

War of the Default Settings

Craig Webster¹ ✉

Abstract

Products have specific default settings embedded in them, which has massive implications for consumers and industry in a robonomic society. While the default settings may make things more convenient for the consumer, such settings influence consumption and expenditures. The nudges that the consumer experiences from default settings will not only influence consumption patterns but also intensify competition among suppliers who want a specific product nudged on the consumer. Here, the author discusses the political struggle inherent in the default settings, highlighting the conflict between the demand- and supply-side as well as the intensification of conflicts between various suppliers of technologies.

Keywords: default settings; nudging; ringtones; Porter's Five Forces

Type: Viewpoint

Citation: Webster, C. (2022). War of the default settings. *ROBONOMICS: The Journal of the Automated Economy*, 3, 38.

¹ Department of Applied Business Studies, Miller College of Business, Ball State University, 2000 W. University Ave., Applied Technology, Room 239, Muncie, IN 47306, USA; Phone: 765-285-9022; email: cwebster3@bsu.edu

✉ Corresponding author



© 2022 The Author(s)

This work is licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0).

To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>

*“Trust your mechanic to mend your car
Bring it in to his garage
He tightens and loosens a few spare parts
One thing's fixed, another falls apart
And the rich eat you.”*

Trust Your Mechanic, the Dead Kennedys, written by Jello Biafra

I. Introduction

In the new robonomic economy, there will be significant power and influence in the hands of those actors who control the software systems inherent in the automation used in production and the provision of services. Consumers will have to trust their providers, much like they have to trust their mechanics. In the economy's struggle for power, those who control the default settings of technologies will have advantages over consumers and other competitors. As an expression of power and influence, default settings become an embodiment of a political struggle between the interests of consumers and the various actors on the supply side of the equation. This viewpoint will discuss the importance of default settings and the ways in which consumers, technology producers, and the businesses that use automation technologies will experience power struggles with regards to default settings. This is a mostly silent war between consumers and producers/service provider, in which producers and service providers will have the upper hand, many times without the consumer even being cognizant of it.

2. What are Default Settings and Why do they Matter?

The word “default” has a number of meanings and can be used as a noun or a verb (Merriam-Webster, 2022). While there are many different meanings for the word, being used widely in legal (a failure to perform a duty) and financial (the failure to pay a debt), the use of the word for Merriam-Webster with regards to computers is “a selection automatically used by a program in the absence of a choice made by the user” (Merriam-Webster, 2022). The Cambridge Dictionary has a similar definition explaining that default is “the way that something will happen or appear automatically, especially on a computer, if you do not make any different choices” (Cambridge Dictionary, 2022). The implication is that with regards to technologies, default settings are the settings that have been preloaded into the technology, so that the default (or “failure”) for the user is the failure to make decisions that impact upon the usage settings of the device/technology.

Default settings have implications, outside of technological discussions. For example, research shows that regular intervals of visits to the dentist is associated with better oral health (Beigi, Shamshiri, Asadi-Lari, Hessari, Jafari, 2019). As such, an individual's default setup of having a regularly scheduled appointment with a dentist should have an impact upon the oral health of an individual as well as the profitability of the provider of dental services. The individual's environment, wealth, dental insurance, and personal choices will all have an influence upon the regularity of visits to a dentist. Visits to the dentist have a systematic relationship with oral health and expenditures on dental services, with clear financial and other interests for the consumer and the supplier. There is a question with regards to how a person makes the decision for when to visit the dentist, whether it is a rational calculation or whether it is a standard operational procedure set up for regular visits at some interval, designed by an insurance company or a dental service provider. Thus, the decision to go to a dentist on a regular basis and the length of the interval will have substantial impact upon the individual and the supplier of dental services. Such intervals that are somehow (whether ideologically or rationally) programed into a person's thinking are a good analog with the default settings of any technology, since there may be a rationale for the setting but that the setting have real ramifications for the users and the suppliers of the technology.

There are various well documented instances when default settings had massive impacts on operations. Some instances include when Facebook by default listed purchases of users for friends of the users on Facebook,

leading to an outcry of users and the concerns of advertisers, so that Facebook changed the default settings, so that a user had to actively agree to list her/his purchases (Goldstein, Johnson, Herrmann & Heitmann, 2008). Goldstein, Johnson, Herrmann & Heitmann (2008) also illustrate that a European national rail company increased its annual revenue by about \$40 million dollars simply by adding a seat reservation and additional charge for the service to online purchases, unless the purchaser actively opted out of making a seat reservation. So, while purchasers had the option of not purchasing a seat reservation, most followed the prompts online and accepted the extra service and charge, netting the railway an extra \$40 million dollars. Indeed, it is also shown that if default settings may encourage greater organ donation rates (Johnson & Goldstein, 2003) and in can be seen to influence outcomes in such disparate things as vegetable consumption (Friis, Skov, Olsen, Appleton, Saulais, Dinnella, et al., 2017), participation rates in achievement tests (Kalkstein, De Lima, Brady, Rozek, Johnson, & Walton, 2022; Schneider, Klumpe, Adam & Benlian, 2020), and standing rather than sitting in the workplace (Venema, Kroese & De Ridder, 2018). There is an emerging field in “nudging” in marketing, a method of the influencing of outcomes, one of which is the use of default settings, although there are other methods, such as declaring, disclosing, exemplifying, marginalizing, simplifying, framing, reminding, recalling, and committing (Stieler & Henike, 2022; Grüne-Yanoff, Marchionni, & Feufel, 2018; Wagner, 2021).

3. But Why is it There?

There are very good reasons that technologies need to have default settings. First, from the perspective of the consumer, the default setting allows the consumer to use the product without having to go through a great deal of decision-making, enabling the user to use the technology more quickly and shortening the learning curve. For example, many mobile phones come preloaded with software that an individual may or may not use and have settings that are defaults. The use of defaults gives the end-user of the mobile phone the advantage of not having to spend time and energy learning about such trivial matters as which ringtone to have, although a savvy consumer who cares can chose to spend time and energy to do so. However, with regards to cellular phones, there is evidence that many users either do not have the skills nor the knowledge of the options to fully investigate and modify telephones away from the default settings, enabling the harvesting of data from users (Ramokapane, Mazeli & Rashid, 2019). As a result, many users of technologies will not really invest their time and effort into modifying the default settings that they will receive from the technology provider.

Second, from the perspective of the supplier of the technology, the particular default settings give a certain amount of power, since many end-users of the product may not bother to spend the time and energy to learn about the options available. Thus, it means that for some users of technologies, they never need to think about the options available nor even the question of whether the settings are more beneficial for the supplier of the technology or the end-consumer of the technology. According to Toyota (n.d.) “In most cases, Toyota recommends that Toyota owners schedule a service appointment every six months or 5000 miles, whichever comes first.” As a result, the button that is pushed to indicate to the driver that the automobile needs to be serviced will indicate that a servicing is needed for the automobile, regardless of the need or perceptions of the end user of the automobile. While many owners and operators of automobiles may either ignore or disregard the indicator informing the driver that the car needs servicing, many users will assume that the indicator is set in ways to maximize the utility of the automobile for the owner and will simply not think about it, bringing the automobile to a mechanic for a servicing.

The interrelationship between those who supply technology and those who consume have a natural tension, as the supplier is interested in maximizing revenues, while the consumer has a desire for efficient and effective usage of the technology, as well as spending in ways that are rational and economical. Since most consumers will not take the time and energy to explore fully the options and capabilities of the technologies they use, the default settings are one way in which the supplier of the technology has an advantage, even when the end user of the technology theoretically can modify default settings of the technology.

For the most part, research on default settings focuses upon the default settings that lead to more effective use of the technology (See, for example; Noain-Sánchez, 2016; Ramokapane, Mazeli, & Rashid, 2019). But the effectiveness of the technology is not the only dimension upon which users and technology suppliers may be concerned. For example, there are various dimensions upon which a person may evaluate the quality of the products consumed (performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality) (Garvin, 1987) and the ease of use of the product may be more critical for many consumers than the time and energy used to modify the product’s setting to personalize the product for a particular individual’s preferences. Even for quite a simple setting issue on a cell phone as the ring tone, most consumers use the default (Forbes, 2005). While there is some evidence to believe that youthful users of cellular phones view their ringtones as a method of self-expression (Schneider, 2009), many do not bother (or perhaps do not have the technical skills) to customize their ringtones.

There is some research indicating the importance of the relationship between safety and speed of robots, with a discussion of the values used to determine the default settings of robots (Rea, Hanzaki, Bruce, & Young, 2017). Eventually, the designers and producers will have to do the calculus with regards to what they will find to be acceptable and desirable in terms of what the product’s default settings will be. As such, there is a likely clash between the interests of consumers and the interests of the producers/suppliers, as shown in Table I below.

Table I. *Default Settings and Customization*

	Benefit and Concerns for Consumer	Benefit and Concerns to Producer/Supplier
Default Settings	<ul style="list-style-type: none"> • Ease of use • Speed of use • Issues with data privacy 	<ul style="list-style-type: none"> • Allows for beneficial revenue management • Allows for data harvesting from consumer • Allows consumer to use product quickly and liberally
Customized Settings	<ul style="list-style-type: none"> • Preferred characteristics of the product employed • Self-expression 	<ul style="list-style-type: none"> • Allows the consumer to limit data harvesting of the consumer’s data • May undermine beneficial service intervals for suppliers

Table I highlights that while the ability of the consumer to customize a technology product may be desired by the consumer, there are issues and concerns with doing such. The consumer may be able to customize many dimensions of the product, although this will likely require an investment of time and energy into doing such, meaning that many may simply accept the product as per the default settings. The producers/providers have a very different set of interests, that of providing default settings that will enable efficient and effective revenue management, allowing for revenue maximization. While producers/suppliers will want to give the illusion of a great deal of choice in the settings for the benefit of consumers, they will know that consumers will largely accept technologies with their default settings and program them with default settings that work in ways to enable the maximization of profitability for the producers/suppliers.

4. Competing Interests, Buyer Power, and Supplier Power

In order to look into the power of suppliers and the power of buyers, it is good to look at industries within the framework of Porter’s Five Forces (Porter, 1979). In a modern example, an unwitting consumer today may purchase a Samsung television and find a large button already on the top of the remote control with a Netflix logo. The Netflix button makes it easier for the consumer to launch Netflix on the television, essentially nudging the consumer to purchase the Netflix product. And this nudge seems to have worked for Netflix. At the end of the third quarter of 2021, Netflix had around 214 million global paid memberships with an expectation of 178.5 million in the USA alone in 2022 (Kats, 2022). These memberships translate into substantial income since the cost of Netflix, as of December 2022 in the USA, is between \$6.99 to \$19.99 (Netflix, 2022).

While the button makes an obvious and visible indication that Netflix is an option for the consumer, with software already loaded to allow for watching Netflix, the consumer has the choice after purchase to press the button and subscribe to Netflix for an additional monthly fee (\$6.99 to \$19.99). The implication of this default decision made by the manufacturer has a direct impact upon the consumer but also a direct impact upon the supply side of the equation, since the default decision may indicate collusion or strategic partnerships of those on the supply side. A reasonable consumer may want another subscription service and may have the opportunity for that, but the big button and preloaded software nudges the consumer to the outcome that seems to benefit one service supplier (Netflix) at the expense of other suppliers, such as Hulu. The presence of the button and preloaded software biases consumers in a particular direction, as does the size, placement, and visibility of the button. The big button with “Netflix” and complacent consumers create barriers to entry for new streaming services.

In essence, the default settings influence the power of the buyer (consumer) and the power of the supplier. Many consumers illustrate that they have given up much of their power by utilizing the default settings, something institutionalized in nudges programmed into the strategies of the suppliers and producers, although consumers retain a great deal of choice, albeit with a bounded rationality of choice. While defaults do not entirely eliminate discretionary decisions of consumers, many consumers acquiesce to the default settings. While the power of the buyer would seem to be high, the default settings undermine it in subtle ways, since buyers may not invest the time and effort to exercise their power.

All of this is consistent with the concept of the Lazy User Model (Collan & Tétard, 2011). This model is not concerned with the engineer’s desire for creating choices for consumers and flexibility of usage of technologies, but the costs and desires of the consumer. The Lazy User approach stresses the importance of “user need, the user state, and the overall effort related to the use of technology” (Collan & Tétard, 2011) as critical factors to consider. Indeed, a person reflecting upon this will realize that there are likely many options that she/he has in the technologies used on a daily basis that she/he has never even considered. What people intuitively feel about how common it is to read the manuals for new products, is true, as research shows (Blackler, Gomez, Popovic, & Thompson, 2016), since only a minority read the manuals that accompany new technologies. This likely explains why so many manuals seem to be so poorly written, since it may represent a use of resources that is wasted, given that consumers do not really read them.

On the supply side, the default settings are outcomes of a political process between those who have access to the consumers and those who want access to consumers via default settings. The pathways by which defaults become embedded into technologies will have real repercussions for the consumers and for the industry. For example, a person may use Alexa or another digital assistant to make a reservation but the question is which application is used for Alexa to identify service providers, whether it be an airline ticket, a restaurant, or some other service/product. Many consumers may consider the digital assistant essentially, a black box that will provide unbiased and perfect information, although in reality the digital assistant will use applications and data sources that have limitations and biases embedded into them, such as the use of booking.com or Expedia, as a data source. While the end user of the technology may have the ability to move away from the default settings of the technology and use a preferred application or source, the default of the purchased technology is the embodiment of biases and decisions that may not be in the best interest of the end user and may also disproportionately benefit one particular commercial interest.

The power struggle will be substantial for the supply side of the equation between the interests that benefit from or are hurt by the default settings of the providers who have the most direct contact with the consumer. For many end consumers, this will be a silent struggle between the entities beyond the gaze of the end consumers of the products/services. The producers/suppliers will be influenced by those providers who want

to be present in the default settings. Thus, a presence in the default settings may mean life or death for some of those enterprises. There is also the risk that the default settings will seriously distort the competition in the market, leading to a near monopoly, the way that the default installation of the Windows operating system on many computers has sidelined other operating systems so that many consumers may not even be aware of alternatives.

While the constraining of end-consumers' perceptions of options may seem to be economically efficient, it leads to serious consequences for the various actors on the supply side. The competition for being the default app for new technologies may mean the elimination of a great deal of competition within service providers, since the decision of what becomes the default setting may be the deciding factor in terms of various markets for services. In the end, the power of default settings is the power to sideline a great deal of service suppliers and will likely lead to monopolies in some services, not because of the quality of the service providers but because of the possibly arbitrary choice of what the default settings on technology should be. There will be substantial competition among suppliers of technology to be the suppliers of technology that comes installed as the default on all sorts of purchased technologies, whether it be robots (for individuals and businesses), telephones, or any other technologies on the marketplace. This competition will lead to potential for practices that may seem to be unethical or corrupt, since the outcomes for many suppliers of technology will be substantial. This may lead to outcomes with near monopolies or almost complete market capture by specific products.

5. Conclusion

We see that there is a clash of interests between consumers and suppliers with regards to default settings in a robonomic society. While there will be a demand for options to modify the settings of various technologies that will be employed by households and businesses, many will not bother to invest the time and energy into it. In essence, default settings seriously limit many discretionary decisions, due to the reality of the "lazy user."

The interests of the technology producers/providers are very different from those of the consumers. However, the default settings create an environment in which the players on the supply side will experience conflict and competition, with some defaults benefiting specific institutional and commercial interests. Strategic partnerships between the producers and suppliers of technology and various external players will impact upon the ecosystem that the consumer lives in, with default settings supplied that nudge the consumer to a particular product, without consumers really contemplating alternatives in the market.

Future research should look into learning more about the "lazy user." It would be good to learn more about the market segmentation of the "lazy" versus other consumers. It may well be that the consumers are not all lazy and that there are distinct demographic or attitudinal segments that actively go out of their way to find better solutions to their technology needs, apart from simply using the defaults. In addition, more could be learned about belief systems of consumers with regards to the qualities of the software they use, since they may believe that the applications that they use are the best and are unbiased.

One of the key features of the robonomic economy is that artificial autonomous agents will increasingly become consumers (Ivanov, 2021; Ivanov & Webster, 2017). As consumers, artificial autonomous agents will make market choices that will not benefit all parties involved equally. The technologies themselves will make choices about when to get serviced, what services and products to purchase, and which data to share with others, as independent decision-making units (Ivanov, 2021). While it may seem that the consumer choices are being made by the robots (or any other automation technology), the decisions and programming ultimately can be traced back to humans who have economic and political interests that may be different from the human(s) who are on the demand side of the equation. As such, there will be a silent war between the supply and demand side, with suppliers having the advantage of the knowledge of what defaults benefit specific players in industry best and being able to install automation with default settings. The bloodiest battles of the silent war will be between the

various actors attempting to get their particular technologies preloaded as defaults on purchased technologies, since the presence or absence of defaults will mean life or death for firms. In addition, the supply side has the benefit of human nature, understanding that most consumers do not invest much time and energy into modifying settings but likely also trust the supply side's expertise, much like many consumers with automobiles have to trust their mechanics.

References

- Beigi, M. R., Shamshiri, A. R., Asadi-Lari, M., Hessari, H., & Jafari, A. (2019). A cross-sectional investigation of the relationship between complementary health insurance and frequency of dental visits in 15 to 64 years old of Tehran population, Iran, a secondary data analysis (urban HEART-2). *BMC Health Services Research*, 19(1), 678. <https://doi.org/10.1186/s12913-019-4526-y>
- Blackler, A. L., Gomez, R., Popovic, V., & Thompson, M. H. (2016). Life Is Too Short to RTFM: How Users Relate to Documentation and Excess Features in Consumer Products. *Interacting with Computers*, 28(1), 27–46. <https://doi.org/10.1093/iwc/iwu023>
- Cambridge Dictionary (2022). Default. Retrieved 23.10.2022 from <https://dictionary.cambridge.org/dictionary/english/default>
- Collan, M., & Tétard, F. (2011). Lazy User Model: Solution Selection and Discussion about Switching Costs. In: Salmela, H., Sell, A. (eds) *Nordic Contributions in IS Research. SCIS 2011. Lecture Notes in Business Information Processing*, vol 86. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-22766-0_7
- Forbes (2005). What Does Your Ringtone Say About You? *Forbes*. Retrieved 20.09.2022 from https://www.forbes.com/2005/06/01/cx_de_0601_ringtone.html?sh=2224dc846bad
- Friis R., Skov, L.R., Olsen A., Appleton K.M., Saulais L., Dinnella C., et al. (2017). Comparison of three nudge interventions (priming, default option, and perceived variety) to promote vegetable consumption in a self-service buffet setting. *PLoS ONE*, 12(5), e0176028. <https://doi.org/10.1371/journal.pone.0176028>
- Garvin, D. A., (1987). Competing on the Eight Dimensions of Quality. *Harvard Business Review*, 65(6), 101-109. <https://hbr.org/1987/11/competing-on-the-eight-dimensions-of-quality>
- Goldstein, D. G., Johnson, E. J., Herrmann, A., & Heitmann, M. (2008). Nudge your customers toward better choices. *Harvard Business Review*, 86(12), 99-105.
- Grüne-Yanoff, T., Marchionni, C., & Feufel, M. (2018). Toward a Framework for Selecting Behavioural Policies: How to Choose Between Boosts and Nudges. *Economics and Philosophy*, 34(2), 243-266. doi:10.1017/S0266267118000032
- Ivanov, S. (2021). Robonomics: The rise of the automated economy. *ROBONOMICS: The Journal of the Automated Economy*, 1, 11. Retrieved from: <https://journal.robonomics.science/index.php/rj/article/view/11>
- Ivanov, S. & Webster, C (2017). The robot as a consumer: a research agenda. *Proceedings of the 'Marketing: Experience and Perspectives' Conference*, Bulgaria, University of Economics-Varna, 29–30 June 2017, pp. 71–79.
- Johnson, E. J., & Goldstein, D. (2003). Medicine. Do defaults save lives? *Science*, 302(5649), 1338–1339. <https://doi.org/10.1126/science.1091721>
- Kalkstein, D., De Lima, F., Brady, S., Rozek, C., Johnson, E., & Walton, G. (2022). Defaults are not a panacea: Distinguishing between default effects on choices and on outcomes. *Behavioural Public Policy*, 1-16. doi:10.1017/bpp.2022.24
- Kats, R. (2022) Netflix statistics: How many subscribers does Netflix have? Worldwide, US member count and growth. *Insider Intelligence*. Retrieved 11.12.2022 from <https://www.insiderintelligence.com/insights/netflix-subscribers/>
- Merriam-Webster. (2022). Default. Retrieved 23.10.2022 from <https://www.merriam-webster.com/dictionary/default>
- Netflix (2022). Choose the plan that's right for you. Retrieved 11.12.2022 from <https://www.netflix.com/signup/planform>
- Noain-Sánchez, A. (2016). "Privacy by default" and active "informed consent" by layers: Essential measures to protect ICT users' privacy". *Journal of Information, Communication and Ethics in Society*, 14(2), 124-138. <https://doi.org/10.1108/JICES-10-2014-0040>
- Ramokapane, M., Mazeli, A. C., & Rashid, A. (2019). Skip, Skip, Skip, Accept!!! A Study on the Usability of Smartphone Manufacturer Provided Default Features and User Privacy. *Proceedings on Privacy Enhancing Technologies*, 2019(2), 209-227. <https://doi.org/10.2478/popets-2019-0027>
- Rea D. J., Hanzaki, M. R., Bruce, N., & Young, J. E. (2017). Tortoise and the Hare Robot: Slow and steady almost wins the race, but finishes more safely. *Proceedings of the 26th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, pp. 956-961. doi: 10.1109/ROMAN.2017.8172418
- Porter, M. E. (1979). How Competitive Forces Shape Strategy, *Harvard Business Review*, 57(2), 137–145.
- Schneider, C.J. (2009). The music ringtone as an identity management device: a research note. In Denzin, N.K. (Ed.) *Studies in Symbolic Interaction (Studies in Symbolic Interaction, Vol. 33*, Bingley: Emerald Group Publishing Limited, pp. 35-45. [https://doi.org/10.1108/S0163-2396\(2009\)0000033005](https://doi.org/10.1108/S0163-2396(2009)0000033005)
- Schneider, D., Klumpe, J., Adam, M., & Benlian, A. (2020). Nudging users into digital service solutions. *Electronic Markets*, 30, 863–881. <https://doi.org/10.1007/s12525-019-00373-8>
- Stieler, M., & Henike, T. (2022). Innovation nudging—A novel approach to foster innovation engagement in an incumbent company. *Creativity and Innovation Management*, 31(1), 35-48.
- Toyota. (n.d.) Are you due for a service appointment? Retrieved 20.09.2022 from <https://www.toyota.com/owners/parts-service/maintenance-schedule#:~:text=In%20most%20cases%2C%20Toyota%20recommends,5000%20miles%2C%20whichever%20comes%20first.>
- Venema, T. A. G., Kroese, F. M., & De Ridder, D. T. D. (2018). I'm still standing: A longitudinal study on the effect of a default nudge. *Psychology & Health*, 33(5), 669-681. <https://doi.org/10.1080/08870446.2017.1385786>

Wagner, D. (2021). On the emergence and design of AI nudging: the gentle big brother?. *ROBONOMICS: The Journal of the Automated Economy*, 2, 18. Retrieved from <https://journal.robonomics.science/index.php/rj/article/view/18>

Received: 06/10/2022

Revised: 25/10/2022

Revised: 11/12/2022

Revised: 12/12/2022

Accepted: 12/12/2022