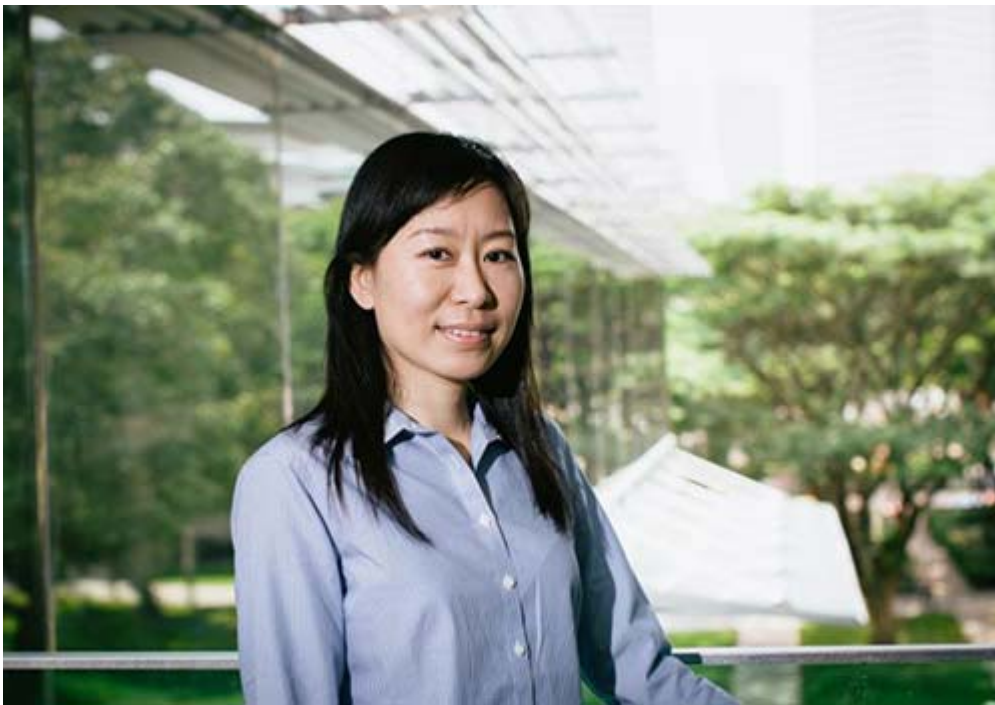


Harnessing Technology To Improve The Consumer Experience

By Singapore Management University | Editorials
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SMU Associate Professor Guo Zhiling is studying the impact of information technology on consumer behaviour and business strategy.



AsianScientist (Feb. 3, 2014) – By Sim Shuzhen – Technology has transformed the consumer experience by creating novel ways in which businesses can interact with their customers. For example, in place of visiting a brick-and-mortar store, you might recently have learned about a two-for-one deal from a company’s Facebook page, placed a winning bid at an online auction, or contributed ideas for the next generation of a product on a crowdsourcing website.

“Consumers are key players in the business ecosystem, which can be characterised by increasingly digitalised, dynamic and networked social interactions between businesses and consumers,” says Associate Professor Guo Zhiling of the Singapore Management University (SMU) School of Information Systems, whose research seeks to understand the impact of information technology (IT) on consumer behaviour and business strategy.

For example, a company may want to design an electronic referral programme for existing customers to recommend products to their contacts via social media channels. Paid referral programmes are not a new concept for effective customer acquisition, but what is new is the high degree of tracking and accountability enabled by modern technology. These technologies not only provide consumers with tools to conveniently spread their word of mouth (WOM) messages via social networks (e.g. Facebook likes, quick links in email

messages or online profile pages), but also enable firms to automatically track sign-ups and reward consumers accordingly by following their digital trails.

Helping businesses use social media technologies

As the rules of the game evolve, how can businesses leverage the social influence of existing customers and more effectively engage them in new product promotion and marketing campaigns? How can companies create unique social profiles of their consumers, help their WOM to go viral, shape consumer behaviour and drive referral sales?

“A better understanding of consumers’ behaviour will facilitate the design of new business solutions and IT-enabled new business models,” Professor Guo explains. Because consumer behaviour may be affected by many economic and social factors, Professor Guo uses an interdisciplinary approach to gain insights into complex problems.

By bringing together modelling techniques from the fields of economics and marketing, Professor Guo studies how social recommendation technology and economic incentives can alter consumer referral behaviour in the context of social media marketing. More specifically, her research answers questions such as when to offer the referral reward and how much of the reward to offer to existing consumers, to what degree existing customers can be motivated to respond to financial incentives, and what is the likelihood of converting potential consumers into purchasers by combining economic incentives with social media technologies.

On a more practical note, Professor Guo also guides companies on how to craft incentive-based digital marketing strategies that maximise the social media reach of loyal customers and monetise the existing customer base.

“As an Information Systems (IS) researcher, I would not restrict myself to one field of study or narrowly focused method. I view myself as a quantitative modeller who is interested in interdisciplinary IS research spanning across economics, operations management and marketing,” says Professor Guo.

What firms can learn from strategic consumers’ “buy now or later” decisions

For technology aficionados, the joy of owning a shiny new gadget may be tempered by the knowledge of one sobering certainty: obsolescence, upon the release of an updated product version. The savvy consumer is thus faced with several choices: Should he buy that smartphone now? Be patient and count on its price being slashed once a newer model is released? Or maybe wait to fork out more for the newer version? Businesses, on the other hand, want to understand how their strategy for pricing and marketing the new product will affect the decision the consumer eventually arrives at.

When studying this “buy now or later” problem, Professor Guo found that when consumers anticipate a substantial discount on the first generation product, they tend, not surprisingly, to delay their purchases of an existing model until a newer model is released. This can undermine initial sales of the earlier product version, and adversely affect profits.

Provided the discount remains within a certain range, however, she also discovered that consumers who wait to buy the newer model can actually benefit the company in the long run. These consumers “seed” the market by becoming early adopters of the newer model when it becomes available, translating into greater influential power over their peers to quickly adopt the new product.

Although the consumers’ preference to wait for the newer model hurts the sales of the old generation product, it will help boost sales of the newer generation product. Therefore, through careful pricing of the two generation models, the gains may outweigh the losses and the firm may still benefit from the seemingly undesirable delayed purchase.

“Strong peer influence will dramatically speed up market penetration of the newer generation product in the early stage of the product diffusion process. Thus the firm benefits from the accumulated positive word-of-mouth from customers who wait for the newer generation product, resulting in more sales and higher profitability across both generations than it would be in the absence of strategic consumers’ waiting behaviour,” Professor Guo explains.

Professor Guo’s results provide fresh insight into how companies can communicate new product releases to their customers. Instead of giving out free trial products to seed the market (now a common practice), it would instead be more effective to educate consumers about the new product, and let them pass the information on to their friends.

“By leveraging crowd intelligence in the social network, better information dissemination and aggregation can be achieved, which helps minimise consumers’ strategic errors and enables them to make more informed decisions,” Professor Guo explains.

Building research models is both an art and a science

Advances in IT have enabled the collection of vast amounts of consumer data in real time and on an unprecedented scale. Professor Guo is a participating faculty member at the Living Analytics Research Centre (LARC), a partnership between SMU and Carnegie Mellon University that focuses on the emerging research areas of big data analytics and computational social science. At LARC, she works on developing flexible models to better predict consumer behaviour and more reliably perform social network analytics.

To Professor Guo, building elegant yet powerful research models is both an art and a science.

“No research model captures all reality. Each model is an abstraction that only includes some of the possible interactions in the real world,” she says. “It is always a challenging task to balance the design and decide the most important factors and key components to be included in the research model.”

To take her work a step closer to her goal of discovering new business strategies that can be applied in real life, Professor Guo also has plans to run consumer behavioural trials on SMU’s LiveLabs Urban Lifestyle Innovation Platform, a city-scale test-bed which uses mobile sensing technology to gather information about consumer activity and preferences.



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“It is not enough to research a problem, produce solutions to it and publish the results. Theory must be tested in the real world, and truly impactful research should influence industry practice,” she says.

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