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## LEARNING MORE, DISCOVERING MORE AND SHARING MORE

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### ABSTRAK

In the era of Industry 4.0 and disruption many of us are quickly reduced to becoming amateurs because of the rapidness in changes of knowledge and technology. We need to learn more new ideas, discover more new ideas and hence, share more new ideas. Combining these with altruism and God-consciousness, Muslims today are obliged to become prosumers and can no longer afford to be consumers. Da'wah must be more technology friendly, and the message to be shared should be a blend of the ancient and the modern.

**Keywords:** 'ilm, da'wah, networks, prosumers.

### INTRODUCTION

In analogy to spider webs, there are many real-world webs. Examples are the World Wide Web, the internet, social networks, power line, and airline networks. Some of these are made by humans but others are natural. Networks are made up of nodes (usually represented by black coloured circles) and links (represented by lines). Imagine the many domestic and international airlines routes flying in or out of airports over the map of Malaysia. There are only several airports including KLIA and KLIA2 that have more routes than the others. In network or graph theory these major airports are called hubs (large nodes) while the other smaller airports are called nodes. The airline routes joining the different nodes are links.

As of 28 November 2020, the Covid-19 pandemic has infected 61,964,850 people and resulted in 1,448,285 deaths worldwide<sup>1</sup>. Contact tracing is aggressively used to control the spread of the pandemic. There are many examples today where network analysis and visualisation are very useful for contact tracing to alleviate a disease outbreak<sup>2</sup>. In the present context each node represents a person who may either (i) be infectious (ii) have been tested and infected, (iii) tested but not infected or (iv) not tested yet. Each link represents a contact between two people. A hub represents an infectious person with many links. If a network obeys power law, then there are only several hubs and many nodes with lesser links. The larger hubs are the disease super spreaders. To treat such networks, one needs to quickly identify these super spreaders, their close and casual contacts followed by treating and monitoring them. Interestingly, if we consider a community made up of a network of people then ideally, we want the disease to spread slowly through this network.

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<sup>1</sup> [https://www.worldometers.info/coronavirus/?utm\\_campaign=homeAdvegas1?](https://www.worldometers.info/coronavirus/?utm_campaign=homeAdvegas1?)

<sup>2</sup> <https://orgnet.com/contagion.html>

In contrast, for the very same network if we want to share knowledge or urgent information the diffusion or broadcasting should be fast. The latter also implies one must take advantage of technology such as network analysis and machine learning for effective da'wah.

The prime concern of this article is to understand the challenges and opportunities to share knowledge ('ilm) with the above background in mind. In the next section we give a brief discussion on the meaning of 'ilm. In section 3 we highlight the challenges of 'ilm diffusion. How to attract people to your message is suggested in section 4. Prosumerism make up section 5, and the paper ends with some conclusions.

### Understanding the meaning of 'ilm

According to the renowned Islamic historian Rosenthal 'ilm is Islam. This is because there is no branch of Muslim intellectual life, of Muslim religious and political life, and of the daily life of the average Muslim that has remained untouched by the all-pervasive attitude toward "knowledge" as something of supreme value for Muslim being<sup>3</sup>. Zarkasyi recently have compared the meaning of 'ilm as given by Bediuzzaman Said Nursi and Syed Mohammad Naquib al-Attas. Nursi's definition of knowledge is description of thing obtained in the mind, either in the form of conception (taṣawwur) or judgment (taṣdiq). Al-Attas has two definitions:

1. Knowledge is of God and interpreted by the self through the faculties of body and soul, and thus knowledge is the arrival of meaning of thing or object on the soul of knowledge seeker.
2. Knowledge is the arrival of the meaning of a thing or an object of knowledge<sup>4</sup> in the soul; and the arrival of the soul at the meaning of a thing or an object of knowledge. Both Nursi and al-Attas share a common conviction that modern science is neither neutral nor value-free; it is dominated by theories and principles derived from secularistic and atheistic-naturalistic worldview. They are of the opinion the object of 'ilm is related to not only to empirical world, but also non-empirical world. Therefore, 'ilm is not just about knowledge. It is about theory, action and education that lead to Prophetic virtues, wisdom, and God-consciousness.

### Challenges Of 'Ilm Sharing

There are three main challenges when sharing 'ilm. These are tacitness, stickiness and dispersiveness<sup>4</sup>. Tacitness concerns on intangible knowledge which may be difficult to be extracted and converted to tangible explicit knowledge. The former need to be captured, documented, or codified to end up in electronic, print or multimedia form. The reasons for this are first, our knowledge stays within our heads, usually not captured, and not shared with others. Second, if we die or become critically ill this intangible knowledge will not be

<sup>3</sup> Hamid Fahmy Zarkasyi. 2018. *Knowledge and Knowing in Islam: A Comparative Study between Nursi and al-Attas*. GJAT 8: 31-41.

<sup>4</sup> Kristina Bogner. 2019. *United we Stand, Divided we Fall - Essays on Knowledge and its Diffusion in Innovation Networks*. Doctoral Thesis. University of Hohenheim.

accessible. Third, others may not be able to replicate successful solutions (and scale up of what works) or learn from failures to avoid mistakes. To drive home this point, an excellent example has been illustrated through the tremendous efforts to compile and safeguard the authenticity and sanctity of the holy Quran and hadith.

Knowledge stickiness is about (i) the kind and amount of knowledge to be transferred, and (ii) the attributes of the sender and/or receiver of the knowledge. Here, it may be a technological challenge because of the limiting bandwidth capacity of the communicating channel; perhaps because of unfavourable signal- to-noise ratio. It may also be a human factor issue involving the adoption of wisdom (hikmah) to reach out to your audience.

Dispersiveness of knowledge is in comprehending coherent and correct interpretation. A very good example is the story of three blind men and an elephant. One will be touching the trunk; one will be touching the tail and the other touching the leg of the elephant. Each will have his own interpretation and perspective of what an elephant is. The prerequisite for discovering more and sharing more is leveraging on lessons from history. In other words, one has no choice but to learn and acquire 'ilm before introducing new 'ilm and sharing.

### **Attracting People to Your Message<sup>5</sup>**

It is not enough for one to be good in his work or skills to make da'wah. He or she needs to also be findable. As an example: virtually everyone can develop his or her own website. But how does one ensure many viewers will gravitate around the website? Navigation and grouping information in your website are the keys. So are the language used and rapid outreach as well as response system. It is widely known that the social media is very useful for da'wah<sup>6</sup>. Often.

Yet, people are very interested in both the outcome and the processes involved. The sharer will be deemed as selfless when sharing his 'ilm, and the method he adopted to acquire the 'ilm. This way the interested viewers will be motivated and will have the know-how to replicate the shared idea.

Share something small every day. Do not be secretive (unless necessary) and hoarding your ideas. Continue to post online bits and pieces of your work and what you have learned. You will then be able to leverage on your network to gain fellowship, feedback, and patronage.

Network analysis, visualisation, big data analytics and profiling are also use-ful to optimise your da'wah activities. It is beyond the scope of the present paper to articulate these. However, be sure you are not violating the law such as the Data Protection Act 2010 (PDPA).

### **Be Prosumers and Not Consumers**

<sup>5</sup> Austin Kleon. 2014. *Show Your Work!* New York: Workman

<sup>6</sup> Aini Maznina A, Manaf. 2018. Dakwah Melalui Media Baharu Di Malaysia: Peluang Atau Cabaran? *Al-Hikmah* 10: 119 – 128.

It was several years ago when the author got acquainted with Citizen science, while waiting for his daughter to receive her degree scroll from the University of Sheffield. Emeritus Professor William Leatherbarrow was conferred an honorary Doctor of Science degree then and was introduced as a well-respected authority on Slavic literature. Interestingly, he is also a noted amateur astronomer and was the president of the British Astronomical Association for the period 2011-2013. Professor Leatherbarrow, in his acceptance speech, urged the audience to close the gap between two cultures with special reference to C. P. Snow's book *The Two Cultures and the Scientific Revolution*: literary intellectuals at one pole – at the other, scientists. *The Times Literary Supplement*, in 2008, included the book in its list of the 100 books that most influenced Western public discourse since the Second World War.

Citizen science is the public involvement in inquiry and discovery of new scientific knowledge. The fields that it advances are diverse, including computer science, medicine, and psychology. People not necessarily scientists, from different background and expertise, may contribute to projects that involve several to many individuals collaborating towards common goals. Personalities like C. P. Snow and William Leatherbarrow have shown how to connect the dots. That is to benefit from the two cultures and innovate for the sake of humanity. So have Ibnu Sina (Avicenna) and Al-Biruni, and the list goes on. Citizen science, crowd funding, open source, and Creative Commons licences are just a few examples of people getting together to learn more, discover more and share more.

The current Movement Control Order (MCO) has open the door for us to learn new skills from YouTube, like different ways of tying necktie knots, baking cakes and playing a musical instrument. In fact, anyone with a little motivation may make some money by writing articles on HubPages or posting videos on YouTube teaching others his or her skill. More importantly, consumers will be able to access freebies available on the internet because of active peers learning more, discovering more, and sharing more. This has a knock-on effect of reducing the costs of products. The portmanteau 'prosumer' comes from the words: 'producer' and 'consumer'. It was first coined by Alvin Toffler in his 1980 book *The Third Wave*. It is about empowering the ordinary consumers and has the potential to revolutionise the sharing economy by active participation of consumers. It also means consumers are also producers. Today, many of us are already prosumers because we benefit from the latest technologies. There is the case of the urban electricity 'prosumer', a consumer of electricity who also produces it and can sell it back to the grid, often through a rooftop solar photovoltaic system. For major cities in developing countries, these prosumers could be an essential ingredient in meeting the growing need for electricity.

Malaysia has recognised the importance of digital transformation from as far back as the 1990s, with the establishment of the National IT Council as well as the launch of initiatives such as the National IT Agenda and the Multimedia Super Corridor. Digital Malaysia is also very much aligned to Industry 4.0 which is a result of the rapid advancement in ICT. What is the impact of the Covid-19 pandemic on the pace of digital transformation? Are organisations, especially small and medium enterprises (SMEs), now more inclined to

invest in automating and digitalising their operations, and are companies in general accelerating their digital transformation plans in the wake of the pandemic?

Malaysia Digital Economy Corporation (MDEC) director of business digital adoption Muhundhan Kamarapullai<sup>7</sup> says the pandemic has been a wake-up call. “Covid-19 has definitely altered the drive for digital transformation where, in order to sustain and survive, businesses need to inject digital [technology] into their business operations.” In digital skills development, initiatives such as MDEC’s #mydigitalmaker aims to impart skills like coding, app development, 3D printing, robotics, embedded programming, and data analytics and expose students to careers related to digital technology. The goal is to transform Malaysian youths from digital consumers into digital producers. It is because of the availability of the World Wide Web and advances in ICT such as the internet of things, big data, deep learning and 3D printers now is the right time for the realisation of the prediction by Alvin Toffler back in 1980 on the rise of prosumers.

Human beings are highly intelligent primates that have become the dominant species on Earth. We have been created by Allah SWT to solve problems as described in Surah Al-Balad verse 4 the meaning of which “We have certainly created man into hardship”. However, for every hardship there will be ease as Allah SWT mentioned in Surah As-Sharh verses 5 to 6: “For indeed, with hardship [will be] ease. Indeed, with hardship [will be] ease”. Problems can easily be managed if humans are creative and innovative. A simple definition of creativity is connecting dots, making connections where none existed before. Innovation may be defined as taking creativity to the next level i.e. to implement the creative ideas. Examples of innovations are the typewriter by Christopher Sholes, the early computer by Charles Babbage in the early 19th century, the light bulb by Thomas Edison and the telephone by Alexander Graham Bell.

There are four types of innovations<sup>8</sup>.

- i. Incremental innovation – Incremental changes to existing products, projects that are typically focused on line changes or improvements in a firm’s existing product offerings.
- ii. Differential innovation – New products for the same markets, moderately innovative products for existing markets.
- iii. Radical innovation – New products for new markets.
- iv. Breakthrough innovation – New products that create new markets that usually refer to revolutionary change in firms, markets and industries, which provide substantially higher customer benefits relative to current products in the industry

The following is an example to illustrate the types of innovation as shown in Figure 1.

<sup>7</sup> The Edge, <https://www.theedgemarkets.com/article/overview-making-digital-leap>

<sup>8</sup> <https://innovationmanagement.se/2013/07/29/risks-of-incremental-differential-radical-and-breakthrough-innovation-projects/>

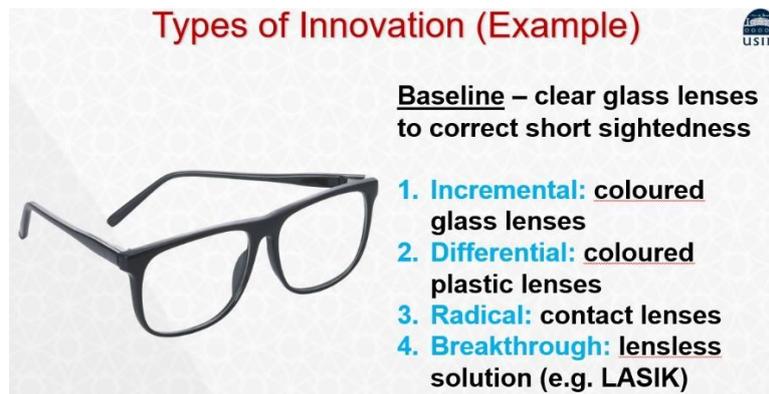


Figure 1: An example to illustrate the types of innovation.

How do we get that spark or Aha! moment (or Eureka!) to trigger the innovation? Strategic Intuition is a technique to achieve this. It is popularised by William Duggan<sup>9,10</sup> through his books *Napoleon's Glance* and *The Art of What Works*. Duggan states that Eureka! was a very important factor for the successful Napoleon Bonaparte military campaign where decisions were made by combining an analysis of experience and insight. The four elements of Strategic Intuition are examples from history, presence of mind (expect the unexpected), flash of insight (Eureka!) and the resolution to move forward and confront obstacles.

Another useful technique is TRIZ: The Russian acronym for the “Theory of Inventive Problem Solving” and developed by Genrich Altshuller. He discovered that 90% of patents involved solutions close to the problems.

Advanced Systematic Inventive Thinking (ASIT) by Dr Roni Horowitz on the other hand, has simplified TRIZ into five tools. The five tools are the multiplication tool (fish will make fish tasty), division tool (rocket multistage fuel combustion), breaking symmetry tool (car headlamp), removal/trimming tool (helicopter rotor) and unification tool (flow of grains in a curved pipe). Mostly, the solution is near the problem and one is encouraged to ask ‘Is the problem also the solution?’ Prosumerism as described by Alvin Toffler developed through three waves. The first wave was an Era of Agrarian Economy thousands of years ago. People in this era produced products for their own daily consumption and land was the basis of life, politics, culture, family, and structure. The sources of power are human and animal muscle power, water, and wind while the important tools are winches, catapults, winepress, wedges, hoist, and levers. Three major innovations in this era are accurate clocks, printing press and new development in iron and steel. The second wave was the industrial revolution or industrial age. This age utilised sources of energies and the establishment of managerial concepts such standardization, specialization, synchronization, corporation and centralisation. Production of goods and services for the market mushroomed and people

<sup>9</sup> William Duggan. 2003. *Napoleon's Glance: The Secret of Strategy*. USA: Columbia Business School Publishing.

<sup>10</sup> William Duggan. 2003. *The Art of What Works: How Success Really Happens*. USA: McGraw-Hill.

concentrated on energy, money, and power. Imperialism took place and it happened to spread civilization and it transformed small scale trading into big business. The second wave happened until the 17th century. The third wave is, the information or knowledge age. The concept of Do-It-Yourself (DIY) rise since 1970 when a do-it-yourself pregnancy test kit invaded the pharmacies of France, England, Hol-land, and other European countries. People also learnt to carry out surgical proce- dures, handle self-examination of breast and pap smears, and handle stethoscope and blood pressure. The self-care idea was trending and accepted by the people. It was about empowering the ordinary consumers.

Prosumerism is best described by how the media industry is today. Media digitisation and decentralisation have disrupted the incumbents by bringing down prices and increasing share options for consumers. The advent of social media has significantly increased the opportunities for the common people in cities and rural areas to create, distribute and profit from their innovative minds without going through the conventional media company. Living proofs include the international and local celebrities: Justin Bieber, Najwa Latif and Naim Daniel. They started their career after they were discovered through their videos in YouTube. The same goes for news and publications; there are many bloggers, independent writers supplementing the mainstream media and self-made authors. These talented and passionate amateurs are prosumers, and it is not all about money, and the best part is many of their contributions are made available for free. Today, we can easily download free open source software, courseware and even hardware designs. This means more consumers may leverage on these freebies and their active participation in production having a knock-on effect of cheaper products. Naturally, this has redefined the concept of sharing, and just like AirAsia famous tag line “Now everyone can fly” it may gener- ate one like “Now everyone can be a prosumer”. All these are possible because of the introduction of the Internet of Things, 3D printers, blockchain and deep learning.

The main idea behind prosumerism is altruism. Altruism is an act of selflessness or unselfish for the wellbeing of other people. There is a belief that fundamentally humans are self-interested, but some research found that our first impulse is to co- operate rather than to compete. For example, toddlers spontaneously help people in need out of their genuine concern. With the tagline of Together Everyone Achieves More (TEAM) and Learn More, Discover More and Share More, altruism is import- ant to bind any social groups and families together to help them cooperate and thrive. Normally people will expect to be rewarded or to receive something in return either tangible or intangible but the beauty of altruism is to ensure members in a commu- nity have a backup when needed through the altruistic impulse and reciprocation of kind deeds.

In Malaysia prosumerism is especially suited to rejuvenate and revolutionise our cottage industry. Since the millennials and Generation Z do have the tendency to multi-tasking, freelancing and not committed as traditional employees, coupled with the many disruptive technologies will reduce the need to gather in one location to collaborate on an economic enterprise. It is even more enticing because there is now a new business model

based on new ways to fund (crowd funding and blockchain), collaborate on, promote low cost enterprises, and organised in a peer to peer manner. The main challenge of the middlemen will be addressed and eliminated. Consequently, there will be a shift away from big business towards the interest of consumers in the creation of wealth and the development of the economy. The government may eventually need to rethink many policies such as tax incentives, intellectual property rights and the role of the Central Bank. Prosumerism with the proper check and balance in place offers the light at the end of the tunnel to arrest the aggregated dark side of the three industrial revolutions such as climate change, depletion of natural resources and extinction of species. This is by closing the gap between the rich and the poor. It offers hope to liberate the B40 and the bottom billion to enjoy a better life and participate to meaningfully contribute to humanity.

Next, we illustrate how to implement ‘Learn More, Discover More and Share More’ for three examples from mathematics. These are what a prosumer does.

### Example 1

**Problem Statement:** The German Carl Friedrich Gauss (1777 - 1855) is one of the world’s most famous mathematicians. He had a lazy teacher, and one day he wanted to keep the kids busy so he could take a nap; he asked the class to add the numbers 1 to 100.

**Answer:** Let us write the first few numbers in two rows:

$$\begin{array}{cccccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ 10 & 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 & 1 \end{array}$$

Notice that we have 10 pairs, and each pair adds up to  $10 + 1 = 11$ .

The total of all the numbers above is

$$\text{Total} = \text{pairs} * \text{size of each pair} = n(n + 1)$$

But we only want the sum of one row, not both. So we divide the formula above by 2 and get:

$$\frac{n(n + 1)}{2} .$$

Now this is cool. It works for an odd or even number of items the same! Learn More: There are several ways to add the numbers<sup>11</sup>.

**Discover More:** You may then write different simple computer codes to find the answer.

**Share More:** Next, you may make a video on how you obtained the answer and share.

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<sup>11</sup> <https://betterexplained.com/articles/techniques-for-adding-the-numbers-1-to-100/>

Perhaps one where you record your voice over your PowerPoint slides (entry level), and another with multi-media effects.

### Example 2

*Problem Statement:* Let X represent a RM5 note, and Y represent a RM10 note. Given there are 20 notes, and these add up to RM100 worth in a bag. How many RM5 notes and RM10 notes are there in the bag?

*Answer:* Consider

$$X + Y = 20$$

$$5X + 10Y = 100.$$

These may be written as a matrix equation.

Solving the matrix equation, we get  $X = 20$ , and  $Y = 0$ .

We may also, change the number of notes in the bag to 12. Hence, we obtain

$$X + Y = 12 \quad 5X + 10Y = 100.$$

*Learn More:* You may also solve the above by first eliminating X (or Y) from the pair of simultaneous equations.

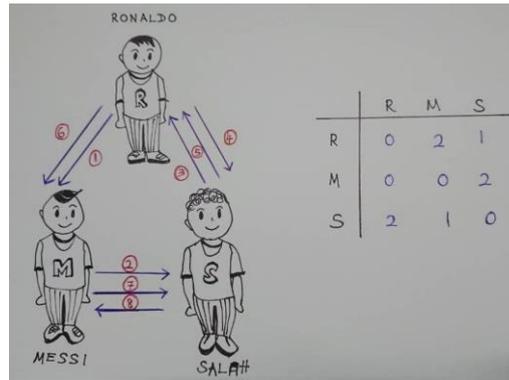
*Discover More:* You may then write simple computer codes for the different ways to find the answer.

*Share More:* Next, you may make a video on how you obtained the answer, and share. Perhaps one where you record your voice over your PowerPoint slides (entry level), and another with multimedia effects.

### Example 3

*Problem Statement:* Ronaldo, Messi and Salah passed a ball among themselves as in the Figure 2 below. How do we describe the movement of the ball to a computer?

Figure 2: The ball was kicked among the three players; starting with Ronaldo to Messi.



Answer: We need to translate the ball movement into a matrix. A computer will be able to analyse a matrix. In this case, it will be a 3x3 square matrix as shown on the right side of the Figure 4. Ronaldo does not pass the ball to himself. This is also the case for Messi and Salah. Hence, we get zeros as entries in the diagonal of the matrix.

Learn More: The number of passes of the ball between the same three players may be increased to twenty and so forth. You will need to modify the 3x3 matrix. You may also increase the number of players.

Discover More: You may then write simple computer codes for the different scenarios to find the corresponding matrices.

Share More: Next, you may make a video on how you obtained the matrices and share. Perhaps one where you record your voice over your PowerPoint slides (entry level), and another with multi-media effects.

It is sad to note young adults today are susceptible to radicalisation. They are not mere consumers of various radical contents, but some are prosumers. They did not only read but also are influenced, and produce information on radicalisation which is then shared in the social media<sup>12</sup>. Da'wah in this age of disruption needs passionate propagators of Islam who are prosumers of 'ilm to address the wide spectrum of society. They learn more, discover more and share more ideas with the goal those who accept their message will also become prosumers of 'ilm. This will result in life changing behaviour. As an example, one who is enlightened to submit to Allah SWT will not be contend with his or her current 'ilm. There is now the urge to learn more, discover more and share more ways to increase one's income so that he or she will be able to contribute more zakat and help others.

<sup>12</sup> Rahma Sugihartati, Bagong Suyanto and Mun'im Sirry. 2020. Social Sciences 9: 40 (15 pages).

## CONCLUSIONS

Everyone of us is part of a network be it through Facebook, emailing groups, WhatsApp, or our social and professional communities. Today, we are all much more connected. Hence, information can easily diffuse and shared. Inviting people to Islam requires one to acquire 'ilm, discover 'ilm and share 'ilm. The effectiveness of 'ilm diffusion depends on both technology and human factors. Muslims cannot afford to continue to be consumers of 'ilm and technology.

Instead, we should be prosumers of 'ilm and technology. Da'wah in the era of disruption requires the message conveyed to be a marriage between the ancient (the holy Quran) and modern (recent discoveries). For example, the death of a black hole may be explained by the creation and annihilation of pairs of particle and anti-particle. The holy Quran has mentioned that everything is created in pairs. Also, as we humans constitute networks, da'wah will benefit from latest technologies including network analysis and visualisation, big data analytics and artificial intelligence.

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