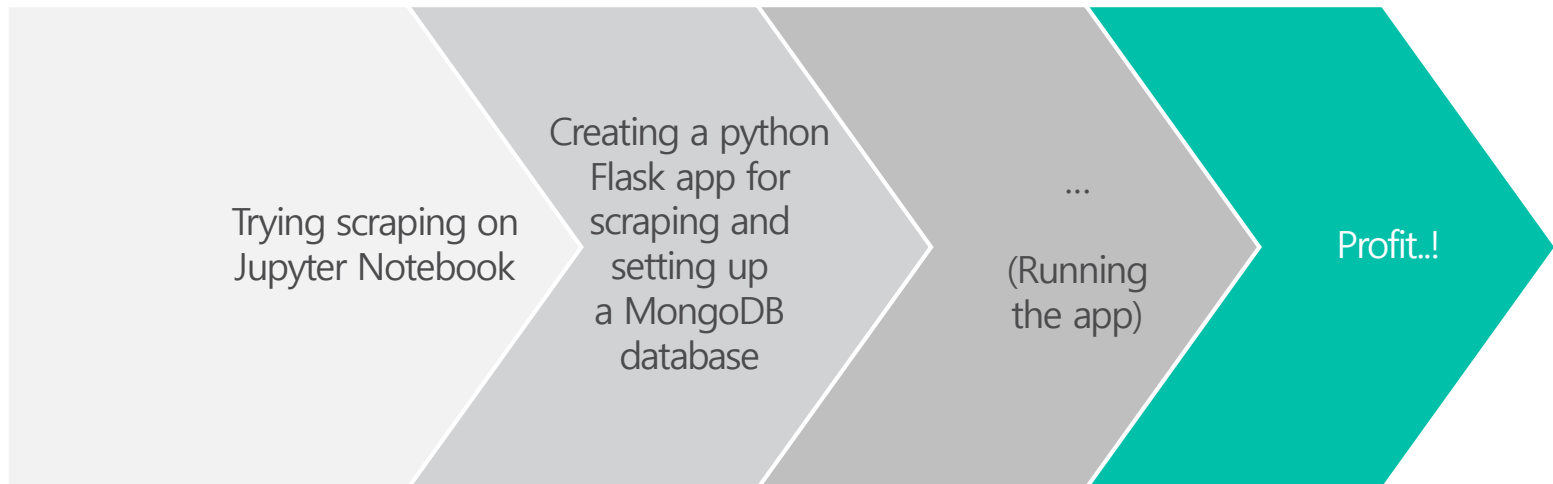
Insert company images and show titles of each article retrieved.

### [ Methods used ]

Python (Flask, Jupyter Notebook)  
JavaScript (Bootstrap)  
MongoDB  
HTML

### [ Python libraries used ]

Flask	Requests
Pymongo	Time
BeautifulSoup	Splinter



# Latest Articles

Click the button below to retrieve the latest articles about digital economy from the frequently sourced references.

To visit the website, click the company image.  
To read the article, click the title of each article.

Search



## Shaping the Future of Digital Economy and New Value Creation ...

Currently, about 50% of the world's population does not currently participate in the digital economy at all – and growth in internet adoption is slowing. The G20's ...



## Powering the digital economy

The economics of energy are changing: cheaper storage is bending the electricity cost curve, giving a boost to charging stations. Utilities meanwhile are refining... strategies and raising their digital game.



## How Technology is Disrupting the Construction Industry



## What Big Consumer Brands Can Do to Compete in a Digital Economy

Companies like P&G need to adapt to compete with the likes of Amazon.



## Google Pay Is Evolving Into A Platform To Grab A Slice Of India's Growing Digital Economy



*Thank you~!*

