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Strategic alignment of participant motivations in e-government collaborations: The Internet Payment Platform pilot

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ABSTRACT

Large-scale information technology implementations are risky projects, and the challenges and risks multiply when multiple organizations are involved, as is often the case in e-government initiatives. Some of the risk can be addressed by carefully aligning the partners' motivations, which are affected by each organization's internal and external operational and information technology strategies. In this paper, we propose a strategic alignment framework and use it to examine the motivations of a set of collaborating government agencies and businesses in the pilot implementation of the Internet Payment Platform, an interorganizational, third-party hosted, e-procurement system. As we predict, the partners in this study had varied technical, political, economic, and operational motivations for participating in the project. Even so, the participating agencies reported positive outcomes from the project, and look forward to further collaboration on the next iteration of this e-procurement system.

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1. Introduction

The success or failure of an interorganizational information systems project is influenced by many technical, organizational, and political factors (Dawes, Pardo & Cresswell, 2004). When multiple organizations are involved, collaboration outcomes will depend upon the extent to which the project fulfills the disparate goals of each partner organization. Since participants have many reasons for joining an alliance, it seems likely that some participants' priorities will not be fully reflected in the system specifications. However, each participating organization will attempt to achieve alignment between its operational needs and the interorganizational system (IOS).

Strategic alignment theory (Henderson & Venkatraman, 1993; Luftman, Lewis & Oldach, 1993; Chan & Reich, 2007) holds that effective information technology management achieves a coherent fit (or alignment) between an organization's business strategy and operations and its IT applications and infrastructure. In supply chains, strategic alignment is especially difficult to achieve because participants' technical infrastructures, processes, and strategic priorities are varied (McAdam & Brown, 2001). When a system crosses organizational boundaries, each partner aims to align their internal processes and systems with the interorganizational processes and systems (O'Toole & Montjoy, 1984). A new system may require significant change in organizational processes, and can have "ripple effects" on various stakeholders (Luftman, Lewis & Oldach, 1993; Applegate, Austin & McFarlan, 2006). Thus, strategic alignment is an important consideration for designers of interagency systems (government-to-government, or G2G) and for systems designed to support transactions between agencies and private-sector partners (government-to-business, or G2B).

A necessary precursor to the success of a large-scale e-government project is a thorough analysis of the needs of all affected agencies, organizations and citizen groups. A strategic alignment approach to the expectations of each of these stakeholders would drive the design and use of the IOS and will foreshadow its success. Participants in G2G and G2B systems are motivated to join by various political, operational, technical and economic reasons. In this article we present evidence of how participants' motivations can differ by examining a pilot test of the United States Treasury's Internet Payment Platform (IPP). We conclude that careful attention to these four categories of participant motivations will lead to better acceptance by collaboration partners, reducing the risk of project failure.

The remainder of the article is organized as follows. The next section reviews prior research on strategic alignment and stakeholder motivations in governmental initiatives. We then describe the methodology and findings for the Internet Payment Platform case, discuss the complementarity of stakeholder goals, and finish with a

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discussion of implications for practice and suggestions for further research on strategic alignment within collaborations and IOS.

2. Stakeholder motivations and strategic alignment

Stakeholders' motivations to collaborate in an IOS encompass goals concerning increased benefits or cost reductions for their respective organizations. Perceived benefits and costs can be intangible or tangible and may be realizable in the short or long term. O'Toole and Montjoy (1984) distinguished between the tangible inducement of exchange (i.e., receiving something in return) and the intangible motivations associated with authority and common interest, which are fundamental in the public sector. Transactional, lower-level goals are easier to achieve in the short term, while transformational and strategic goals involving interorganizational structures and operational processes are more difficult and take longer to accomplish (Zhang, Dawes & Sarkis, 2005). An increased level of trust among partner organizations is an example of an intangible benefit that improves subsequent collaboration (McDougall, Rajabifard & Williamson, 2005; Ghosh & Fedorowicz, 2008).

Because interagency IOS intersect multiple external and internal environments (Dawes & Eglene, 2004; Fedorowicz, Gogan, & Williams, 2006), project motivations and goals likewise derive from multiple sources, with inevitable conflict (O'Toole & Montjoy, 1984). For example, Mayer-Schonberger (2003) identified and analyzed three categories of requirements for a first-response radio communications system: technological innovation, common frequencies and standards, and adequate funding. Lin, Hu, Chen and Schroeder (2003) examined system usability and user acceptance based on such criteria as learnability, efficiency, memorability, errors, and satisfaction for the COPLINK system. Other reasons documented for interorganizational information sharing include cutting costs, increasing client satisfaction, improved data availability or quality, enhanced relationships, organizational needs and capabilities, appeals to professionalism and common goals, incentives, and resource scarcity (Weiss, 1987; Drake, Steckler & Koch 2004; Johnson & Pirog, 2003). A categorization of the wide range of goals encountered by interagency collaborations would help their developers better understand and meet stakeholder expectations.

Building on these and other studies of IOS-based collaboration within government settings (Dawes, 1996; Fedorowicz et al., 2006), we propose four categories of motivations for participating in a collaborative system. *Political* motivations include complying with legislative or regulatory requirements; requests from external oversight bodies (Congress and the Administration); norms within its own organizational culture; maintaining key relationships; and responding to crises and other critical events. *Technical* motivations are tied to concerns about system architecture, hardware, software, data management, standards, and sourcing criteria. *Operational* motivations derive from expected improvements in organizational and interorganizational processes, and *economic* motivations include reducing costs or realizing economies of scale. These four domains will be used in our analysis to assess the alignment of stakeholder motivations within an interagency collaboration.

Collaborators are motivated to participate in an initiative based on their expectations of likely value, compared with their strategic and operational goals. Participants' goals also affect their subsequent evaluation of the success (or failure) of the collaboration. Prior research agrees that information systems success derives from the perceptions of all evaluating stakeholders (Seddon, Staples, Patnayakuni & Bowell, 1999). Moreover, measures of IOS performance collectively encompass the business process, technology, information, and human participants (Alter, 1999). Alter distinguishes between internal measures of business process performance (e.g., output rate), external performance as judged by the system's "customers" (e.g., cost or responsiveness), and performance of the technology itself. System effectiveness is thus a multi-faceted concept which differs according to the perceptions held by individual stakeholders. Like Alter, we posit that participants' motivations will have as much – perhaps more – importance *to them* than their beliefs about the goals of the collaboration itself (i.e., its collective benefits). Thus, a complete evaluation of an IOS would take into account its individual users, each participating organization, and the overall collaboration.

Developers and users reportedly have dissimilar motivations because of their different influence and involvement in a project's development and the different perspectives of their home agency (Zhang et al., 2005). Although they may agree on high-level benefits and barriers, developers tend to be more optimistic about achieving common objectives whereas users tend to focus more on their own (or their agency's) concerns about specific issues. Inequalities with respect to power/control and sharing of costs relative to benefits may account for this divergence of expectations. Lynn and Hill (2001) agree that interdependence and associated collective action problems are common phenomena in public service provision, yet the value of collaboration to the individual providers is seldom addressed. Thus the challenge of aligning participant and collaboration goals/motivations remains a critical issue for G2G and G2B project leaders.

Collaborators recognize that if participants' motivations compete with or contradict each other (or with the over-arching goals of the collective enterprise), conflict over these differences may impede progress. Participants who believe at the outset that their goals are in synch with one another may subsequently discover that their expectations are not going to be realized (See Weiss, 1987, for a discussion of the dynamic, unfolding interaction among motivations, behaviors and project success; also Lynn & Hill, 2001; Dawes & Eglene, 2004). Thus, alignment needs to persist over the life of the collaboration.

Developers and users of an interagency IOS must take into account the common, complementary and competing political, technical, operational, and economic motivations of all stakeholders. We utilize a G2B example of e-procurement to illustrate the range of tangible and intangible motivations that can coexist in an interagency effort. We next present the methodology and key findings from the case study. This will be followed by a discussion of the operational and IT alignment issues observed in the IPP initiative.

3. Methodology

The Internet Payment Platform (IPP) is a web-based e-procurement system for U. S. Government (federal) agencies and their suppliers. We gathered data for the case study from spring 2003 through fall 2004 during a pilot test of the IPP involving three federal agencies and several other participating organizations. We examined many project source documents including the *Concept of Operations* (ConOps) document dated June 18, 2002 (Treasury's Financial Management Service requires preparation of a ConOps document as part of its approval process), PowerPoint presentations made by IPP project leaders, internal newsletters, and other documents. Where possible, we conducted semi-structured interviews with multiple key informants at each stakeholder organization. We asked informants to comment on their reasons for joining the collaboration, administrative and technical challenges during the pilot test, and other aspects. We employed a snowball sampling technique in which early interviewees suggested other participants for us to interview. Altogether, we completed 26 interviews with 27 participants, each lasting one half to two hours. While most were individual interviews, a few were group interviews. We conducted some interviews on site, and the others via telephone (see Table 1). We had all interviews taped and professionally transcribed. Consistent with grounded theory (Strauss & Corbin, 1998; Sarker, Lau & Sahay, 2001), we initially analyzed interview data using open-coding for thematic analysis soon after transcription of the recordings. That analysis was partially responsible for the subsequent

Table 1
IPP case study: 26 interviews, 27 informants

Date	Agency	Interview	Interviewee/s
2003 Spring	FMS	1	1 IPP Project Leader
	Boston Fed	2	1 Technical Leader
			1 Fed Pilot Coordinator
			1 Fed Analyst
	Xign	3	1 VP
	Boston Fed	4	2 Fed Pilot Coordinator
2003 Summer	FMS	5	1 FMS Leader
	FMS	6	1 FMS R&D
	BEP	7	1 Finance Leader
			1 Finance Manager
			1 BEP Pilot Coordinator
	BEP	8	1 Manager
			1 Supervisor
			1 Contracting Officer
			1 Analyst
	Small Vendor	9	1 Owner
	Big Vendor	10	1 Manager
	BEP	11	1 CIO
	BEP	12	1 IT Manager
2003 Fall	Boston Fed	13	3 Fed Pilot Coordinator
	BEP	14	2 IT Manager
	Denali	15	1 Analyst
		16	1 Operations Manager
	Labor	17	1 Systems Manager
	Labor	18	1 Finance Manager
	Boston Fed	19	2 Technical Leader
			4 Fed Pilot Coordinator
			2 Fed Analyst
2004 Winter	FMS	20	2 IPP Project Leader
2004 Spring	FMS	21	3 IPP Project Leader
2004 Fall	FMS	22	4 IPP Project Leader
	BEP	23	2 BEP Pilot Coordinator
			1 Accountant
			1 Systems Administrator
	Labor	24	2 Systems Manager
	Denali	25	2 Operations Manager
	Labor	26	1 Finance Director
			1 Supervisor
			1 Accountant

Numbers before interviewee titles indicates the nth interview of each individual. Where two titles are given, two people were interviewed simultaneously.

choices of interviewees. In multiple rounds of thematic analysis, we revised existing themes and included new sub-themes and themes in light of interviews conducted in later rounds.

4. Case context

In recent years, federal agencies have made significant investments in IT applications aimed at reducing costs and improving operational effectiveness while exchanging information across organizational boundaries, functional areas, or jurisdictions. At the federal level, executive directives governing typical purchasing activities have spurred an increased interest in e-procurement and e-payment systems. The Prompt Payment Act of 1982 (amended in 1988) specified that government agencies would incur penalties if they failed to reimburse vendors according to contractual terms (usually within 30 days of receiving a correct invoice). Most agencies needed to invest in new systems to bring their processes into compliance with this Act. The Debt Collection Improvement Act specified that (starting in 1999), all payments, except tax refunds, should be provided electronically, and the Government Paperwork Elimination Act of 1998 encouraged federal agencies to automate operations. President George W. Bush added a further push in "The President's Management Agenda" for his administration, which included "Expanded Electronic Government" as one of five government-wide initiatives. This document stated "The Administration will advance E-Government strategy by supporting projects that offer performance gains across agency boundaries, such as e-procurement, e-grants, e-regulation, and e-signatures" (OMB, 2002, p. 24).

These legislative priorities led the Financial Management Service (FMS) of the United States Department of the Treasury (Treasury) to support a series of Payment Application Modernization efforts. Some initiatives (such as Pay.Gov) were full-production systems while others (such as eCheck and the Internet Payment Platform) were pilot projects to explore emerging technology solutions. The FMS Chief Architect for Electronic Commerce summarized the ultimate goal of these projects: "we're trying to come up with the next generation federal disbursement system."

5. The Internet Payment Platform (IPP)

The IPP pilot was an off-shoot of the earlier eCheck project (Gogan, Gelinas & Rao, 2004; Gogan, 2005), which was an effort by a consortium of companies and governmental bodies to develop a secure, web-based payment mechanism. Following the eCheck pilot tests, FMS collaborated with the Federal Reserve Bank of Boston (hereafter, the Fed), Xign Inc., and Biometrics Associates, Inc. (BAI) to implement the IPP system. During the IPP pilot test participating agencies sent electronic purchase orders via the web-based IPP to suppliers who (after providing the goods or services) converted ("flipped") those POs into invoices (Gogan & Gelinas, 2007). Agencies subsequently approved the invoices and paid vendors electronically. Payees and payers could view data, manage the workflow, verify the identity and authenticity of users and accounts, settle credit ACH transactions, and generate reports. A key design factor was a database that continually received and aggregated data throughout the lifecycle, becoming a hub to the entire transaction exchange. The IPP system translated data to and from agencies' back-end accounting systems into and out of XML, using an "Enterprise Adapter" on servers located at each agency. The Federal Reserve Bank of Boston, acting on behalf of Treasury, managed the payment processing during the pilot test.

FMS recruited three government agencies for the IPP pilot test: the Bureau of Engraving and Printing or BEP (responsible for producing U.S. currency and postage stamps), the Denali Commission (a small federal-state commission charged with providing "critical utilities, infrastructure, and economic support throughout Alaska") and the United States Department of Labor (responsible for administering federal labor laws, such as those related to workers' health and safety, wages, and employment discrimination). Each agency was asked to solicit some suppliers to test various aspects of the system.

The participants – including FMS, the Fed, agencies, and their suppliers – had varying motivations for participating in the IPP pilot, which created both opportunities and challenges in achieving strategic alignment among all of the stakeholders. Tables 2 and 3 summarize the shared and unique expectations of each participant. In the next sections, we expand upon examples of the four categories of motivations (political, technical, operational, economic) as viewed through the perspective of each of the stakeholders.

6. The sponsoring agency's perspective

The pilot sponsor, the U.S. Treasury Financial Management Service (FMS), was heavily invested in the project's success. Consistent with its leadership role, FMS had the broadest vision, and the most numerous and fully delineated set of expectations for IPP.

In addition to the Prompt Payment Act and Government Paperwork Elimination Act, FMS managers also viewed the IPP initiative as aligned with the President's Management Agenda. Also, IPP was to be a much smaller effort than the earlier eCheck project, using less risky technologies, with limited participation by for-profit entities and no standard-setting agenda. These *political* considerations both fostered the IPP project and constrained it.

Table 2
Shared motivations of IPP agency partners

Category	Motivation	FMS	Fed	Denali	LABOR	BEP
Political	Legislative compliance	X	X		X	X
	Presidential agenda	X		X	X	X
	Partner relationships	X		X	X	X
	Cutting edge image		X		X	X
Operational	Accountability/control	X			X	
	Better service	X		X		X
	Data integrity/less error			X	X	X
	Streamline processes	X		X	X	
	New payment process	X	X			
Technical	Paperless process	X		X	X	X
Economic	Transaction costs	X			X	X
	Discounts or fees	X			X	X
	Efficient/labor saving	X		X		X

Some perceived benefits checked in this table are not fully discussed for every participant in this paper because of length considerations, but are supported by the interview data. Documentation is available from the authors.
Sources: study interviews, FMS documents.

To request budgetary approval for any project, an FMS team prepares a Concept of Operations document (ConOps) which specifies project goals, timeline, and roles. The ConOps document of June 18, 2002 stated: "The goal of the (IPP) pilot is to continue where the eCheck pilot left off … (by) accumulating all data involved in the entire life cycle of a transaction in a centralized database." The FMS Commissioner explained: "The idea was to have all the documentation for the agency and the vendor … at their fingertips … available in a database that's easily accessible." Thus, the operational purpose of IPP was to provide a *technical* infrastructure to be shared by agencies and their vendors.

The IPP ConOps document asserted that the pilot aimed to determine whether IPP could help agencies improve their *operational processes* by aiming to "streamline settlement processing, integrate into A/R, A/P and Treasury financial systems, reduce the complexity of enrolling contractors, increase the speed and effectiveness of dispute resolution, strengthen relationships for all parties in a settlement process (also a political motivation), increase accountability and control, shorten cycle times." The FMS Chief Architect for Electronic Commerce also hoped to learn "organizationally and procedurally, how do you roll out a new piece of enterprise software like this, that will touch every agency…?"

The ConOps document also noted that agencies should achieve efficiency gains from using IPP that "save the government $10–$30 per transaction, gain supplier prompt-pay discounts, lower the number of aged invoices, improve cash management, reduce inventory costs, optimize purchases." The system was intended to have a favorable *economic* impact on the government.

7. The intermediary partner

The Federal Reserve Bank of Boston had a coordinating role in the pilot test and held the contract for services with Xign Corporation, which created and hosted the IPP system. The Fed's broad mission is to ensure the efficiency, effectiveness and integrity of the federal payment system. This positions the Fed halfway between speaking for the collaborative enterprise and the agency participants whose payments the Fed settles through its Automated Clearing House (ACH) system. With limited influence over and involvement in the IPP project itself, its focus was on providing a collective benefit. The stated motivations were primarily *political* and *technical*. One interviewee noted that the Boston Fed had worked on emerging payments initiatives since the late nineties, spurred in part by the electronic funds transfer provisions of the Debt Collection Improvement Act. Having worked with Treasury on the eCheck project as well as the successful Stored Value Card program (for military personnel), "it was just a logical step for (FMS) to come back to us … they knew they would not have to preach to us on the benefits of IPP." Another explained that both the Fed and Treasury were primarily "motivated by legislation. You pay in 30 days (per the Prompt Payment Act). If you don't, you get in trouble." He also explicitly stated that economic considerations were less salient: "We don't have all the same motivation sometimes as a private company … because we have no cost of capital … we're not making money off our cash, the way a business would. We don't have the exact same profit motive." And, like FMS, the Fed was interested in building on the technical accomplishments of the eCheck project in a new payment process.

8. Agency partners' motivations and alignment

The three participating agencies ranged in size from very small to very large. The Denali Commission had an office of 19 employees and a budget of less than $20 million. The Bureau of Engraving and Printing had 2400 employees. The largest participant, the U.S. Department of Labor, had more than 17,000 employees in multiple agencies and offices (such as OSHA and the Employment and Training Administration).

If "perfectly" aligned, all participants' goals would be consistent with those listed from FMS's point-of-view, the stated objectives published in the ConOps document. However, agencies' expectations for IPP were fewer in number and generally more specific or limited than those of FMS and the Fed. While participants shared some motivations with FMS's stated objectives, each agency also provided one or more reasons that did not map to those given by FMS. We next

Table 3
Unique goals and needs motivating IPP agency partners

Treasury FMS	
Political	Small effort, low risk technology, involve few for-profits, avoid premature standard-setting
Operational	Settlement processing, systems integration, contractor enrollment, dispute resolution, examine adoption and rollout issues for inter-enterprise software
Technical	Centralized database; investigate new technologies, e.g., XML, biometrics, digital signatures
Economic	Reduce inventory costs, aged invoices, optimize purchases, improve cash management
Boston Fed	
Political	
Operational	Ensure integrity of U.S. payment system
Technical	
Economic	No capital costs
Denali	
Political	Improve public transparency
Operational	
Technical	Hardware replacement
Economic	
Labor	
Political	
Operational	Support analysis and audit trail; financial "consultants"; data integrity; push process
Technical	Biometrics, workflow software
Economic	
BEP	
Political	Reduce supplier complaints to Congress; mollify sole-supplier
Operational	Irradiated mail
Technical	Legacy systems/ERP investment
Economic	Revolving fund flexibility

Some perceived benefits noted in this table are not fully discussed for every participant in this paper because of length considerations, but are supported by the interview data. Documentation is available from the authors.
Sources: study interviews, FMS documents.

briefly examine the four categories of motivations reported by the three participating agencies (BEP, Denali, and Labor).

8.1. Bureau of Engraving and Printing

BEP Managers talked about the *political* motivation of improving government operations in general. One said: "We viewed IPP as an opportunity to … be on the cutting edge." Interviewees mentioned the importance of their relationship with the Financial Management Service, "a sister agency for us … So this is a relationship; it's not somebody who's coming off the street and trying to solicit us."

The *political* motivation of complying with the Prompt Payment Act – noted by finance and procurement managers – was intertwined with an unexpected *operational* process motivation. The anthrax attacks of fall 2001 had led to a decision that all mail directed to federal agencies via the District of Columbia's Brentwood postal facility be irradiated at a facility in Ohio. This re-routing of mail slowed down the transit time and also created new problems. An informant told us: "This irradiation process cooks it. It melts the plastic windows in the envelopes. Some of the paper crumbles… It's funny how circumstances can change your requirements in your day-to-day operations." Procurement personnel echoed these statements. "Sometimes when you get the mail, it crumbles in your hand … and you can't read it properly because the ink dissolves." Another summed up the situation: "It's fried!" These respondents were very enthusiastic about processing transactions in web-based electronic form.

Another unexpected motivation involved the politics of supplier relations. A finance manager explained: "Our suppliers can write a letter to our Congressman and say, 'Where is our payment? Why is the Bureau of Engraving and Printing dragging its feet?' We operate in a delicate environment and we want to keep them happy ... It is somewhat of a reversal from the commercial model of the buyer being in charge of the relationship more than the supplier." A procurement manager noted, "We've had vendors who stop doing business with us." Another added, "Especially small businesses; they have less discretionary money; their money is real tight." A senior manager said: "We're encouraged to deal with small businesses. …. They don't have the cash flow of a General Motors." Nor was the concern limited to small businesses. One manager explained that BEP purchases some essential supplies that are unique and can only be procured from a single source. "So keeping our suppliers happy is a big concern." The public sector setting put *political* pressure on the *operational* process.

Other than a general desire to "be on the cutting edge," most interviewees at BEP did not express *technical* goals for their participation in the IPP pilot. The CIO did note a goal of "finding a system that we could integrate with our legacy system," and added another political motivation: "My procurement function had come to me on several occasions and said 'Help me, help me,' so obviously I was anxious for anything that I could do … (yet) without changing our core accounting system…." The CIO was enthusiastic about the IPP design, which utilized XML code to translate data from the existing system for use in IPP. "This is one of the rare instances where we accept transactions from outside of the modules that are in our system. This was a breakthrough event for me…we could… preserve our investment without having to … do something radical."

BEP finance managers expressed enthusiasm for *operational* and *economic* benefits they expected IPP would bring, including capturing early-payment discounts and avoiding late-payment penalties, saving manpower and time, and improving data quality. Quality concerns fell into two categories: BEP managers looked forward to fewer data-entry errors (since one IPP entry created both a purchase order and an invoice), and also errors made by vendors: "they often submit improper invoices," explained one manager, adding "The Prompt Payment Act clock does not start until Finance receives a proper invoice." Another said: "There might be discrepancies in terms of the P.O. number, amount shipped, amount billed, shipping cost, etc. … With IPP, you're pretty much assured you're going to get a proper invoice, because the system will flip the purchase order to the invoice." A procurement manager added a key expected operational benefit: "fewer calls back to me – calls such as, 'why hasn't my invoice been paid?'"

Finally, the CFO at BEP explained why BEP was able to participate in the IPP pilot, while some other agencies could not: "BEP has a revolving fund, with so-called No-Year money. We can fully fund multi-year initiatives and we can change our spending plans. Unlike most federal agencies, we don't depend on (yearly) appropriations from Congress for our funding."

8.2. Denali Commission

Denali interviewees never explicitly stated an expectation that IPP participation would translate into monetary savings. The Deputy Director of Operations expressed a *political* motivation: "We want to participate, to the extent we can, in the President's Management Agenda and E-Government initiatives, and we see IPP as a great part of that." She also believed that "IPP will positively impact our relationship with vendors… The ability for them to look on a website to check the status of their payment … We are trying to be a transparent organization to the public that we serve. We think this is going to contribute to that." In addition, she saw an *operational* benefit in the potential to reduce data-entry errors as a result of keying in transaction information just once. We note editorially that error reduction was not an explicit goal as stated in the ConOps document, and that a variety of systems other than IPP could provide this enter-once functionality.

A Denali Commission financial analyst offered a personal *technical* motivation, in colorful language: "What do I hope to get out of the IPP pilot? Number one: getting rid of this old computer (referring to a desktop machine circa 1998 that, prior to IPP, was used to authorize payments) … I asked [when we change to IPP], can I just take this and throw it out the window, off the fourth floor here!" The replacement of obsolete hardware was not what the designers of the IPP pilot had in mind, but clearly it was uppermost in this informant's mind – suggesting that specific nuances of the system design were less salient to her than the opportunity to upgrade to a current-technology desktop computer. This is a clear example of an end user motivation that is not reflected in organizational level motivations. She did express some *operational* goals at that level as well, however: "Number two, we think IPP will be more efficient and quicker for the vendor … Number three, this will save time for me."

8.3. Department of Labor

A senior finance manager echoed the operations manager at Denali in describing his *political* motivation: "The whole Department is in full support of the President's Management Agenda... it seems like making government work better is just something that we all should do." He added: "we are always looking for better ways to do things … we try to be on the forefront of anything that might improve how we do business." Another political motivation, expressed by another finance manager, speaks to issues of power and influence: "We have a great opportunity here to establish a relationship with Treasury … a huge agency that has an impact on everyone. They set the standard, and if Labor can be one of the first players … in some of these pilot programs, we can help shape and mold what those solutions are going to look like."

From a *technical* perspective, the Labor interviewees expressed enthusiasm about having an opportunity to test two aspects of the system: biometric-based identification and workflow software. Neither of these features were core aspects of IPP; indeed, biometrics were not introduced until late in the pilot, and Labor was the only agency to test the workflow feature. Yet, according to this informant,

Table 4
Agency rankings of IPP benefits January 2004

Benefit	Participating agencies				Non-participating agencies							
	FMS	BEP	Denali	Labor	A	B	C	D	E	F	G	H
Centralize data	1	3	2	6	4	3	4	2	2	1	4	1
Streamline back-end processing	2	4	1	1	2	2	5	4	4	2	2	2
Get vendor discounts	3	2	4	2	3	5	6	1	1	3	3	3
Reduce vendor calls about payment	4	1	3	5	1	1	3	3	3	4	1	4
Negotiate better contract terms	5	5	5	4	5	4	2	5	5	5	5	n/a
Other (see Benefit notes, below				3a	1b		1c					

Rankings from Table 3 may be interpreted as follows:
1 or 2: High Ranking, an "important" benefit.
3: neither important nor less important.
4 or 5: less important benefit.
Write-in Benefits mentioned by survey respondents:
a) paperless processing.
b) avoid cancellation & disconnection notices.
c) improve cash flow.
Source: FMS Survey.

"It would be tough to really see the success of this project without that workflow component…"

From an *operational* perspective, Labor had high hopes. A manager stated: "I thought this would be a great opportunity to streamline business functionality … and reduce the time it takes to pay our vendors." Another informant offered a similar comment and added a motivation that goes beyond the scope of the ConOps document: "What we've been trying to do here over the last couple of years in the CFO's office is basically to change the way financial management personnel work in the Department, from day to day transaction processing type activity to more of an analytical review process and decision support. We've tried to make our accountants throughout more into a financial consultant role." The second informant added that he hoped the IPP data would allow finance personnel to take a closer look at business processes and "show what's possible, (such as) … how far out can we take prompt pay? …We'll get a good feel for what we can handle … and all that data should be there."

Labor finance professionals believed the IPP database would provide a useful audit trail for improved *operational* control. One explained: "I'm responsible for financial integrity across this department. So, it's very important to me, from not only an efficiency viewpoint but an internal control viewpoint, that every step of the process I have a record, an audit trail of who is authorized to approve different documents and who actually approved them and when and where the documents are in the flow." From an *economic* perspective, both Labor informants expressed great enthusiasm for the cost savings they expected to achieve, especially in terms of capturing early-payment discounts and avoiding late-payment penalties (per the Prompt Payment Act). The second interviewee stated: "It should be amazing the numbers that we can come up with. That's one thing that's driving me; I'm really excited about the true cost savings that we can show."

9. Non-participating agencies

FMS faced challenges recruiting agencies for this pilot test. The project director and his staff expended much more effort on recruitment than anticipated. Some agencies opted to hold back, feeling they might join a later pilot test of the IPP project or wait until FMS was ready to roll out an enterprise-wide solution. Among the *political* and *operational* reasons offered for holding back, one very large federal agency stated that they were not interested in committing resources to a limited-scope pilot test. "Call us when you are ready to do something large-scale," was their comment. Several others noted that while interested, they were constrained by the federal budgeting cycle (an *economic* reason). "We are already committed for the remainder of this fiscal year, as well as for the next one, but we could look into it and consider adding it to our priorities for 2004," one stated. The lack of resources for new projects seemed to be a major obstacle when compared with other priorities, such as new work related to the war in Iraq. Other agencies were not so concerned with budgetary issues, yet were busy with other IT projects, including large-scale enterprise systems deployments (*operational* and *technical* motivations). "We just don't have the resources to manage yet another risky IT project," was one agency's response. The FMS Chief Architect for Electronic Commerce commented that it might be necessary for suppliers to lobby the agencies for a new federal disbursement system such as IPP in order to obtain more commitment. In sum, (and as noted also by Zhang et al., 2005), the concern and focus on agency-specific issues is even more apparent in the feedback from non-participating agencies than it was in the comments from those who did come on board.

10. Post-pilot assessment

The FMS project director canvassed both participating and non-participating agencies after the conclusion of the pilot to obtain feedback about IPP. Table 4 contains a subset of the IPP evaluation data collected by FMS. The five expected benefits FMS selected for ranking are: *centralize all data in one location*, *streamline back-end processing*,

Table 5
Comparison of rankings of participant/non-participant agencies with sponsoring agency

Highest benefits as seen by FMS	Participants ranking this as high benefit (n=3)	Participants ranking this as medium benefit (n=3)	Participants ranking this as low benefit (n=3)	Non-participants ranking this as high benefit (n=8)	Non-participants ranking this as medium benefit (n=8)	Non-participants ranking this as low benefit (n=8)
Centralize data (high ranking)	1 agency	1 agency	1 agency	**4 agencies**	1 agency	3 agencies
Streamline back-end processing (high ranking)	2 agencies	0	1 agency	**5 agencies**	0	3 agencies
Get vendor discounts (medium ranking)	0	2 agencies	1 agency	2 agencies	**4 agencies**	2 agencies
Reduce vendor calls (low ranking)	1 agency	1 agency	1 agency	3 agencies	3 agencies	2 agencies
Negotiate better contract terms (low ranking)	0	0	**3 agencies**	1 agency	0	**6 agencies**

High ranking=1 or 2.
Neither high nor low ranking=3.
Low ranking=4 or 5.
High concordance (alignment) with FMS rankings denoted in **bold**.
Source: FMS Survey.

increase early-payment discounts, *reduce vendor calls about payment*, and *negotiate better contract terms*. Agency representatives were asked to assign a value from 1 (most important) to 5 (least important) to each benefit. Table 5 compares participating agencies' (BEP, Denali, Labor) and non-participating agencies' (agencies A through H) rankings with those of FMS, the project sponsor.

The data presented in Table 4 show that agencies' rankings for each benefit do not closely match those of FMS or of each other. At the end of the pilot test FMS ranked *centralize all data in one location* as the number one benefit of using IPP. Of the participating agencies, only the Denali Commission viewed this as an important benefit (ranking it second). Half of the non-participant agencies ranked this benefit 1 or 2. Rankings of the next three benefits (*streamline back-end processing*, *get vendor discounts*, *reduce vendor calls*) were quite dispersed, suggesting that alignment was weak or absent for most of the IPP benefits that FMS selected for evaluation. However, all three participating agencies and six non-participants agreed with FMS that *negotiate better contract terms* was a less important benefit (ranking 4 or 5), indicating strong alignment on this dimension. Perhaps this consensus reflects a view that federal government agencies have little latitude in negotiating contracts. Or, perhaps agency managers see their mission more in terms of providing customer service than in generating cost savings for taxpayers.

Table 5 presents the same data in a different form, showing how many participating and non-participating agencies assigned high, medium or low rankings for each benefit. For FMS's highest-ranked benefit (*centralize data*) four of the eight non-participating agencies who were surveyed agreed with FMS. For the next-ranked benefit (*streamline back-end processing*), five non-participants agreed. Four non-participants agreed with FMS on a medium ranking for *vendor discounts* and six non-participants shared the low ranking for *negotiate better contract terms*. These findings suggest that these agencies probably chose not to participate for reasons that were not linked to the goals set forth by FMS.

Because these data reflect only a small convenience sample from a survey conducted by FMS, not us, we do not attempt more sophisticated analysis of the data.

11. Discussion

As we concluded from our interviews, participants' perceptions of project benefits did not align with those of the collective (as identified by its sponsoring agency, Treasury's FMS). Tables 2 and 3 summarize the differences in motivations between FMS and other participants as gleaned from our interview data and examination of the *ConOps* and other documents from before and during the IPP pilot test. Tables 4 and 5 summarize the data gathered by FMS at the conclusion of the pilot test. These data show that even when considering the same set of goals, their relative importance differed dramatically among the participating agencies. This reinforces our earlier conclusion that a lack of strategic alignment at this level of benefit was not problematic for participating IPP agencies. It appears that, even though participants' goals were not tightly aligned with FMS goals, they were complementary. Where their rankings differ from FMS, they center around more specific benefits at the agency level.

Although strategic alignment typically refers to a single organization's IT investments, it is also applicable to multi-organizational IT projects. Based on interviews and IPP project documents, we note many similarities in the motivations of the involved partners across three of the four categories (Table 2). The category with the largest number of shared motivations across participant groups (FMS, Fed, and user agencies) is political, followed by operational and then economic. Participating agencies mentioned only one specific shared technical motivation (paperless process).

Strategic alignment is particularly challenging when there are multiple partners. Rod and Paliwoda (2003) report that collaborative ventures in government have a failure rate between 50% and 70%. They found that the factors that most influence success are shared or non-mutually exclusive objectives, risk sharing, organizational culture, cohesion and consensus. All partners must share the same overall strategic vision, and know that each participant's goals can be managed and their objectives pursued without compromising the overall shared vision.

Goal clarity reportedly increases the likelihood of successful collaboration and also has a positive impact on motivation (Meyers, Riccucci & Lurie, 2001). A satisfactory degree of goal clarity appears to have been achieved in the IPP initiative for three reasons: there is consensus on which external political and regulatory mandates apply; the goals articulated within these mandates are consistent with each other; and the operational goals and priorities of the agencies charged with delivery are in agreement with these official or formal policy goals. Also, the desire to be seen as on the "cutting edge" was a motivation expressed by nearly all of the IPP participants.

By focusing on the political, technical, operational, and economic motivations within each agency, we also observe that there were many distinctive reasons that particular organizations elected to participate. Although there is always the chance that unique factors will lead to mutually exclusive system requirements (and therefore to the high failure rates seen by Rod & Paliwoda), in the case of IPP, we found the differences to be compatible across the partners. Most of the unique requirements are concentrated in the operational and technical areas (Refer to Table 2). Operationally, FMS had the longest list of goals, which focused at the level of the collaborative enterprise and collective outcomes rather than on those specific to their own organization and functions. The Fed is closer to FMS in taking that perspective, which may be explained by the Fed's unique position and role. Labor's interests are more transformational while the other two agencies seem to focus on their individual problems and organizational needs. This may be a reflection of Labor's organizational culture or possibly the biases of the particular individuals we interviewed. Interpreting the agencies' rankings of the importance of various benefits and debriefing sessions, the IPP project manager stated that each agency had different 'pain factors' and hence focused on different benefits. In the end, while each participant valued different aspects of IPP relative to its particular goals, all seemed amenable to the resulting collective system.

12. The special case of a pilot

Because some technologies required for a new interorganizational system may be unproven, and because the potential impacts on operational processes and working relationships can be profound, pilot tests of proposed G2B or G2G applications are often conducted prior to large-scale implementation (Ni & Ho, 2005). Research by Johnson, Zorn, Tam, LaMontagne and Johnson (2003) indicates that interagency collaborations are multidimensional, interactional, and developmental. A pilot test is expressly designed to take advantage of the latter quality.

The IPP project manager reported that it took longer than expected to recruit agencies to participate in the pilot test. Some agencies hesitated because they viewed a pilot test as too small and limited. Participating agencies were willing to overlook various technical and operational problems, as well as potential goal misalignment issues, as they knew that the pilot would end and they could revert to prior systems and processes. For these participants, what might be a show-stopper in a fully implemented system could be viewed as a temporary inconvenience requiring a work-around, or taken as a learning experience that could be addressed in the next round of experimentation. And, since they were involving only a subset of their own suppliers, each agency could retain tighter control over their important supplier relationships than would be true in a full-scale rollout. Thus, the IPP pilot test helped to reduce the risks that typically accompany

large-scale interorganizational information systems projects. Participants were able to try the system and gauge its fit with their own business processes without exposure to the higher political, technical, operational and economic risks that a full implementation would entail. Also, participating agencies were able to pick and choose which of the collective set of objectives to focus on in the pilot test.

The IPP pilot, originally slated to end in December 2003, was extended through June 2004 to provide an opportunity to fully test the IPP with agencies that did not become fully operational in the pilot until fall 2003. After reviewing the IPP pilot test results, FMS contracted with the software vendor (Xign) to implement an enhanced version of IPP for yet another pilot test, which got underway in 2007.

13. Conclusion

The U.S. Treasury's IPP pilot project was a complex collaboration of large and small federal agencies plus large and small vendors. Success required acceptance by multiple partners with different needs: Treasury/FMS, agencies, vendors, the Boston Fed, and two software partners. Although there were technical challenges, other strategic alignment dimensions figured more prominently in participants' concerns.

When participation in a multi-stakeholder IT project is voluntary (as is usually the case in technology pilot tests), recruitment challenges can constrain decisions about system design and use. In an effort to attract or retain participants, project sponsors may overpromise, agree to incorporate non-essential functionality, or create expectations that they later cannot meet. Government agencies planning to initiate an interorganizational system are urged to pay careful attention to stakeholders' motivations for participating, and to understand the measures against which each stakeholder will evaluate the success of the endeavor. A strategic alignment analysis that assesses political, organizational, technical, and financial considerations should be undertaken early in an e-government project (Gil-Garcia & Pardo, 2005). This analysis can help establish a comprehensive set of specifications, help leaders identify appropriate project management mechanisms, set realistic expectations, and establish outcome metrics for gauging project success according to each participant's needs.

IPP participants' motivations varied, yet were complementary. This case study suggests that it may be more important for e-government project participants' motivations to be complementary than that they be tightly aligned with the sponsor's goals. Or, perhaps as long as strategic motivations are aligned, an interorganizational collaboration can withstand variations in participants' operational (or tactical) motivations. These observations merit further study in research on e-government initiatives. For example, strategic alignment issues in pilot tests may be quite different from alignment issues in wide-scale system implementations. Further research is needed on this issue, as well as to address the links between participants' motivations at the outset and the outcome metrics they use (or don't use) to gauge the success or failure of an interorganizational system. The participants in the IPP project were content to make do with rough, subjective outcome measures for this pilot test. Further study is required to determine whether tighter alignment between motivations and outcome metrics is beneficial and to closely examine the pitfalls that organizations encounter in their attempts to measure system and process performance according to their a priori motivations. It stands to reason that unexpected benefits and problems may prove to be equally or even more meaningful to participants than anticipated benefits and challenges, perhaps in a pilot environment.

The present study extends strategic alignment theory, which was based on individual businesses' alignment issues, to interorganizational G2B and G2G initiatives. Another area worthy of further study would be strategic alignment issues when e-government systems and processes cross national boundaries. The increased complexity of political and cross-cultural challenges when governments collaborate adds yet another set of risks.

Clearly e-government initiatives crossing organizational and jurisdictional boundaries are on the rise, and the pace of change is quickening. Sponsors of G2G and G2B systems and processes will need to establish new governance and communication mechanisms and project management tools to address the varied political, technical, operational, and economic motivations of the participants.

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