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An analysis of business models in Public Service Platforms

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ABSTRACT

Public Service Platforms (PSPs) are a new type of technology platform. They are based in the philosophy of New Public Management (NPM) and support public services for citizens in quasi-markets. This article increases our understanding of the business models behind these PSPs in terms of their Value Propositions, structures, networks, and financing. We interviewed representatives from 14 PSP providers in four public sectors in Sweden: education, healthcare, elder care, and public pensions. We identified a "Traditional view" with its focus on public agencies and neutral information and an "Emerging view" that includes dialogues, user evaluations, long-term perspectives on choice, promotion of the ideal of choice, and self-promotion by public agencies. The article contributes to research with its empirical example of the digitalization of NPM and the underlying business logic of PSPs.

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1. Introduction

In their seminal book, *Reinventing Government*, Osborne and Gaebler (1992) conclude that the public sector must abandon its monopolistic control that may have worked in the industrial age but is poorly suited to the information age and instead ask, "How do you take a bureaucratic system and transform it into an entrepreneurial system?" Their question is prompted by a growing ambition to replace government control with market control (see also Chandler & Daems, 1980). This emerging, 'competitive landscape' is at the core of New Public Management (NPM) — institutional market reforms that offer choices in public services and in service providers in quasi-markets. The principles of New Public Management (NPM) are well known to readers of *Government Information Quarterly*. For this reason, we do not present a comprehensive review of the NPM literature (for a review, see Thomas, 2012).

A central feature of NPM in many countries is the introduction and promotion of market reforms that control the production and delivery of public services (Le Grand, 2007). For example, the use of market-like mechanisms has resulted in quasi-markets in healthcare (Chauvette, 2003) and in education (Grubb, 2002). Such changes influence both the supply side and demand side of public services. There is an increase in the number of public service offerings, for example, in education, elder care, and healthcare, which are subject to market-like mechanisms. Consequently, the public sector is increasingly in competition or collaboration with private sector actors; this situation is often referred to as *co-opetition* (Nalebuff & Brandenburger, 1996). Another consequence of this market orientation is that patients, students, and future pension recipients are viewed as customers (Lindgren & Jansson, 2013; Mosse & Whitley, 2009).

With *co-opetition*, the exchange process between citizens and public service providers has changed. Using vouchers, citizens can now 'shop-around' for public services. While many, not least the users, see a very positive benefit in this new public services model, others are more critical. The criticism is directed at the perceived over-emphasis on private sector vs. public sector goals and activities, and at the superficiality of treating citizens as customers (Lindgren & Jansson, 2013; Mosse & Whitley, 2009). Irrespective of this criticism, the focus on E-government and digitalization has spurred momentum in the development and exploitation of different information systems and technologies in the exchange process between citizens and public service providers (Janssen, Kuk, & Wagenaar, 2008; Panagiotopoulos, Al-Debei, Fitzgerald, & Elliman, 2012).

Through our study of four areas of the Swedish public sector, we identify a new type of information system, which we label Public Service Platform (PSP). This technology supports the demand side of the marketplace (i.e., citizens who search among public offerings) as well as the supply side (i.e., the public and private sectors that provide publicly funded services in quasi-markets). Research related to PSPs, with few exceptions (Ranerup & Norén, 2015), mainly focuses on a single domain of public service such as elder care (Meinow, Parker, & Thorslund, 2011), healthcare (Nordgren & Åhgren, 2011; Ranerup, Norén, & Sparud-Lundin, 2012), or education (Gomez, Chumarcero, & Paredes, 2012; Schneider, 2001). In terms of healthcare, Coulter (2010) discussed the introduction of and need for well-designed support for patient choice in services. In a study on the Choose & Book system and its use by patients, Green, McDowell,

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and Potts (2008) found that physicians exert considerable influence on the choice when patients are allowed to choose. Damman (2010) and Ranerup et al. (2012) surveyed technologies for patient choice and their characteristics in healthcare in Sweden and Holland. Collectively, this prior research contributes to our understanding of how technological platforms work from the perspective of citizens.

Previous research is also limited to the study and theorization of technology owned and controlled by a single organization. More often than not, such organizations are publicly-owned entities. Thus, there is often limited understanding of the dynamics of the technology used in co-opetitive environments. Furthermore, as revealed by previous research with a focus on citizens, the analysis of the supply side of the supporting technologies or, in other words, of the actors behind them in these markets, is deficient. To address this gap, we focus on the actors behind PSPs, and in particular on their business models. Therefore, in this paper we expand on existing research by focusing on the underlying business models of PSPs. Our research question is as follows: What are the underlying business models of Public Service Platforms in sectors driven by quasi-markets? We investigate PSP business models in 14 cases, focusing on four business model components. Our research methodology consists of interviews and examinations of technologies.

All organizations, public and private, use similar resources (i.e., human, capital, and knowledge) in their service offerings (Al-Debei & Avison, 2010; Amit & Zott, 2001; Hedman & Kalling, 2003). In the E-government research on business models, the focus is on the exchange of information and services, regardless of the provider (Panagiotopoulos et al., 2012). In this study, we drew on the business model literature that deals with the research on strategy, information systems, and E-government. We collected data from PSPs across four sectors in Sweden: education, healthcare, elder care, and public pensions. Following Zott and Amit's (2007) suggestion, we examined the PSP business models with respect to their public services offers (i.e., services traditionally offered only by public sector providers).

Our paper contributes to the E-government literature in terms of empirical examples from Sweden and theoretical insights on how NPM materialized in a digital world sometimes characterized as post-NPM or Digital-Era Governance (Dunleavy, Margetts, Bastow, & Tinkler, 2006). Specifically, we introduce and focus on PSPs — a new and emerging technology platform that provides public services. We also show the underlying business logic of different PSPs and crystallize two types of business models for existing PSPs: the Traditional view and the Emerging view.

The remainder of this paper is organized as follows. Section 2 explains prior research on business models and their core components. Section 3 describes our research methodology. Section 4 explains the results in terms of the four sectors of Swedish public service. Section 5 discusses our results and its implications, and Section 6 concludes the study.

2. Business models in the public sector

Our assumption, as introduced in Section 1, is that NPM quasi-markets with their technological and organizational structures and business models are interrelated. One fundamental result of the NPM movement is the introduction of modern business thinking, including competition, to the public sector (Dunleavy et al., 2006). The practical outcome is the shift from the public sector's monopolistic control of service delivery to a quasi-market where public and private organizations compete in offering taxpayer-subsidized services. With private competition in such public services, the logic of the free market is introduced with its business model of value creation and profit maximization.

2.1. Business models: a brief overview

The business model — the representation of how an organization creates, delivers, and captures value — expanded in the late twentieth century to include the way in which Internet-based organizations conduct their activities (Timmers, 1998). The former EU Commissioner Paul Timmers (1998) pioneered the popularization of the use of business models in electronic markets. A number of researchers have applied the concept of business models: e.g., Janssen and Zuiderwijk (2014); Janssen et al. (2008), and Panagiotopoulos et al. (2012). The term business model, which originated in entrepreneurship and e-commerce and evolved into business and strategy research, is today often used in the public sector discussion.

Practitioners rapidly adopted the business model concept to describe the interactions and relationships among stakeholders in the firm's Value Network (Magretta, 2002). With reference to business models, Amit and Zott (2001) described the role of the value creation logic, Osterwalder, Pigneur, and Tucci (2005) described business processes, and Hedman and Kalling (2003) described the resource base and the longitudinal evolution of business.

According to Al-Debei and Avison (2010), the theoretical application of the business model concept has evolved over the years. Researchers have focused on defining and classifying business models for electronic markets (Timmers, 1998), on identifying specific business model types (e.g., utility business models; Rappa, 2004), and on listing E-business components (Pateli & Giaglis, 2004). Some public sector research studies have examined business models that evaluate public policy (Poel, Renda, & Ballon, 2007) or that take a broader E-government perspective (Janssen et al., 2008; Panagiotopoulos et al., 2012).

2.2. Business model components

With some exceptions, few studies systematically analyse business model components. We call attention to some studies that address this topic. Shafer, Smith, and Linder (2005) studied the business model definition, Pateli and Giaglis (2004) proposed an E-business model research framework, and Shafer et al. (2005) identified and synthesized business model components as the four categories of strategic choice, Value Network, value creation, and value capture. In their review of 29 research articles, Pateli and Giaglis (2004) found similar components. Zott, Amit, and Massa's (2011) review of 133 articles supports these findings although they noted that disagreement still exists on the definition of the business model. As a result, research tends to be designed to increase our understanding of business components in isolated, scientific silos. Based on this brief overview of the main contributions to the business model literature, in this paper we use the four generic business model components (Al-Debei & Avison, 2010) (Table 1) to analyse the 14 cases of this study.

Although the business model emerged from the business environment of competition, all organizations that offer goods and services do to some extent share the business model's core components. Business model components are also relevant in the discussion of the issues and dynamics of information systems in the public sector (Al-Debei & Avison, 2010; Panagiotopoulos et al., 2012).

As researchers have noted, the use of business models in E-government provides researchers with a complementary perspective

Table 1
Business models and their core components.
Adapted from Al-Debei and Avison (2010).

Component	Characteristics
Value Proposition (VP)	Factors related to the offer of services, products, and activities that create value for users.
Value Architecture (VA)	Factors related to how resources (tangible or intangible) are constructed in order to create value for users (e.g., technological configurations and organizational structure).
Value Network (VN)	Factors related to actors (internal and external) and their roles in the transactions in actor-to-actor collaboration.
Value Finance (VF)	Factors related to finance, ownership, and costs.

on the activities and goals of organizations (Baird & Raghu, 2015; Janssen et al., 2008; Panagiotopoulos et al., 2012). For instance, Janssen et al. (2008), inspired by Weill and Vitale's (2002) study, analysed the homepages of various public organizations. Their interest was the role of the technological components in business models for E-government. They identified eight atomic business models: Content provider, Direct-to-customer, Value-net-integrator, Full-service provider, Infrastructure service provider, Market, Collaboration, and Virtual community. In contrast, Panagiotopoulos et al. (2012) studied a single case of information technology for public engagement using the core components of business models that Al-Debei and Avison (2010) proposed. More recently, Janssen and Zuiderwijk (2014) published an overview of emerging atomic business models for connecting open data from public providers with their users. Panagiotopoulos et al. (2012) noted the value of an enhanced understanding of the different dimensions or components of business models that can substitute for ad hoc development, thus suggesting potential improvement points. In line with this, our study of Swedish PSPs expands the possibility for a re-interpretation of the scope of business models in quasi-markets.

In this paper, we focus on the four business model components and apply them to multiple cases. This focus allows us to look at new ways technology is used in E-government today and to empirically develop a detailed understanding of actors' rationales when they introduce and operate PSPs. Furthermore, as Panagiotopoulos et al. (2012) state, business models can describe the transition and the translation between public policies and their operational details. This use of business models, we argue, is also relevant for NPMs and the digitalization of quasi-markets.

3. Context and method

3.1. Research setting

Many countries have introduced market reforms in the public service arena, including various kinds of quasi-market systems that offer competition (Le Grand, 2007). Policy documents and initiatives in Sweden reveal an increase in the both public sector and private sector use of technologies in choice reform (cf. Ministry of Education and Science, 2012; The Swedish Agency for Health and Care Services Analysis, 2013). Today, the Swedish government has relinquished its public services monopoly in education, healthcare, elder care, and public pensions. After a few decades of transition, public services in Sweden now reflect many of the principal ideas of NPM. In the early 1990s, Sweden went through severe financial crisis, which forced the public sector to become more efficient. However, the NPM movement started in the 1980s and early 1990s when Sweden placed considerable emphasis on NPM even though the ruling government was centre-left politically and not particularly enthusiastic about free market ideologies (Hood, 1995). Some observers claim, however, that the introduction of market reforms in the public service sector was a liberal project (Le Grand, 2007; Osborne & Gaebler, 1992).

Generally, choice reform in Sweden is driven by governmental regulation. Such reforms often involve a voucher system or similar arrangement that allows users to 'shop around' and choose their taxpayer-subsidized services (Le Grand, 2007). The service providers are public agencies, semi-private agencies, and private agencies. Equally important, the services, the regulatory framework, and the right of choice are increasingly transparent via access to the PSPs. The four public services areas described in this paper represent a broad spectrum of choice possibilities as well as a large portion of Swedish public services. Table 2 summarizes the history of choice reform in these four areas in Sweden.

Table 2
Choice reform in Sweden.

Sector	Year of reform	Scope of reform
Education	1992 (primary and secondary education) 1994 (upper secondary education)	Choice of schools in a municipality operated by various agencies (public, semi-private, private), although tax-financed. The 1992 reform included a shift of responsibility from the government to the municipalities.
Healthcare	2010	Choice of primary healthcare centre in a County Council. No choice of physician. The County Council or private agencies in public healthcare operate these centres.
Elder care	2009	Choice of elder care (e.g., home help) by public or private agencies. Choice reform is optional for the municipalities. Some 60% of the municipalities have adopted this reform.
Pension	2000	Choice in the public pension plan permits investment choices among some 800 premium pension funds. Of the fee charged on employee earnings, 16% is for the general public pension plan, and 2.5% is for the selected premium pension fund.

3.2. Research approach

We used a multiple-case approach in our study of PSPs in education, healthcare, elder care, and public pensions. We selected PSP cases in these four areas in which there are significant variations among the PSPs and their business models.

To create thick descriptions of the cases, we used three methods of data collection. First, we conducted 14 semi-structured interviews. We interviewed project leaders and managers about each PSP's business model, history, and future plans. One author conducted all interviews between December 2012 and May 2014. The interviews (30 to 70 min in length) were recorded and later transcribed. Our interview questions focused on the PSP and the business model. We asked all interviewees the same questions about the four core components of their business models. See the Appendix A for a list of our questions. Second, we analysed the policy documents and requirements related to the operations of the PSPs. Third, we examined the content and design of the PSPs as presented on their websites. The examination provided an opportunity to explore the offers on sites familiar to potential users of the services.

We applied the four core components of the business model concept in our analysis of the 14 cases. This analysis resulted in a theoretically-based description of the 14 cases (see Table 3 and Section 4). We used this description as the basis for our summary discussion and conclusions (see Sections 5 and 6).

4. Results

In this section, we offer a detailed analysis of the PSP business models. We use the four public service areas of our study to organize this analysis. Table 3 summarizes our findings. The first column in Table 3 identifies the public service area and the provider of the PSP in the 14 cases. The other four columns present data on the business model's components. The Value Proposition (VP) column explains the level of service the PSPs offer citizens and also describes the services and goals of the PSPs. The PSPs provide simple informative data, allow users to make comparisons of services, and offer other devices as well as benefits. The Value Architecture (VA) column presents linkages to information for users, indicates how much collaboration exists among the providers of data and technological resources, and also shows situations where citizens are a resource. The Value Network (VN) column identifies the provider and owner of the PSPs and the public services the PSPs offer. The VN also indicates which citizens have the right of choice in public services (because of space limitations, Table 3 does not present these data). For example, in education, eligible citizens are students and their parents; in healthcare, everyone with the right to choose is eligible; in elder care, the elderly and their relatives are eligible. Two cases (numbers 7 and 14) have a wider spectrum of users: people between 16 and 55 for education and 0–70 for pension.

The Value Finance (VF) column identifies who pays for the development and maintenance of the PSP.

4.1. Education

We analysed seven cases in the education area. There is considerable diversity among their PSPs. Although the providers differ in their Value Proposition (VP), most of the PSPs support informed choice by providing neutral information. The PSPs strive to present this information in cost effective ways.

However, one PSP (case no. 4) promotes the municipality's own schools:

> We have two assignments. The communication department's assignment is to market the municipality's upper secondary schools. The purpose of the second assignment, editorship of the website, is to satisfy the users' request that we list all the schools. [Representative 1 from the local public education administration, Municipality of Gothenburg, January 10, 2013].

> Naturally, we want as many students as possible. It is a way to market our schools as well. [Representative 2 from the local public education administration, Municipality of Gothenburg, January 10, 2013].

Case numbers 2 and 6 promote the VP of user choice:

> I suppose we three [PSP providers in No. 2] have different intentions. The Swedish association for the promotion of free enterprise wants to increase transparency […]. We like the opportunity for choice and the issue of choice itself. For this to work, there must be information about opportunities to make decisions. […] It is important that individuals can make these important choices. [Project leader, the Swedish association for the promotion of free enterprise, September 3, 2013].

Some PSPs offer rather advanced devices for making comparisons among schools. In some cases, future salary/wage levels related to various educational programmes are presented. Some PSPs, which support education choice, have devices that permit some degree of interactivity. Only one PSP (case no. 7) supports real-time interaction with citizens or other interactive involvement.

The Value Architecture (VA) is mostly based on internal resources and data from the public agencies. However, public–private-partnerships (PPPs) and the private agencies use both private and public resources and data. Only one case (no. 4) uses the resources of an advertising agency, suggests that the ambition of this PSP is to attract a broader audience and to use resources that promote services rather than provide more or less neutral information. Another case (No. 7) considers users as resources; here, the PSP allows users to ask questions online or take part in real-time chats in the application process.

There is significant variation in terms of the PSP providers and their roles in the Value Network (VN). We find many different providers: public agencies at the local, regional, and national levels, PPPs, organizations that promote free enterprise, and a 'traditional' commercial actor.

With respect to Value Finance (VF), most PSPs are financed by general or dedicated public grants or specific development projects. In one case (no. 7), a for-profit company finances the PSP. These findings indicate that funding mainly comes from the service providers or from national public organizations that represent these providers.

4.2. Healthcare

We analysed three cases in the area of healthcare. The Value Propositions (VPs) of the two public PSPs (cases 8 and 10) are to support choice in a neutral and cost-effective way and to provide transparency to citizens in their choice of healthcare. The VP of the private PSP (case 9) also promotes choice and competition:

> [The Swedish national association for promoting free enterprise] has communicated that they want to use us as a catalyst in the process […] They very much believe in market models …They think there will never be an effective market if people don't know the difference between A and B …they also represent the private companies. There are a great number of private healthcare providers. [Manager, Omvård.se, April 15, 2013].

From a technological perspective, the three healthcare PSPs support user comparisons by providing specific devices. Users can use these devices to select a few alternatives for detailed examination. However, they cannot finalize their choice on the private PSP because the website is not connected to a public agency that manages healthcare. Unlike the public PSPs, the private PSP has a Web 2.0 interface that allows users to submit evaluations and comments about public healthcare services.

As in education PSPs, the Value Architecture (VA) in healthcare PSPs is built around public and private providers who list the various healthcare centres. They mainly use public data, with the exception of one case (no. 9) in which citizens are the resource.

Public providers manage the Value Networks (VNs) of two PSPs (nos. 8 and 10). The third PSP (no. 9) is privately owned by the Swedish national association for the promotion of free enterprise, although it uses public data and permits citizens to submit evaluations. The Value Finance (VF) in the two public cases is provided by public funds from joint and individual County Council grants. The VF for the private PSP is privately funded by a temporary grant.

4.3. Elder care

We analysed two cases in the area of elder care. Their Value Propositions (VPs) support choice in a broad sense, offering general information about rights in elder care as well as specific information useful in comparing offerings. However, there is no technology support for making choice and no interactive tools are available. One case (no. 12) explains elder care on the provider's website:

> Most services in elder care demand a special application. It is the local government's administrative official who makes the decision based on needs. If you want to contact us about elder care — when you need elder care — you can visit *Elder care Direct*. 2. […] [1]

Thus, online assistance regarding elder care choice is minimal. The explanation, in part, may be that professional consultation is required, which the PSP cannot offer.

In general, the Value Architecture (VA) in these two cases includes the internal public agencies and their data. The Value Network (VN) includes only public organizations: one at the national level and one at the local level. The Value Finance (VF) is financed in the traditional way:

> It is a regular project that continues. If there was ever a specific temporary project, this must have been a long time ago. [Representative, the Municipality of Stockholm, September 4, 2013].

In summary, we found no cases of private PSP providers in the elder care sector. The PSPs for elder care show that agencies provide the minimum required information about choice and facilities, in part because there is no on-line competition that places pressure on the Web 1.0 PSPs.

[1] http://www.stockholm.se/FamiljOmsorg/Aldreomsorg/Att-soka-stod-och-hjalp/ [accessed Oct. 30, 2014].

4.4. Public pensions

We analysed two cases in the area of public pensions. Their PSPs differ from the other 12 PSPs in our study in that they are for choice of public pension investment funds rather than for choice of social service providers. Furthermore, the two public pension cases are quite different from each other. The Value Proposition (VP) for case no. 13 includes the provision of information and support for choice in a cost-effective manner and the description of the long-term consequences of choice. The focus is on the premium pension funds in the public pension system. The VP for case no. 14 is broader because it focuses on the provision of information about many types of pension funds (including funds outside the public pension system), future projected pension benefits, and the long-term consequences of choice (including information on retirement age):

> [Our purpose is] increased understanding of […] how different choices affect future pensions. […] People have seen their parents […] and believe that they will receive the same pension if they work as long as they did. This situation is changing rapidly. [Manager, Minpension.se, March 13, 2013].

To promote these values, case no. 13 provides neutral information as well as a multi-faceted list of devices that facilitates choices and comparisons:

> We know there are different groups. There are those who are not interested. […] and those at the other end of the scale who are very interested […] and need detailed data about funds. In the middle, there are those we think need decision support to make a choice of funds. And we have *The Fund Guide* [a Decision Support System in No. 13]. [Project leader, Pension Authority, May 27, 2013].

In contrast, case no. 14 provides holistic personal information about many different pension funds including future benefits. However, there are no devices that enable comparison and choice of funds.

The Value Architect (VA) includes internal and external contracted resources. Both PSPs use public and private data. As for their Value Network (VN), case no. 13 is owned by a national public agency, and case no. 14 is owned by a PPP:

> There is something called a consortium agreement between the State and the pension investment funds [Manager, Minpension.se, March 13, 2013].

In terms of Value Finance (VF), user fees finance case no. 13, whereas a combination of public grants and fees from public and private agencies finance case no. 14.

5. Discussion

5.1. Business models and PSPs for choice

This study of public service offerings illustrates that NPM in the digital age has changed four areas of public services in Sweden. The business models in these areas feature the relatively new public information technology platform — the public service platform or PSP — that provides public services for healthcare, education, elder care, and public pensions that citizens can chose among. The PSPs have different business logics and, in many cases, are developed in co-opetitive environments that involve both public and private providers.

We will now make a comparative analysis of the components of the business models in the four areas of public services in our study. The technologies that enable the VPs in our 14 cases include neutral information on choices, and sometimes, to a certain degree, interactive devices for making comparisons and choice. Active involvement of citizens is gaining momentum in the public sector (Andersen, Henriksen, & Medaglia, 2012). We observed use of social media and similar types of devices and activities in only two of our 14 cases (nos. 7 and 9). These two PSPs (each with a VN that includes private providers or organizations that represent them) allow users to engage in chats and to submit user evaluations, thus actively using citizen input of content as a resource in the VA. One interpretation of this finding is that, despite the recognition that PSPs are intended for interaction and citizen involvement, in this respect the Swedish public sector has not kept pace with 21st century communications. However, our analysis does not identify any support that actively rejects the social media that drive PSP technologies. It appears that the PSPs use technologies adapted to the public service organizations' ability.

Public agencies are not-for-profit organizations (Panagiotopoulos et al., 2012). As our study shows, with their goal of providing neutral, cost-effective public services (Table 3), the public PSP providers reflect this reality in their business models. Case no. 4 is an exception because its VP promotes its own schools.

Our findings also suggest an ideological dimension among the PSP providers. On those PSPs that are either operated by the Swedish national association for promoting free enterprise (nos. 6 and 9) or influenced by it (case no. 2), the VPs promote choice and competition. This business model reflects a market-oriented logic. Furthermore, the VPs, in part, include website devices that take a long-term perspective and reflect similar ideological dimensions for choice on aspects of lifelong career planning in education by presenting possible future salary levels (cases 6 and 7). The same emphasis on the long-term perspective and the ideology of lifelong career planning exists in public pensions (cases 13 and 14). In every PSP except one (case 4), the public agencies take a more traditional, monopolistic perspective. These PSPs present neutral information about the qualities of services provided instead of supporting students' future career choices or offering specific pension investment returns. However, as indicated, in the area of public pensions, public agencies are to some extent unavoidably involved in trying to maximize returns on pension investments and in optimizing people's success in the labour market.

In general, the PSPs of public agencies present the clearest expressions of VA when they use their own resources to fund the PSPs. The resources for private PSPs (cases 2, 6, 7, 9, and 14) are in part derived from a broader group of organizations and agencies. Another significant finding is that cases 7 and 9 allow users to offer comments and evaluations, which are actively used to rate and compare services.

The VN for the PSPs consist mostly of public agencies at various levels (national, regional, local). However, in five cases (nos. 2, 6, 7, 9, and 14), the providers are PPPs and/or commercial companies or their representative organizations. We observed that the providers in these five cases have PSPs for choice in quasi-markets. This means that commercial PSP providers or providers with a VP focused on, for example, choice and competition, are active in all areas except elder care.

As far as VF, most cases depend on public sector grants. However, we found that some PSPs also receive temporary project funding. For example, the Swedish national association for promoting free enterprise funds two such cases (nos. 2 and 6). Sometimes the cases include further development of their technological devices as a part of their regular activities (nos. 8, 11, and 12). Given what we have learned about the VNs and VFs, we see an emerging development in PSPs. Specifically, as new actors emerge, we see efforts to develop the technical components of the VPs so that they better support informed choice. A detailed study of these efforts is outside the scope of this paper, but an excellent prospect for future research.

In the recent emergence of PSPs, private agencies, for-profit entities, and other groups that promote free enterprise and competition (as featured in the VNs) play an important role. Semi-private organizations such as patient networks (Josefsson & Ranerup, 2003) may also offer PSPs, thus stimulating more competition and comparisons among the service offerings. Many public agencies promote the values of equality, responsibility, and transparency as they try to balance the various

interests in the public arena (Scholl, Barzilai-Nahon, Ahn, Popova, & Re, 2009). However, on the one hand, significant differences exist between public e-services and E-business. These differences reflect different attitudes about public services, the absence or presence of choice, and the roles of users as citizens or customers (Lindgren & Jansson, 2013). On the other hand, PSPs and their business models certainly represent a new logic that adds to the logic of business models as described by Janssen and Zuiderwijk (2014, p. 707): "Business models are the logic behind creating public value for society and/or revenue for companies." In our interpretation, this statement implies a rather distinct separation between public e-service and E-business. In other words, in our study we observed a 'hybrid' form of public services support with its associated business models (including ownership) that has the potential to serve users as they search for information.

Our analysis was inspired by the emerging business models described by Janssen and Zuiderwijk (2014) in their study of "infomediary" business models for connecting open data from public providers and users. However, our findings do not support their clear and two-dimensional result (for example, "level of access to data" and "level of dialogue") that enabled them to offer a full repertoire of atomic business models. Our study in general and our analysis in particular reveal a Traditional "*standard*" view or perspective on business models as well as a more multi-faceted Emerging view of business models. Table 4 summarizes these findings.

A complete analysis of our 14 cases (see Table 3) reveals the existence of business models used by PSPs that are owned by public agencies and that provide neutral information on a non-commercial basis in support of informed choice. We claim that this PSP business model is the traditional one in public e-services (Lindgren & Jansson, 2013). This suggests business models that are designed along another paradigm than the commercially based. For instance, the idea of a common pool of resources (Ostrom, 1990) might better explain these business models. Following the mindset of Ostrom (1990), the common pool of resources — i.e., public services — represent a limited resource, which must be distributed with care to safeguard long-term benefit for the greater common good. In contrast, cases such as 2, 6, 7, 9, and 14 have PPPs, commercial companies, and agencies with VNs with different forms of revenue (VF) compared to those at public authorities. Their repertoire of VPs is also more diverse because they intend to promote choice, competition, dialogue, and choice evaluation on a longer time-perspective. One case (no. 4) presents a business model with a public agency that does not provide neutral information on opportunities but instead promotes its own schools. Thus, cases 2, 4, 6, 7, 9, and 14 represent the Emerging view of PSP business models in the public sector and are examples of how the 'free market', in the form of associated actors and logics, is entering the public sector. In sum, the Traditional view and the Emerging view differ on aspects such as ownership, neutrality, and user activity. We propose that our analysis is a tentative first step towards defining relevant variables for a new repertoire of E-government business models.

Table 4
Traditional and Emerging views of PSP business models.

	Traditional view	Emerging view
Value Proposition	Provision of neutral information about alternatives, with the capacity to compare and choose.	Promotion of own services, promotion of choice, dialogue, user judgements, and reflections on choice in light of future opportunities.
Value Architecture	Public agencies manage the PSPs and provide data and technology.	Public and private agencies manage the PSPs providing data and technology; citizens are used as a resource.
Value Network	Public agencies and citizens.	PPPs, private agencies, organizations promoting choice, and citizens.
Value Finance	Regular grants to public agencies.	Temporary grants to public agencies and organizations; revenue from commercial companies.

5.2. Implications for policy and e-service design

Our study examines the business models of PSPs in quasi-markets. Our findings may lead to more options on technological designs (Panagiotopoulos et al., 2012). For instance, a simple example is the VP component in Table 4, which under the Traditional view provides only neutral information that supports comparisons but under the Emerging view offers a fuller repertoire of physical, ideological, and technological options. Some interesting examples are devices that enable dialogue, user judgements, and reflections on choice relevant to future opportunities and salaries/wages. None of these devices are typically found in more traditional PSPs; while they support choice, do not permit two-way communications (with the exception of the actual choice decision). The focus of traditional PSPs is on providing factual information about public services. However, the technological component of business models in both the Traditional view and the Emerging view (Table 4) express features in line with Dunleavy et al. (2006) emerging Digital-Era Governance, with a focus on "Needs-Based Holism" and "Digitization Processes" (cf. client-based or needs-based reorganization, one-stop provision and service reengineering, electronic service delivery instead of other forms, etc.) being part of the business models and their VPs (Table 3).

As discussed previously, the VN of our PSPs includes a broad spectrum of the general public, PPPs, and private agencies. It is important to acknowledge that these providers all act as quasi-market regulators and designers (Kastberg, 2008). Of course, regulators influence all markets, particularly quasi-markets formed by, among others, the actions of civil servants and politicians. Quasi-markets are still emerging, having begun in the 1990s and continuing now with NPM reforms. Our analysis of business models thus adds to the understanding of regulation, e-service design, and the associated description of a broader spectrum of actors in VNs.

This broader spectrum of actors as well as agencies in the VN of PSPs results from, among other things, the increasing use of Open Data by public and private organizations (Janssen & Zuiderwijk, 2014). Based on our analysis of the logic of PSPs, we also note that the issue of the public ethos and the concept of "public" itself (Lindgren & Jansson, 2013) are recommended areas for future research. These ideals are inherently connected to public agencies as well as to public e-services according to Lindgren and Jansson. However, it may not be obvious to PSP users that the same e-services are offered by public and private players. The introduction of market mechanisms may harm the public sector if private players offer e-services that create certain expectations of public service providers who cannot afford to be as selective as their private counterparts (Henriksen, 2006).

Moreover, we need a critical discussion on the business models of PSPs because they are de facto examples of the digitalization of NPM in choice reform that involves the general public, private, and PPP actors, as well as technologies. This development might be seen as a new form of *co-opetition* (Nalebuff & Brandenburger, 1996) in which the public sector and the private sector collaborate and/or compete. Two relevant questions are as follows. What responsibility do public agencies have when they provide PSPs and high quality support for citizen choice? In fact, will different public agencies compete (Karpik, 2010) with each other, or even with private agencies, in providing PSPs?

Such scenarios are evident in education where local, regional, and national governments, national public actors, and a private company complement the PPP. As per three of our cases, a local government may actively promote its own schools using an advertising agency, a regional actor may manage a neutral and efficient application process, and a commercial actor may actively organize chats that increase traffic

Table 3
Analysis of the PSP business models.

	PSP business model core components			
Areas and cases	Value Proposition	Value Architecture	Value Network	Value Finance
Education: 1. The Gothenburg Region	Provides information about schools in the region and enables making choices. The main benefit is that it makes the application process easier and cheaper.	Connects data about schools from internal sources.	A regional public agency presents the upper secondary schools in the region.	The schools pay a fee for each application.
Education: 2. Swedish Association of Local Authorities and Regions (SALAR), Swedish national associations for free enterprise and independent schools	Provides information about schools and enables comparisons. The main benefit is that the PSP promotes quality and choice by the publication of data.	Connects data about schools from an external company or public agencies.	A PPP provides the support related to the upper secondary schools in the country.	The PPP finances the PSP as a project.
Education: 3. Swedish National Agency for Education	Provides information about schools and enables comparisons. The main benefit is the provision of information for informed choice.	Connects data about schools from internal sources.	A national public agency provides the support related to the upper secondary schools in the country.	Financed by the agency with permanent and temporary grants.
Education: 4. Municipality of Gothenburg	Provides specific information about the municipality's upper secondary schools. The main benefit is the promotion of the municipality's schools.	Connects data about schools from internal sources with the help of an advertising agency.	A local government provides the support that presents the upper secondary schools under its control.	Financed by the municipality.
Education: 5.Municipality of Gothenburg	Provides information about the upper secondary schools. The main benefit is the offer of cost-effective support.	Connects data about schools from internal sources.	A local government provides the support on the municipality's upper secondary schools.	Financed by the municipality.
Education: 6. Swedish national association for free enterprise	Provides information and enables comparison of upper secondary schools, including future wage levels. The main benefit is the promotion of informed choice.	Connects data about schools purchased from an external company or public agencies.	An organization provides the support related to upper secondary schools in the country.	Financed by the organization as a project.
Education: 7. The Metro Corporation	Provides information about the upper secondary schools, including future wage levels. Enables Web 2.0 interactions in the form of questions/chats. The benefit is the provision of information to many groups.	Connects data about schools from external public sources and allows users to contribute.	A private company operates the website that presents many types of education possibilities, including information on the upper secondary schools.	Financed by the company through commercial publishing.
Healthcare: 8. SALAR	Provides information about primary care centres, enabling comparisons. Also enables interactive interactions in making choices and the provision of accessible information at low cost.	Connects data about primary care centres from internal sources.	A regional authority operates the website that presents primary care centres in all regions.	The Centre for E-health owns the website that is financed by SALAR.
Healthcare: 9. Swedish national association for free enterprise	Provides information about primary care centres, enabling comparisons, and Web 2.0 interactions in which users submit evaluations. The main benefit is the promotion of choice, competition, and improved quality.	Connects a technical platform from an external company with data about primary care centres from public agencies. Allows users to contribute.	A private company operates the website that presents primary care centres in the country and by hospital.	Operated by a company, but partially financed by the association.
Healthcare: 10. County Council of Halland	Provides information and enables comparison of primary care centres. The benefit is the provision of up-to-date information for users who want to change their primary care centre.	Connects a technical platform from an external company with internal data about primary care centres.	A regional authority operates the website that presents the primary care centres in the region.	Financed by the County Council.
Elder care: 11. National Board of Health and Welfare	Provides information about elder care and enables comparisons. The main benefit is the provision of information about services, enabling users to make comparisons and to learn their rights as patients.	Connects data about elder care from internal sources.	A national public agency operates the website that presents the elder care (home help) available in the country.	Financed by The National Board of Health and Welfare.
Elder care: 12. Municipality of Stockholm	Provides information about elder care and enables comparisons. The main benefit is that it offers assistance to users in making choices and comparisons.	Connects data about elder care from internal sources.	A local agency operates the website that presents elder care in the municipality.	Financed by the local administration for elder care.
Public pensions: 13. Swedish Pensions Agency	Provides information about public pension savings, enabling comparisons. Enables interactive interactions for making choices. The benefit is the offer of cost effective information about funds, future pension distributions, and decision support related to public pensions.	Connects data about public pension savings from internal and external private sources.	A national public authority operates the website that lists the premium pension funds.	Financed by fees from users with assets in premium pension funds.
Public pensions: 14. Minpension.se	Provides information about savings and future benefits. The main benefits are the presentation of public and private pension portfolios, and user instruction in how choices affect future pension's distributions.	Connects a technical platform from a contracted company with data about public and private pension portfolios.	A PPP operates the website that presents pension benefits including private savings.	Financed by the national government and banks.

as well as provoke interest in commercially-operated newspapers. All these actions are part of the annual application process for upper secondary schools. Alternatively, you might ask, "What is the limit to the cooperation of public agencies in PPPs given their quasi status as 'public'?" We found two such cases or instances with different business models (nos. 2 and 14).

It is our hope our research will result in more thoughtful policymaking and critical discussion on PSPs and their business models. To that end, our study has broadened the dominant user perspective in previous research on citizen choice (cf. Gomez et al., 2012; Meinow et al., 2011; Nordgren & Åhgren, 2011) by taking the provider perspective on technologies used by citizens.

6. Conclusions

It is important to remember that, despite the increasing influence of *co-opetition* (Nalebuff & Brandenburger, 1996), it is taxpayers who fund these services in our 14 cases. The examination of the business models of the 14 PSPs helps us answer the following question: What are the underlying business models of PSPs in sectors driven by quasi-markets? By including the supply side involving public and private actors in the marketplace of publicly funded services, this study extends previous research, which primarily focused on citizens and their needs (cf. Coulter, 2010; Damman, 2010; Gomez et al., 2012; Schneider, 2001).

Our paper focuses on the PSP business models from the supplier or owner perspective. The intention is to describe an emerging IT artefact in the public sphere that supports choice, as well as the actors behind it. Our focus on the 14 PSPs and their business models, based on empirical studies of four areas of public services, is thus our main contribution. Our study shows how NPM is applied in public services using digital technology. Sweden has long had a tradition of quasi-market arrangements where the distinction between the private sector and the public sector is somewhat blurred. Furthermore, Sweden is well known as one of the most advanced countries in the world in terms of provision of taxpayer-supported public services. However, in contrast to the "Leading-Edge countries" from the point of view of NPM reform during the last decade (United States, United Kingdom, Canada, Australia, New Zealand and the Netherlands), Sweden has increased the number of areas with voucher systems (healthcare, elder care) as well as further established tradition of choice in other areas (education) (see Table 2). Therefore, we argue that the multiplicity of VPs and VN in PSPs (see Sections 5.1–5.2 above) are in themselves not proof against the claim made by Dunleavy et al. (2006) about the emerging Digital Era-Governance and the decline of NPM reform, but rather a specific case or instance of the former. More specifically, they might be seen as expressions of parts of the key components of Digital-Era Governance, as outlined by these authors in terms of Needs-Based Holism and Digitization Processes. In other words, they might be expressions of the Traditional and Emerging business models with a multitude of design options, tailored to meet citizens' needs as well as with an array of actors willing to provide even more diversified PSPs. An interesting issue for further research is to investigate whether Sweden actually has greater support for quasi-markets and choice reforms or if the gradually more sophisticated provision of PSPs and associated business models have influenced its NPM agenda.

The 14 cases reveal the underlying logic of digital platforms (PSPs) in NPM. The Traditional view includes public agencies that use PSPs as part of their normal responsibility for providing neutral information about alternatives and for facilitating simple comparisons and choices. Our empirical analysis of 14 cases reveals the underlying logic of PSPs in NPM and challenges the Traditional view. Our results suggest an "Emerging view" of business models in the PSPs that is more multifaceted than the "Traditional view". For example, the Emerging view includes dialogues, user evaluations, long-term perspectives on choice, private organizations, as well as support for the ideal of choice. This view even includes self-promotion by public agencies.

Thus, the actors — and their intentions as expressed in the business models behind the PSPs — are important in general for their role as market regulators and designers (Kastberg, 2008) and specifically for their ability to influence citizens in choice reform. Our findings have implications for public policy concerning the responsibility of public versus private actors, the role of public agencies in PPPs, and the competition between PSPs and the actors behind them. In conclusion, despite the increasing criticism of NPM and the influence of private sector managerial and organizational ideas, our study shows the de facto influence of a repertoire of actors who translate NPM into technologies. The "Emerging view" thus represents what we describe as the 'hybrid' PSP with its business model that stimulates interaction with citizens through its service offerings.

These implications arise from our application of business models and their components that support the substitution of ad hoc development (Panagiotopoulos et al., 2012) in the context of choice reform in NPM. However, our application of this theory in our multi-case study on business models and their components, with its broad cast of actors, promotes a critical understanding that challenges the relatively sharp distinction between public e-services and E-business (Lindgren & Jansson, 2013). Last but not least, in this manner we contribute to a proposed programme for research focusing on information technology, public values, and transformative government (Bannister & Connolly, 2014).

We note a limitation of our study. We investigated PSP business models in 14 cases, focusing on four core components of the business model. Our research methodology consisted of interviews and examinations of technologies. To complement this methodology, we recommend longitudinal, in-depth studies of single cases with additional interviews with project leaders and designers. Such research could identify the long-term aspects and goals of PSP business models that are increasingly used in NPM reform.

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Appendix A. Interview questions

Value Proposition
What kind of electronic services are the basis for the PSP?
What are the general and specific motivations behind the PSP?
What aims are the PSP intended to attain?
Who is considered as its most important users and beneficiaries?
Value Architecture
What types of resources are used to provide the PSP from you side? Technology? Other resources?
What resources must be provided by its users?
Value Network
What actors are involved in providing the PSP?
What roles do these actors have? (Providers of the PSP? Being part of the PSP? Using the PSP? etcetera)
Who manages the PSP and how are the important decisions made?
Value Finance
What types of costs are there in providing the PSP?
Who finances the PSP and how is it financed?
Who "owns" the PSP?

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