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Changing trends in internet startup value propositions, from the perspective of the customer

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ABSTRACT

Startups are a rising trend among entrepreneurs regardless of age, educational background, and gender. However, given the rapid increase in the number of newly established startups, the percent of businesses that fail is not insignificant. One of the many reasons why startups fail is the difficulty of identifying a clear value proposition from the customer's perspective. This should be carefully considered. Hence, this research aims to analyze the information on Internet startup value propositions from the customer's perspective, during the 1990s, 2000s, and 2010s, to observe changing trends of value propositions and predict their development in the next decade as a reference for future startups. Overall, value propositions from the customer's perspective have gradually shifted over the last three decades. Several value propositions in particular, including privacy protection, security services, and legitimacy in trust, are receiving increasingly more attention from customers. From 2020 onwards, community and emotion will maintained sustainably and will continue to develop strongly. Above all, the value imparted by privacy protection and security services will remain a prime concern among the new generation of Internet startups.

1. Introduction

As technology develops further and the Internet expands, startups, Internet startups in particular, are developing at a remarkable rate, with the number of new startups increasing every year. According to Dr. Reynolds from the Global Entrepreneurship Monitor (GEM), around 300 million people worldwide are trying to start about 150 million businesses, of which one third will be launched. This means that around 50 million new startups are established each year, 137,000 per day on average. According to the 2016–2017 GEM report, entrepreneurship and startups are developing so rapidly because entrepreneurship is considered a good career choice. Not only do entrepreneurs who succeed acquire high social status, the media is also paying much attention to entrepreneurship, contributing to the growing interest in starting a business among those aged 18–64 all over the world. However, the percent of startups that fail is considerable, reportedly almost equal to the percentage of startups established. Of the many reasons why early-stage startups fail, the most common (accounting for 42% of failures) is a lack of market need for the products or services. Another reason (accounting for 14% of failures) is customer ignorance (CB Insights report). Customers clearly play a vital role in deciding the success or failure of a business. The first and most important task of an entrepreneur starting a business could be to analyze market demand to ensure that the startup will provide the most suitable products or services. After a successful establishment, it is then necessary to remain strong in the competitive market. To ensure customer loyalty, each startup must consider the value it can offer customers in various forms, and how to develop and improve upon this value.

In light of the importance of the value that each startup should offer its customers, this paper observes and compares the value propositions of Internet startups from the customer's perspective over the last three decades, to provide an overview of changing trends and developments and provide direction for new startups. Moreover, it also predicts the next trend in Internet startup value propositions from the customer's perspective in the next decade. To this end, the study was divided into two parts. First, the researchers used several typical cases of startups in each decade to analyze value propositions from the customer's viewpoint in detail. Second, they administered a survey questionnaire (using analytical hierarchy process [AHP] technique) to collect the opinions of experts and university students on changing trends in Internet startup value propositions from the 1990s to the 2010s. After analyzing and summarizing the main trends in value propositions in each decade, potential development trends in the next decade will be discussed.

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2. Literature review

Startups and their development have recently received much attention from both scholars and entrepreneurs. Seemingly personal attributes and individual skills of founding entrepreneur of each startup play an important role to the establishment and development of startup. Kelley et al. (2010) has highlighted the importance of entrepreneurial factor behind the startup establishment and argued that difference in entrepreneurial attitude, experience, and knowledge could reflect the different development speed of startups in general. Baum et al. (2001) had the similar opinion when they argued that startup founders with their clear vision, mission, and goal have the role as one of the key factors to lead to success. Covin and Slevin (1991) in their research on Entrepreneurial Orientation (EO) mentioned the entrepreneurial actions against risks, towards opportunities, and to innovation in new ventures. Several opinions exist as to the real meaning of the term "startup" and the difference between startups and traditional businesses. The American Heritage Dictionary defines a startup as "a business or undertaking that has recently started its operation." In other words, a startup is a business in an early stage of operation, whose founders aim to develop a product or service to meet a current demand. However, the 2015 Australian Innovation System Report defines a startup as the desire to explore a business opportunity instead of a force of economic necessity that drives the desire to start a business. A 2010 OECD report studying the success of several well-known technological startups over the course of ten years found that innovation is a primary factor in high growth. Generally, the term "startup" refers not only to the early stage of a company, but also to a technology-oriented business with a high potential for survival and growth. In contrast to traditional businesses, startups can grow quickly and need not heed national borders. Moreover, the products or services of a startup can meet the demand of a very large market, in contrast to a traditional business whose products or services are designed to serve a specific market.

Due to the rapid development of the Internet, and in light of startups' ability to grow quickly irrespective of national borders, tech startups, especially Internet startups, dominate the industry. Tech startups were traditionally established in tech clusters such as California's Silicon Valley, which is known as the birthplace of many famous startups such as Netscape, eBay, Yahoo!, and Google. However, as many important inputs for startups can be found online, including both the tangible (e.g., venture capital and computing capacity) and the less tangible (e.g., mentorship and collaboration) (Kende, 2015), entrepreneurs are taking advantage of the opportunity to expand beyond the traditional clusters to any region in the world with Internet access. According to recent research conducted by CISCO (2015), there are > 200 startups across the United Kingdom and Ireland with the Internet of Everything (IoE) direction. To support the establishment of new startups, some agencies are also giving the Internet of Everything community free access to their data hubs, allowing community members to create a platform with huge potential for the establishment of Internet startups. Governments are also implementing various policies to support such development; for example, European countries are introducing entrepreneurial exchange policies (encouraging foreign entrepreneurs to enter Europe to start their businesses and vice versa); equipping entrepreneurs with e-skills (e.g., digital skills to support digital startups); geo-unblocking (modernizing copyright laws and policies, especially for the audio-visual industry) (European Startup Act); reducing the time and cost required to start a business (in Greece); simplifying the startup procedure (reducing the time required to a week); abolishing the minimum capital requirement (in the Netherlands); and condensing the company establishment procedure significantly (from 19 to 3 steps) (in Turkey) (OECD, 2010). Hence, recently, some alternative forms of technology and digital entrepreneurship have been initiated by scholars. In general, there have been three alternative types of technology and digital entrepreneurship i.e. Technology entrepreneurship, Digital technology entrepreneurship, and Digital entrepreneurship. The difference between these types is mainly based on the technologies and directions to create new products/services. Technology entrepreneurship products and services will be created based on the breakthrough in science and technology research in academic field to activate for a niche market (Clarysse et al., 2011). Normally, venture capital will be raised through promising intellectual properties (Audretsch et al., 2012). Digital technology entrepreneurship products and services will be created based on ICT technologies taking advantage of Internet of Things. To raise funding for its operation, normally it will use the traditional types such as business angels, seed and venture capital funding, and even stock market. It also could consider the possibility of crowd funding through reward and equity (Gedda et al., 2016). Regarding digital entrepreneurship, new products and services are created mainly based on the Internet. Services normally are run in the cloud using big data and other artificial intelligence (Giones and Brem, 2017). Because it uses technology as input factors, it could have high potential for growth and development (Wallin et al., 2016). It also could use diverse methods to raise funds like digital technology startups. Hence, within this study, Internet startups with the main input of technology and the Internet belong to the digital entrepreneurship type of technology and digital entrepreneurship.

Internet startup value propositions from the customer's perspective (customer-perceived value) play an important role in attracting customers. A value proposition is basically a promise of value-creating benefits delivered by a company to its customers (Buttle and Maklan, 2009). This concept comprises not only experiences but also value for money, which the company is supposed to give its customers. According to Zeithaml (1988), perceived value is the consumers' overall evaluation of a product based on their perceptions and comparisons of what is received with what is given. Martinez (2003) proposed two perspectives when examining value propositions: internal value, which comes from the shareholder's perspective (value as shareholder profit); and external value, which comes from the customer's perspective (value as customer satisfaction). Ulrich et al. (1999) argued that there were five value propositions—low cost, quality, speed, service, and innovation—and suggested that organizations pay attention to at least one of these listed value propositions. Fifield (2009) found a correlation between customer-perceived value and the customer's buying behavior. He listed several circumstances under which customers are willing to make purchase decisions, including when a customer feels an urgent need to buy, their partnership with suppliers, the presence of several options, lack of an available substitute, and, in particular, when the perceived value and price of a product or service are positively related. He also recommended that companies choose the most suitable pricing strategy to attract customers' attention, and guarantee the perceived value to both customers and the companies themselves. However, companies have to invest much time and effort to decide on a suitable pricing strategy. Capon and Hulbert (2007) studied several factors affecting companies' pricing strategy decisions, and pointed out some important factors that can deliver the most perceived value to customers, such as perceived substitutes, unique value, and a positive price–quality relationship. If companies focus primarily on the actual product or service as usual, they should pay more attention to the features and functionality of the products and services to create more value for the customer. To identify them exactly, companies should consider value propositions from the customer's perspective (Walker, 2008).

3. Methodology

This study examines value propositions from the customer's perspective. It also adapts the theory of customer value in online firms (Joo, 2007), by dividing value propositions from the customer's perspective into seven constructs—economy, convenience, speed, personalization, community, emotion, and trust. Amit and Zott (2001)

argued that there were 4 sources of value creation in e-business i.e. efficiency (search cost, selection range, symmetric information, simplicity, speed, scale economies, etc.), Novelty (new transaction structure, new transactional content, new participants, etc.), Lock-In (Switching costs which include loyalty programs, dominant designs, trust, customization), and Complementarities (between products and services for customers, between online and offline assets, between technologies, and between activities). Using the approach of Joo (2007), together with the theory of value creation in e-business (Amit and Zott, 2001), this study proposes an updated table of Internet startup value propositions from the customer's perspective (Table 2). Of the seven value constructs in the revised theory, "economy," "efficiency," and "speed" are expected to change in level over the three decades examined. Due to the growth of the Internet and increased transmission capacity (Coffman and Odlyzko, 2001), it is easy to estimate increased speed, improved efficiency, and the updating of new methods to bring more economic value to customers. With computers performing a vast number of calculations per second, information processing speeds allowing programs to interact with customers are increasing at a remarkable rate. Together with the Internet and technological improvements, e-commerce is broadening rapidly in a fast-moving global market, and the number of participants is increasing continually. Customers can carry out transactions and consume any product or service 24 h a day, seven days a week (Lee, 2009). In addition, new advancements allow businesses to integrate the Internet front-end application with the operation of the business, as well as enabling the integration of applications and back-end databases (Lee, 2009). This enhances not only processing and managing speeds but also the efficiency of business operations. Hence, using both qualitative and quantitative analyses, the study focuses on three value constructs in particular—community, emotion, and trust. It is difficult to estimate changing trends in these three complex value constructs from the 1990s to the 2010s. As they likely depend on customers' psychological instincts to evaluate products and services, they are considered rather complex (Khodyakov, 2007; McMillan and Chavis, 1986; Pretty et al., 2006). As each value construct contains several specific measure items, it is more convenient to compare them across the decades to detect changing patterns. Hence, in these cases the AHP method should be applied when the measure item number is greater than three and it is difficult to select the best reflective measure item in each value construct in each decade (Saaty, 1987). In this way, change and development trends in the values of community, emotion, and trust can be clearly observed across the decades from the AHP data results collected from the survey questionnaire concerning these three value constructs.

The first value construct, "community," denotes the value proposition that customers derive from an online community by exchanging knowledge and communicating with other people. According to McMillan and Chavis (1986), a sense of community includes four elements: membership (the feeling of belonging and sharing a sense of personal fellowship), influence (a sense of matters between a community and its members), integration and the fulfillment of needs (members' needs fulfillment and the receipt of resources through membership), and shared emotional connection (commitment and belief shared among the members). Applying this theory to features of Internet startups in general, this study proposes three measure items for the value construct "community": "shared experience and resources" (corresponding to integration and needs fulfillment, as outlined above), "emotional connection" (corresponding to the shared emotional connection element), and "ecosystem" (corresponding to the membership and influences elements). The term "ecosystem" refers to interconnection and interaction among members and can cover the feeling of belonging, sense of personal fellowship, and sense of matter between a community and its members, as described in the membership and influence elements (Table 3).

The second value construct, "emotion," refers to the value derived from customer satisfaction when using products and services provided by Internet startups. According to Doyle (2004), customers normally not only care for the actual product or service, but also consider whether or not the product or service suits their needs in terms of emotion or price. Armstrong and Hagel (1996) pointed out several types of reasons, or purposes, for a person to join an online community: transactional (when he/she intend to purchase products or services), interest-based (when he/she intends to exchange information), fantasy (when he/she intends to play games for entertainment), and relationship (when he/she intends to create and maintain an emotional relationship). However, an Internet startup is not only an online community, but also fulfills a primary purpose, that of doing business. Hence, this study does not consider the relationship purpose in examining examples of Internet startups. The study includes in the emotion value construct "knowledge fulfillment" (corresponding to interest-based purpose as outlined above), "enjoyment and playfulness" (corresponding to fantasy purpose), and "transactional need satisfaction" (corresponding to transactional purpose) (Table 3).

The third value construct, "trust," refers to the value derived from customer perceptions of security and reliability when making transactions and using products or services provided by Internet startups. Compared to traditional methods of carrying out transactions in offline markets, online markets entail their own risks and uncertainty, thus boosting the importance of trust and requiring more attention from online businesses (Head and Hassanein, 2002). Customers also tend to buy more from trusted sources (Bijlsma-Frankema and Woolthuis, 2005). The most frequently mentioned reason for consumers not making purchases online is a lack of trust (Petrovic et al., 2003). Petrovic et al. (2003) proposed a trust pyramid containing six elements necessary to build trust in a business: state-of-the-art security, merchant legitimacy, fulfillment, tone, customer control, and consumer collaboration. Each element is explained in Table 1.

Based on the trust pyramid theory (Petrovic et al., 2003), this study includes five measure items in the value construct "trust": "quality assurance" (corresponding to the fulfillment element in the trust pyramid), "security services" (corresponding to state-of-the-art security), "privacy protection" (corresponding to tone and customer control), "brand reputation" (corresponding to merchant legitimacy), and "legitimacy" (also corresponding to merchant legitimacy) (Table 3). In the trust pyramid theory, merchant legitimacy only refers to the use of brand importance and reputation and familiar names to build customer

Table 1
The trust pyramid.
Source: Petrovic et al. (2003)

Trust pyramid elements	Explanation
State-of-the-art security	The website should be equipped with the most reliable security measures.
Merchant legitimacy	Brands and familiar names with a good reputation can build customer trust.
Fulfillment	Order fulfillment and quality assurance are important to build trust. Customers normally expect to make transactions and receive products or services without any problems.
Tone	Customer's private information should be protected and handled sensitively.
Customer control	The business should give customers a chance to control the information that they input and how it is used.
Customer collaboration	Customers should be encouraged to communicate with each other regarding the business's products or services.

Table 2
Revised theory of value proposition in internet startups from the perspective of the customer.

Constructs	Operational definition
Economy	The value perceived when Internet startups use several methods to reduce costs or maintain lower costs for their customers.
Efficiency	The value produced when an Internet product or service provider uses an interactive interface, low search cost, multi-platform, or multi-system to satisfy customer requirements.
Speed	The value derived from customer satisfaction with the speed of responses to customer needs.
Customization	The value derived from customized methods of offering products, services, and transaction settings.
Community	The value derived from the online community created by an Internet startup through which customers can exchange knowledge and experience with other people.
Emotion	The value derived from customer satisfaction with the entertainment, pleasure, enjoyment, or playfulness aspect when they consume products or services from an Internet startup.
Trust	The value derived when the customer perceives the startup as offering such services as secure and reliable transactions, quality assurance, security services, and privacy protection.

trust. However, this study asserts that legitimacy is a known value that accrues when customers are assured that an Internet startup is following all applicable business rules and legislation; it is separate from the value that accrues when customers appreciate the brand of the startup or its products and services in brand reputation measure item. Conversely, the reputation of a brand is based, not only on their manner and attitude in following all applicable rules and legislation, but also on several other factors, such as social responsibility and protection of the environment. The customer collaboration element in the trust pyramid was developed under a separate value construct named “community” to express the unique features of current online businesses in general and Internet startups in particular.

For the first decade, the 1990s, this study examines five typical startups: Amazon, Google, Alibaba, Priceline, and Naver. The study only examines the startup period of these companies because they have since graduated from the startup period and become industry giants. For the second decade, the 2000s, this study examines Facebook, Spotify, Dropbox, Airbnb, and Uber. In the third decade, the 2010s, this study examines Instagram, GrabTaxi, Flipboard, Snapchat, and Zapier. For entrepreneurial ventures in general, financing is very important because it not only provides the resources that businesses need to operate and grow, but also expresses the valuation of a startup business and its potential for growth, enabling the company to create a good public impression of their brand and their products or services. Tech startups with the potential for growth (depending on the nature of the industry in which the companies operate) normally seek seed funding as the initial investment method (Brezak Brkan, 2010). Seed financing nurtures the startup idea by helping entrepreneurs carry out necessary tasks of market research and development work to establish the startup (Deventhal, 2017). After that, series A funding will be sought with the main purpose of optimizing the product and user base with a larger investment (this kind of funding usually amounts to around 2–5 million United States dollars for a startup business with an annual revenue of $1 million and valuation of $20 million (Dragon Law, 2015)); series B funding, the next level, is intended to help a startup business reach the development stage; and series C funding, normally the last funding round, aims to help startup businesses grow increasingly faster to reach a competitive market position (Deventhal, 2017). The series funding

Table 3
Excerpt of the revised theory of internet startup value propositions from the perspective of the customer.

Value construct	Measure item	Description	References
Community	Shared experience and resources	Community value perceived by customers in the sharing activity of members in online communities based on their experience and knowledge, from which they can fulfill their need to exchange information and receive necessary resources.	Ren et al. (2011) Huttu (2014) Kaaronen (2014) Vartiainen and Tuunanen (2013) McMillan and Chavis (1986)
	Emotional connection	Community value perceived by customers in the shared commitment and belief that results when members actively participate together.	Huttu (2014) McMillan and Chavis (1986)
	Ecosystem	Community value perceived by customers in the feeling of belonging, sense of personal fellowship, and the sense of matter between a community and its members.	Schwartz and Truman (2015) Lamb and Kling (2003) Tuunanen et al. (2010) McMillan and Chavis (1986)
Emotion	Knowledge fulfillment	Emotional value perceived by customers in the fulfillment of the demand for knowledge or satisfaction in the search for information.	Armstrong and Hagel (1996) Stockdale (2008)
	Transactional need satisfaction	Emotional value perceived by customers in the satisfaction of a transactional need (purchasing products or services).	Armstrong and Hagel (1996) Stockdale (2008) Ratchford (2009) Dubé and Morgan (1998) Bailey et al. (2001)
	Enjoyment and playfulness	Emotional value perceived by customers in a sense of enjoyment and playfulness.	Armstrong and Hagel (1996) Stockdale (2008)
Trust	Quality assurance	Trust value perceived by customers in quality assurance with regard to the product or service provided by an Internet startup.	McKnight et al. (2002) Petrovic et al. (2003)
	Security service	Trust value perceived by customers in the assurance of security services when customers access the website or application provided by an Internet startup.	Petrovic et al. (2003)
	Privacy protection	Trust value perceived by customers when their privacy (including their private information) is assured, without leaks, when they access the website or application provided by an Internet startup.	Tsai et al. (2011) Petrovic et al. (2003)
	Brand reputation	Trust value perceived by customers in the brand of the Internet startup or the brand of product or service provided.	McKnight et al. (2002) Petrovic et al. (2003)
	Legitimacy	Trust value perceived by customers in the assurance that the Internet startup will follow all applicable business legislation.	Petrovic et al. (2003)

Table 4
Summary of the financing activities of typical startups in the 1990s, 2000s, and 2010s.
Source: collected by the author from Crunchbase.com

Period	Startup name	Seed round	Series A	Series B	Series C	Other rounds
1990s	Google	$1.1 M (1998)	$25 M (1999)			$10 M (2000)
	Amazon		$8 M (1995)			
	Alibaba	Angel round: $5 M (1999)	Venture round: $20 M (2000)			
	Priceline	$1.9 M (1998)	$20 M (1998)	$55 M (1998)		
	Naver					
2000s	Facebook	$500,000 (2004)	$12.7 M (2005)	$27.5 M (2006)	$375 M (2007, 2008)	
	Spotify		$21 M (2008)	$50 M (2008)	€11.6 M (2010)	Series D: $100 M (2011) Series E: $100 M (2012) Series F: $250 M (2013) Series G: $526 M (2015)
	Dropbox	$1.215 M (2007)	$6 M (2008)	$250 M (2011)	$350 M (2014)	
	Airbnb	$620,000 (2009)	$7.2 M (2010)	$112 M (2011)	$200 M (2013)	Series D: $475 M (2014) Series E: $1.6B (2015) Debt financing: $1B (2016) Series F: $1.1B (2016–2017)
	Uber	$200,000 (2009)	$11 M (2011)	$37 M (2011)	$363 M (2013)	Series D: $1.4B (2014) Series E: $1.8B (2014) Series E: $1B (2015) Series F: $1B (2015)
2010s	Instagram	$500,000 (2010)	$7 M (2011)	$50 M (2012)		
	Flipboard		$10.5 M (2010)	$50 M (2011)	$1B (2013)	Series D: $50 M (2015)
	Snapchat	$485,000 (2012)	$13.5 M (2013)	$80 M (2013)	$50 M (2013)	Series D: $485 M (2014) Series E: $200 M (2015) Series F: $1.8B (2016)
	Zapier	$1.3 M (2012)				
	Grab Taxi		$5.2 M (2013)	$15 M (2014)	$65 M (2014)	Series D: $250 M (2014) Series E: $350 M (2015) Series F: $750 M (2016)

B = billion, M = million.

rounds can potentially last longer depending on the requirements and nature of each industry and startup business. The businesses selected for these three decades are all typical cases that received substantial funding from seed to series funding, partly reflecting their potential for growth and promising development in the eyes of the investors. The funding activities of the selected startup examples used to represent startup businesses during the decades covered by this study are summarized below (Table 4).

The above startups attracted much attention from investors, receiving a remarkable amount of investment during the series funding rounds. Of these, only Zapier, a startup established in the 2010s, has attracted only one seed investment round ($1.3 million in 2012) thus far. However, its impressive revenue and growth (it is on a $20 million annualized run rate and claimed to be profitable only two years after launch (Weinberger, 2017)) indicate that it has the capacity to earn increasingly more profit and finance its activities itself without requiring any additional investment. Hence, Zapier is considered a special case to research within this study. In general, the examined startups are typical and well-known in their industry, and it was expected that they would garner much attention from and be familiar to almost all of the survey participants who filled out the questionnaires designed to collect data for the study.

After qualitatively analyzing each startup example based on the proposed theory in each decade, a survey was conducted using questionnaires designed using the AHP method to collect data for a quantitative analysis. These questionnaires were designed to gather diverse opinions from experts in relevant fields on the characteristics of Internet startup value propositions from the customer's perspective over the last three decades. After the necessary data was collected, SuperDecisions version 2.8 for Windows was used to analyze the data.

4. Analysis

4.1. Qualitative analysis of value propositions in the 1990s, 2000s, and 2010s

4.1.1. The 1990s

The 1990s were not ideal for startup development due to a hostile climate characterized by capital shortages, crowded markets, and recessions. According to World Bank forecasts, the environment was unlikely to improve soon, with gross domestic product expected to grow at a rate of only 1%–2% per year. Unemployment increased, contributing to the appearance of “several startups.” A study published by the National Federation for Independent Business in the 1990s revealed that, of every four entrepreneurs, at least one had been unemployed before starting their business (Murphy, 1992). However, everything changed in 1995, also known as “the year the Web started changing lives,” when the Internet and World Wide Web moved from technological and academic terminology to household words. By 1995, a majority of Americans (54%) used a computer connected to the Internet at work, at school, and at home. About 18 million American houses were equipped with a computer and modem, an increase of around 64% from 1994 (Times Mirror Center for The People and The Press, 1995). With the development of the Internet, opportunities to earn money by taking advantage of the Internet increased substantially. Of the Internet startups born in that decade, some still exist: Amazon (established in 1994), Google (1998), Priceline (1998), Alibaba (1999), and Naver (1999) (Table 5).

4.1.2. The 2000s

In the 2000s, overall entrepreneurship activities decreased due to the effects of the financial crisis that lasted from the late 1990s to the early 2000s. However, the economy gradually recovered, and annual gross domestic product growth reached 8% in 2000–2008 (United Nations, 2014). Despite a serious financial crisis in 2009, the 2000s saw the appearance of several startups such as Facebook, Spotify, Dropbox,

Table 5
Value proposition measure items of startup examples established in the 1990s, in detail.

Name of startup	Value construct	Detail
Amazon	Community	- The site allowed customers to comment publicly about books they had bought, and consider the public comments of other customers carefully before making a transaction.
	Emotion	- Amazon allowed customers to buy qualified books at a 10%–30% discount (Encyclopedia, 2018). - It also allowed customers to choose preferred titles more easily using categories such as hot topics, bestsellers, and award winners.
	Trust	- When launched in 1994, the site included a searchable database of > 1.5 million titles. In 1996, it introduced the Amazon Associates Program, the first online affiliate program of its kind; and in 1997 it introduced Amazon's 1-Click shopping to support customers better (Amazon Delivers website).
Google	Community	This value proposition has not been clearly reflected in this period
	Emotion	- Google allowed people to search for information, research, study, and entertain themselves; and it served almost all customer needs related to information.
	Trust	- It ensured the quality of the search engine by limiting pop-ups or advertising, and claimed not to follow the "advertising funded search engine" model (Stross, 2008).
Alibaba	Community	This value proposition has not been clearly reflected in this period
	Emotion	- Alibaba satisfied the transactional need of many small Chinese firms to access potential customers and suppliers without using middlemen (Hangzhou, 2010).
	Trust	This value proposition has not been clearly reflected in this period
Priceline	Community	This value proposition has not been clearly reflected in this period
	Emotion	- Priceline provides customers with better prices through the "Name Your Own Price" system, which allows customers to choose the price of airline tickets, hotel rooms, car rentals, and other services, and matches them with a suitable service provider (Fay, 2004)
	Trust	This value proposition has not been clearly reflected in this period
Naver	Community	- Naver with Jisik In allows users to ask and answer questions.
	Emotion	- Initially, it was the only Korean-language search engine. - In the next decade, it also diversified and developed several related services.
	Trust	This value proposition has not been clearly reflected in this period

Table 6
Value proposition measure items of startup examples established in the 2000s, in detail.

Name of startup	Value construct	Detail
Facebook	Community	- Facebook enables global interaction among people and pages (businesses) via text, pictures, and videos (Dogruer et al., 2011).
	Emotion	- Facebook enables communication and entertainment.
	Trust	- Facebook's settings enable diverse customizable setups, providing users with adequate security and privacy for their accounts. - In 2016, Facebook upgraded to create a new experience for customers; for example, the "like" button was changed to include thumbs-up, heart, angry-face, or happy-face symbol options (Thielman, 2016).
Spotify	Community	- Spotify launched shared playlists in 2007 to allow people to share their favorite playlists freely with others (Crook and Tepper, 2015).
	Emotion	- Spotify satisfied listener demand for qualified music enjoyment, and tried to update to help customers instantly and legally find and play any song in the world (Kniberg and Ivarsson, 2012) (Teague, 2012), by including several desirable features of its illegal predecessors (Pollack, 2010).
	Trust	- All music is provided in strict compliance with copyright restrictions (Pollack, 2010)
Dropbox	Community	- Dropbox posted a three-minute video to Digg to share its technology and operation with potential users (Ries, 2011). - When it was founded, Dropbox opened a blog at blogs.dropbox.com to share the latest news with its users and community.
	Emotion	- Dropbox allows anyone to obtain 2 gigabytes of free storage and provides storage pricing tiers to allow users to buy and update to a 50-gigabyte storage solution (Houston, 2008).
	Trust	- Data is securely backed up and synced automatically to the user's devices without human intervention. User privacy is Dropbox's first priority (Dropbox homepage).
Airbnb	Community	- During the 2000s, Airbnb's community features were not extensive. However, in 2011, Airbnb added a "social connection" feature allowing users to see common friends shared with hosts or other guests via Facebook (Siegler, 2011).
	Emotion	- In 2009, Airbnb's listings were broadened to encompass more diverse types of accommodation, including entire homes, apartments, private rooms, castles, boats, manors, treehouses, and private islands (Lang, 2014) to satisfy users' demands.
	Trust	- During the 2000s, the trust value was not extensive. However, in 2011, Airbnb offered $50,000 (later increased to $1 million) in secondary insurance, known as the "host guarantee," to cover property damage due to vandalism and theft (The Economist, 2013).
Uber	Community	- Passengers and drivers can communicate via the Uber application on their smartphones and rate each other on a scale of 1–5 stars (Allen, 2015).
	Emotion	- Initially, Uber only provided black luxury cars at a higher cost than a general taxi. After that, it gradually introduced diverse types of services for the customer, such as UberX (introduced in 2012) and UberPOOL (introduced in 2014) ((Tsotsis, 2012); (Lawler, 2014)).
	Trust	- Uber's rating schemes allowed customers and Uber drivers to evaluate each other, enabling the quality of service and brand reputation to be enhanced. Uber also deactivated or punished drivers who earned low ratings from riders (Lawler, 2014). Users with low ratings also find it difficult to find drivers (Price, 2015).

Airbnb, and Uber. Some typical Internet startups in this decade are examined in Table 6.

4.1.3. The 2010s

Since 2010, startups and Internet startups have made strong progress, not only developing rapidly but also receiving increasingly more attention from society. Despite a downward trend in the early 2010s, startup activity in the United States increased significantly from 2014 to 2015, (Morelix et al., 2015). In Latin America, startups received much support from the media, investors, and policy makers. Several countries (e.g., Argentina, Brazil, Chile, and Colombia) introduced various programs to support startup establishment and operation (OECD, 2013; OECD, 2015). In India, the number of startups was estimated to have increased from 3100 in 2004 to around 11,500 in 2010 (Grant Thornton 2016). During the 2010s, many startups were established; the names of some have become familiar to global Internet users and some have become industry giants. This study chose to analyze five typical startup examples in different sectors: Instagram (established in 2010), GrabTaxi (2012), Flipboard (2010), Snapchat (2011), and Zapier (2011) (Table 7).

Table 7
Value proposition measure items of startup examples established in the 2010s, in detail.

Name of startup	Value construct	Detail
Instagram	Community	- Instagram allows users to share photos and videos with others, and apply several filters.
	Emotion	- People can enjoy life moments captured in shared pictures.
		- People can connect globally via shared pictures and videos. A Pew report stated that online photos and videos have become key social currencies (Rainie et al., 2012).
	Trust	- Instagram allows users to set privacy preferences to limit viewers and maintain higher privacy. It follows an asymmetric model, meaning that if user A follows B, B is not required to follow A back (Hu et al., 2014).
GrabTaxi	Community	- Drivers and passengers can connect with each other via the application, which was built with Global Positioning System features to allow passengers check and follow the driver's position on a map (Noviandari, 2014).
		- Passengers can rate the services provided by drivers, providing references for others.
	Emotion	- Taxi supply and demand can be matched easily through the platform.
		- GrabTaxi is adding more features to satisfy diverse user demands. In 2015, GrabTaxi offered Singapore users a “Flash” booking feature to allow users to book the nearest vehicle (Grab Press Centre, 2015).
	Trust	- GrabTaxi collaborates with local and municipal governments to improve transportation service quality. It shares data via the World Bank's Open Traffic platform to provide real-time data streaming (Lin and Dula, 2016).
Flipboard	Community	- Flipboard allows its readers to collect favorite content and share it with others.
		- Flipboard Club enables users to share Flipboard-centric topics (Vega, 2015).
	Emotion	- Flipboard aims to provide readers with a totally new experience of reading magazines via mobile devices.
		- It allows readers to make their own playlists of favorite articles and collect content based on readers' interests from various social networks to provide the most relevant content to readers (Graham, 2013).
	Trust	- Flipboard incorporated the Reader Enhanced Display Bolt Program to provide readers with fast and high-quality services from their mobile devices (Stolyar, 2017).
		- Flipboard allows readers to set their account to public or private to create private magazines or share a magazine with others (Kleinberg and Guth, 2015).
Snapchat	Community	- Snapchat allows users share photos and videos in a playful and “in the moment” manner.
		- It allows users to search their friend lists and chat with friends, like a messenger application. However, the chat contents also disappear quickly (Connect Safely, 2015).
	Emotion	- It is an interesting social network that enables people to join, connect, and have fun.
		- People can connect globally via shared pictures and videos.
	Trust	- It is open to people aged 13 and older, following the United States Children's Online Privacy Protection Act (Connect Safely, 2015).
		- It provides Snapcash for people aged 18 and older, in partnership with Square, Inc., and uses two-factor authentication to protect users and payments (Lao et al., 2017).
Zapier	Community	- Zapier established a blog at zapier.com/blog to help users update with best practices, tips, and reviews from other users (Foster, 2013).
	Emotion	- It solves the issue of a busy working life involving many tasks by connecting user work applications and automatically moving data among them (Bort, 2016).
		- It also releases a usage report to inform users of the most-used apps (Bort, 2016).
	Trust	- Zapier applies several methods to protect user privacy: credential protection with bank-level encryption, storage of raw requests made in Zapier for seven days for troubleshooting purposes, and a long-lasting task history to enable the company to monitor and fix mistakes better (Zapier website).

4.1.4. Comparison by decade (1990s, 2000s, and 2010s)

To make a thorough comparison of Internet startup value propositions from the customer's perspective in recent decades, a survey was conducted. Over the course of one month (February 1–28), 101 questionnaires were sent to various experts (professors in economics and policy, experts in science and technology management and policy, and experts in innovation entrepreneurship) and university students (majoring in economics, and science and technology management and policy). The survey received 34 responses by the end of February: 9 from professors, 11 from experts, and 14 from university students.

Regarding questionnaire surveys conducted for research, the required sample size is an important factor in the usefulness of the survey results. However, a survey using AHP questionnaires does not require many participants because AHP is used as a multi-criteria decision-making technique that helps participants make complex decisions. Moreover, as AHP is a subjective method rather than a statistical technique, it does not require a large sample size to yield a meaningful result (Cheng and Li, 2002). In the case of this study, the topic is specialized with knowledge related to value proposition from the customer's perspective and startup business. Hence, since survey participants must be equipped with a sufficient background of related knowledge, the sample size is small.

Previous researchers have carried out AHP surveys with a small sample size. For example, Lam and Zhao (1998) administered an AHP survey on quality of teaching to eight experts, Cheng and Li (2002) administered an AHP survey on construction partnering to nine construction experts, and Wong and Li (2006) obtained ten questionnaire responses to an AHP survey on intelligent building systems. The researchers all collected useful data that led to meaningful results, despite the small sample sizes.

As for the value constructs “community,” “emotion,” and “trust,” AHP questionnaires were provided to help participants decide the most measured items of each value construct in each decade. An example of the AHP questionnaire type used in the research is given in Fig. 1. An example of computation results using SuperDecisions software (version 2.8) is given in Fig. 2.

Instead of comparing several options, which could confuse participants, the AHP questionnaire built several pairwise comparisons allowing them to compare two options with each other using Saaty's nine-point scale of importance (1, 2, …, 9). A comparison matrix was established based on those pairwise comparisons, and the priority vector (or eigenvector) was calculated as follows:

$$w_i = \frac{a_i}{\sum_{i=1}^{n} a_i}$$

in which a_i is a set of eigenvector components and w_i is a set of normalized eigenvector components.

Next, to check the consistency of each response, the consistency index (CI) and consistency ratio (CR) were calculated as follows:

$$CI = \frac{\lambda_{max} - n}{n - 1}$$

in which n is the number of compared options and λ_{max} is the largest eigenvector, $\lambda_{max} \geq n$; and

$$CR = \frac{CI}{RCI}$$

in which RCI is the random consistency index that could be taken from

*As for '**Emotion**', in which periods (1990s, 2000s, or 2010s) 'Emotion' value is conveyed most to customer? Please give your opinion for each period in the below tables.*

With respect to **PERIOD 1990s**, using scale from 1 to 9 (where 9 is extremely and 1 is equally important), please indicate (X) the relative comparable of Option A (left column) to Option B (right column)

Option A	Extremely		Very strongly		Strongly		Moderately		Equally		Moderately		Strongly		Very strongly		Extremely	Option B
Knowledge fulfillment	9	8	7	6	5	4	3 X	2	1	2	3	4	5	6	7	8	9	Demand/ Need satisfaction
Demand/ Need satisfaction	9	8	7	6	5 X	4	3	2	1	2	3	4	5	6	7	8	9	Enjoyment and playfulness
Enjoyment and playfulness	9	8	7	6	5	4	3	2	1	2	3	4	5	6 X	7	8	9	Knowledge fulfillment

Fig. 1. Example of the AHP survey questionnaire type.

the RCI table suggested by Saaty (Table 8).

If the consistency ratio is < 10%, then the matrix is considered to have an acceptable consistency. If the consistency ratio is equal to or > 10%, then the matrix is considered to have an inconsistency and the response will be abandoned to ensure the consistency of the research as a whole. Applied to the example of the AHP questionnaire type in Fig. 1, the process to find the most appropriate of three options was supported by SuperDecisions version 2.8 for Windows. After the

Table 8
Random consistency index (RCI) table.

Number of alternative (n)	3	4	5	6	7	8
Random consistency index (RCI)	0.58	0.90	1.12	1.24	1.32	1.41

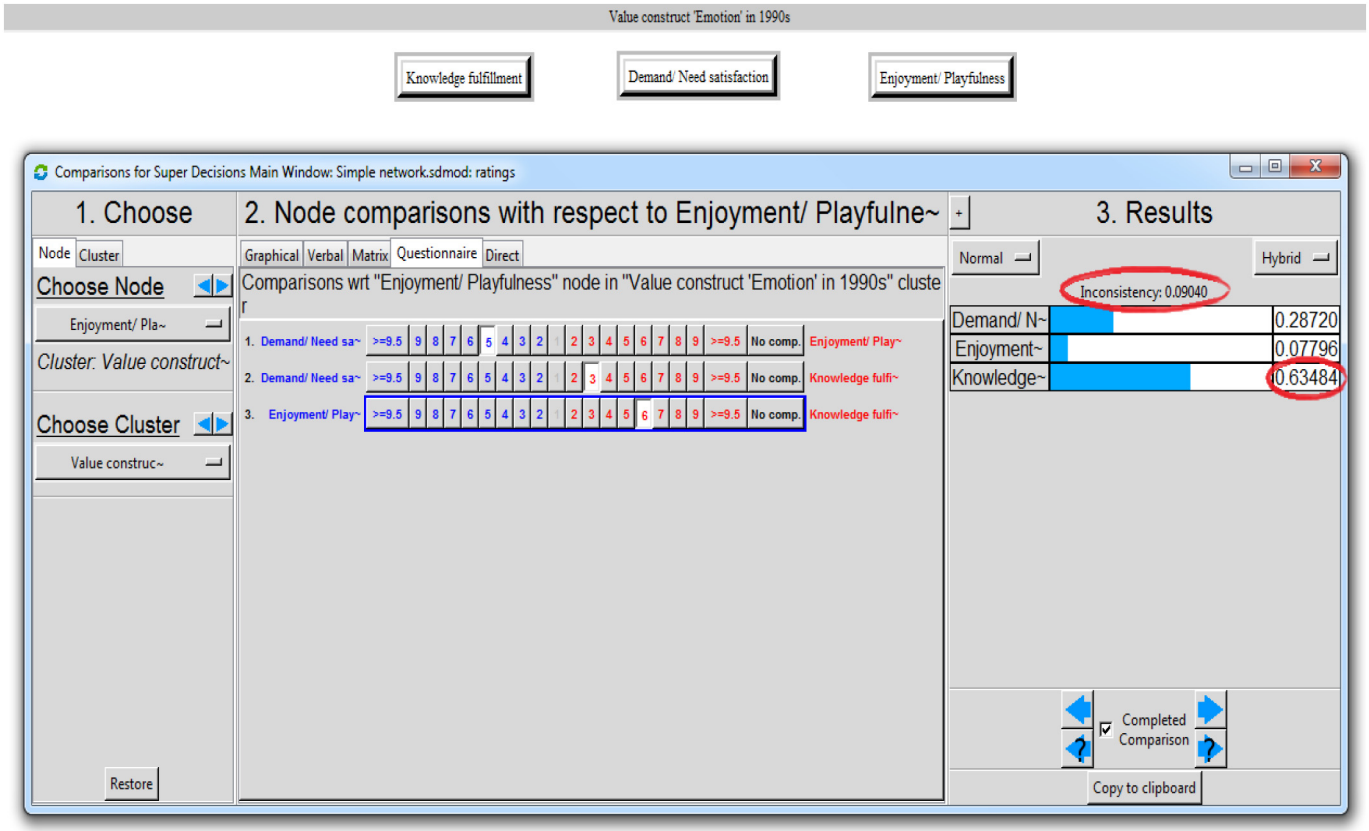

Fig. 2. Example of computation results using SuperDecisions software (version 2.8).

Table 9
Data on responses with inconsistency of value construct 'community'.

	Period 1990s	Period 2000s	Period 2010s
Abandoned cases	- 5 answers having CR ≥ 10% - 1 answer having 2 results of first position	8 answers having CR ≥ 10%	8 answer having CR ≥ 10%
Number of appropriate cases	29 appropriate answers (1 answers having 2 results of first position), then it is 30 appropriate cases	26 appropriate cases	26 appropriate cases

Table 10
Data on responses with inconsistency of value construct 'emotion'.

	Period 1990s	Period 2000s	Period 2010s
Abandoned cases	- 9 answers having CR ≥ 10% - 1 answer having 2 results of first position	4 answers having CR ≥ 10%	10 answers having CR ≥ 10%
Number of appropriate cases	25 appropriate answers (1 answer having 2 results of first position), then it is 26 appropriate cases	30 appropriate cases	24 appropriate cases

data collected in Fig. 4 was inputted to create pairwise comparisons among the options, SuperDecisions version 2.8 automatically released the priority vector with the consistency ratio to check the consistency level of the entire comparison. The priority for the measure item "knowledge fulfillment" reached the first position (0.6348), with a 9.04% consistency ratio (CR < 10%). Hence, this result is meaningful and acceptable. The released table of results from SuperDecisions is as follows.

Regarding the value construct "community," the data collected from the survey questionnaire (after unsatisfactory results were eliminated) (Table 9) revealed some interesting facts (Fig. 3).

Almost all participants (67.9%) reported that Internet startups in the 1990s brought value to customers through shared experience and resources, but they voted for "emotional connection" in the 2000s (52%) and 2010s (62.5%).

As for the value construct "emotion," the satisfactory responses (CR < 10%) were collected (Table 10) and the percentages calculated as reflected in Fig. 4.

Most participants (57.7%) reported that Internet startups in the 1990s brought value to customers by fulfilling knowledge and information needs. Participants reported that startups in the 2000s fulfilled not only transactional need satisfaction but also enjoyment and playfulness, with each value receiving 42.9% of the vote. A remarkable change is observed in the 2010s, when 62.5% of participants voted for the value of enjoyment and playfulness provided by Internet startups, nearly ten times the figure recorded for the 1990s. Internet startups in the 2010s appear to focus mainly on meeting customer demands for enjoyment and relaxation.

Analysis of the collected data (Table 11) reveals the main trend in the "trust" value construct. The two most voted-for measure items in the 1990s are "brand reputation" (earning 39.1% of votes) and "quality assurance," with 34.8%. In the 2000s, "privacy protection" received the most votes (37.5%), following by "security service" with 29.2%. In the 2010s, the two most voted-for items were "security service" (38.1%) and "legitimacy" (33.3%) (Fig. 5).

In short, in the 1990s, people interacted in online communities created by Internet startups to meet the demand for shared experiences and resources. This trend gradually changed when Internet startups established in the 2000s and 2010s allowed more proactive participation among people to make better emotional connections, creating new value propositions for customers in general.

In the 1990s, most customers gained value from the satisfaction of knowledge and transactional needs, such as the demand for shopping, buying, or selling. However, in the 2000s, there was a gradual shift. Startups established in the 2000s and 2010s appear more social and open, and focus more on meeting the demand for entertainment and relaxation as life becomes busier and harder for most people.

If Internet startup customers in the 1990s gained value from brand reputation and quality assurance, customers in the 2000s gained value from security services and privacy protection provided by each startup. In the 2010s, customers gained trust value from security services and legitimacy. Customers seem to care increasingly about privacy and security, as, the more the world modernizes and technology develops, the more we are threatened by possible information leaks.

5. Conclusion

This research focused on observing and comparing changes of Internet startup value propositions, from the customer's perspective, from the 1990s to the 2010s. By analyzing typical examples of Internet

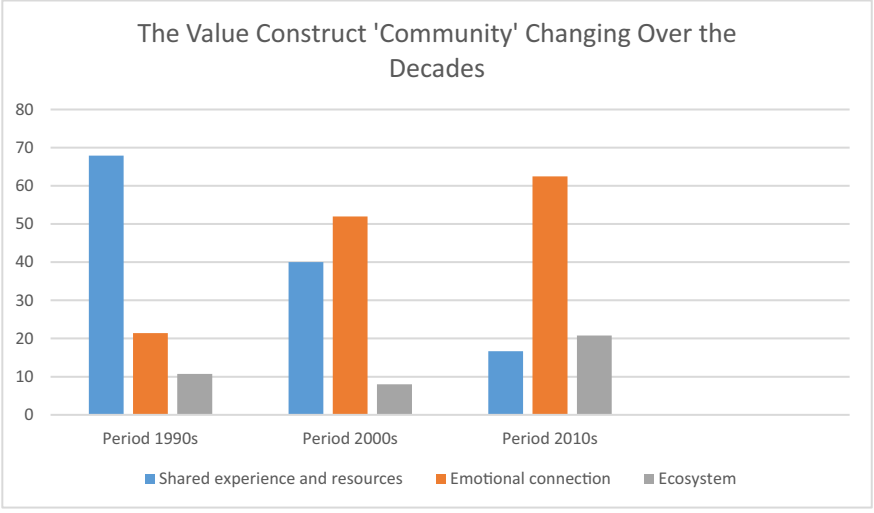

Fig. 3. The value construct "community" changing over the decades (1990s, 2000s, and 2010s).

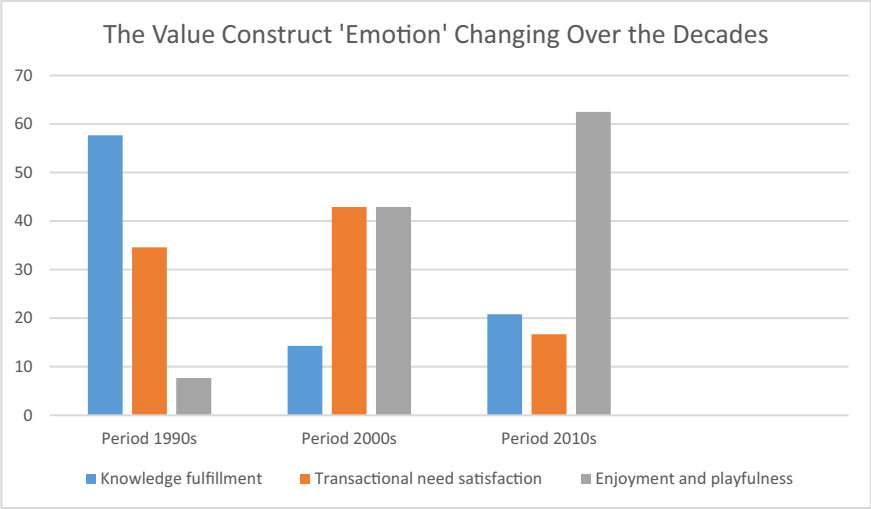

Fig. 4. The value construct "emotion" changing over the decades (1990s, 2000s, and 2010s).

Table 11
Data on responses with inconsistency of value construct 'trust'.

	Period 1990s	Period 2000s	Period 2010s
Abandoned cases	11 answers having CR ≥ 10%	10 answers having CR ≥ 10%	13 answers having CR ≥ 10%
Number of appropriate cases	23 appropriate cases	24 appropriate cases	21 appropriate cases

startups based on the proposed theory of value propositions from the customer's perspective, the research illustrates some special characteristics of these value propositions over the decades. Using a questionnaire survey administered to experts and university students interested in startup and entrepreneurship, the study gathered consistent opinions and revealed general features for each decade.

The novelty of this research lies in the upgraded theory of Internet startup value propositions from the customer's perspective, the practical study of several real examples of Internet startups based on the proposed theory, and the verification of these findings based on expert opinions concerning this issue. Hence, the research focuses on not only conceptual understanding but also practical findings concerning the issue of Internet startup value propositions, enabling readers to cross-check its reasonability and consistency. This research could enrich the academic discussion on value proposition issue in Internet startup in particular and online businesses in general because it seems that literature is lacking researches on value propositions in high-tech entrepreneurial startups (Molendijk, 2017), from which scholars in this field could develop theories and forecasts on value propositions from customer perspectives in Internet startups in next decades. This research could also give entrepreneurs and people with intention to open a new venture a background of value proposition issue in Internet startups. It promisingly opens several ideas on necessary value propositions that Internet startups should obtain to meet the changing demands of customers in upcoming periods.

However, this research cannot avoid some limitations during the data collection and analysis such as representativeness/generalizability, diverse respondent biases, internal and external validity etc. Also, when we conduct surveys for analysis and research, we cannot avoid several potential errors such as measurement error, sampling error, internal validity error, and statistical conclusion error (Straub, 1989), which is another limitation of this research. The research was cognizant of these errors and attempted to minimize them by using suitable survey conducting methods and relevant analysis techniques.

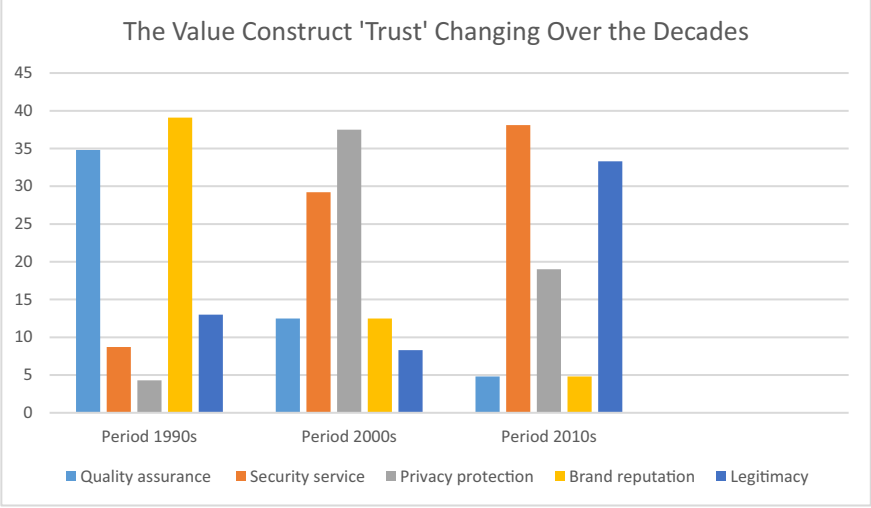

Fig. 5. The value construct "trust" changing over the decades (1990s, 2000s, and 2010s).

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