PROACTIVE PARTNERSHIPS

CREATING SUPPLY CHAIN VALUE IN THE DIGITAL ERA

SPONSORED BY

Randy V. Bradley, Ph.D.
Assistant Professor of Information Systems and
Supply Chain Management

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FOREWORD

As a leading cloud-based B2B integration B2Bi provider, DiCentral plays an integral role in helping organizations automate supply chain collaboration, and we are delighted to have partnered with SAP in this jointly funded research study to understand the economic value drivers in automating select supply chain activities. This study focuses on organizations that employ SAP Enterprise Resource Planning (ERP) Systems (including SAP ECC, SAP R3, SAP Business All-In-One, SAP Business By-Design and SAP Business One) integrated with DiCentral's B2B Integration Managed Services. We believed that users of these services and solutions would be in a position to articulate the economic drivers and challenges associated with implementing and operating supply chain automation, and we are greatly appreciative of the nearly 80 individuals who volunteered to share their feedback with the University of Tennessee.

The study participants spanned numerous industries, including retail, healthcare, wholesale distribution, process manufacturing, discrete manufacturing, and consumer product goods. 75% of the participants use SAP Business One as their ERP system.

SAP and DiCentral would like to thank The University of Tennessee and Dr. Randy V. Bradley for leading this research study and summarizing the findings.

Our hope is that the reader of this study will utilize the information to optimize investment decisions, improve integration and collaborative supply chain planning activities, improve customer service levels, and enhance corporate agility.

DiCentral Corporation and SAP are pleased to present ***Proactive Partnerships: Creating Supply Chain Value in the Digital Era*** by Dr. Randy V. Bradley, Assistant Professor of Information Systems and Supply Chain Management at the Haslam College of Business at The University of Tennessee.

EXECUTIVE SUMMARY

Organizations are adopting B2B integration (B2Bi) to embrace or defend against digital disruption. Electronic linkages with customers and suppliers are on the rise, and the findings of this study suggest we will continue to see sustained annual double-digit growth. Not a single participant in this study indicated experiencing or expecting a reduction in electronic linkages with customers or suppliers in the near future.

Study participants showed an overwhelming emphasis in integrating customer-facing supply chain solutions, suggesting a likely disproportionate investment in revenue generating activity over solutions that focus on cost cutting. The investment in customer-facing solutions provided participants with significant improvements in scaling business processes without the need for incremental headcount, and the ability to more easily manage compliance programs that come with excessive charge backs for non-performance. 80% of the participants indicated they were subject to compliance programs that could result in charge backs, and nearly 75% have been subject to a fine. 3% indicated that they were subject to fines in excess of $100,000 over the past 12 months. Although participants were subjected to supply chain compliance programs, 70% of the respondent organizations have not reciprocated nor demanded the same of their suppliers.

All of the participants in this study are invested in both an SAP ERP system and DiCentral's B2B Integration Services. The top three reasons given for adopting these respective platforms were as follows:

Top Reasons for Adopting SAP ERP

1. The need to improve and streamline business processes;
2. The need for improved reporting; and,
3. The need to enhance accuracy and consistency of data.

Top Reasons for Adopting DiCentral B2B Integration

1. Compliance with customer B2B Integration requirements;
2. Leveraging data feeds associated with the installation of a new ERP system; and,
3. The need to improve supply chain process efficiencies.

Participants cited two challenges in sustaining their supply chain collaboration initiatives:

- A lack of commitment to invest in additional staff to support additional volumes of integration; and,
- The absence of a clear executive champion to drive inter- and intra-organizational change.

Participants who outsourced their B2B integration to DiCentral cited several additional business benefits, which we will cover in more detail in the study.

INTRODUCTION

WHAT IS B2B INTEGRATION (B2BI)?

There have been several studies that promote the benefits of Supply Chain Collaboration between customers and suppliers citing a clear competitive advantage on both costs and revenues for organizations that do this well.

One element of supply chain collaboration is the physical integration of disparate systems amongst ecosystem members to exchange information in a timely and qualitative manner, commonly referred to as B2B integration. This physical integration includes the architecture, data flows, communications interfaces, security apparatus to protect the information, the frequency and diversity of the information that is shared amongst ecosystem members, the ability to control the sequencing of events, the ability to track the data and link the interdependencies of data flows, and the ability to ensure data compliance.

In this study, we will focus on this physical integration as it relates to organizations connecting to other organizations. We will refer to it as the ecosystem. The physical integration of the disparate systems inside these organizations is what allows ecosystem members to automate data flows, which, in turn, can optimize inter-organizational processes.

It is important to note that integration doesn't just happen. Thus, it is vital for organizations to adequately identify their business (not simply technology) goals and desired B2Bi capabilities to ensure that investments in IT resources, needed to enable the ecosystem, are best suited to meet those goals.

This study provides a view of this perspective from the vantage point of small and midsize businesses (SMBs). It is important to present this perspective given the prevailing view that the world is flat (at least in the context of global trade), in this era of connectedness. The connected era has brought about an interrelationship dynamic between large businesses and SMBs that is virtually symbiotic. The electronic linkages (ELs), enabled by B2B integrations, are necessary for these symbiotic relationships to thrive in both domestic supply chains and global supply networks. ELs help to ensure large enterprises and SMBs can more efficiently and effectively execute procurement and fulfillment processes. The real-time information exchange, when done correctly and with accurate information, enhances relationships between business partners.

According to participants in this study, the facilitation of easier and more automated transactions and fewer errors not only results in more satisfied customers, it results in an increase in new customers due to the organizations' ability to handle customer growth more efficiently. ELs minimize a major source of supply chain inefficiency – the bullwhip effect – by reducing the inventory–demand variance ratio. The symbiotic partnerships, enabled by ELs, are successful because they help both parties solve problems vital to their existence in the marketplace.

> "MOST OF THE BAD DATA IS THE RESULT OF UPSTREAM ISSUES CAUSED BY A LACK OF COMMUNICATION, COORDINATION, AND COLLABORATION BETWEEN BUYERS AND SELLERS."

APPROACHES TO DEVELOPING B2BI CAPABILITIES

Based on the organizations that participated in the study, we noticed some stark differences with respect to their level of B2Bi activity. In light of the data collected and conversations with study participants, we categorized the participants into one of three B2Bi adoption levels. The three adoption levels are (1) ***Idlers***, (2) ***Trailers***, and (3) ***Leaders***.

IDLERS

Idlers tend to have more of a compliance mindset. Their approach to B2Bi is driven primarily, if not solely, by customer demands. As one study participant indicated, "we're only doing what our customers require us to do". Such organizations are not necessarily seeking to grow their ELs with customers, but they are open to additional customer requirements. In essence, they do not have the wherewithal to see ELs as a potential source of competitive advantage. Rather, they just see it as the cost of doing business, and, in many instances, we find that "trading partners are more prepared to do B2Bi than we are". Approximately one third of the study participants indicated that their organization was less prepared to do B2Bi than their trading partners. Organizations that fall into this category cite the unwillingness of their organization to invest in the additional staff needed to support increased volumes of integration as their primary B2Bi challenge.

TRAILERS

Trailers differ from Idlers in that Trailers, who make up nearly 45% of our study participants, indicate that they are equally invested and committed to making B2Bi happen as their trading partners. Trailers can overcome their staffing shortage to grow their ELs by leveraging their B2Bi capabilities to free up resources to grow the business without adding additional human capital. As one respondent indicated, "we're able do more, in terms of handling business and electronic linkages growth, with the same [i.e. no additional increase in headcount]". Despite their "can-do" attitude and willingness to attempt to forge ahead in growing their ELs with partner organizations, Trailers share, to some degree, the same issue as Idlers, citing the unwillingness of their organization to invest in the additional staff needed to support increased volumes of integration as their primary B2Bi challenge.

LEADERS

Leaders view their B2Bi capabilities as their competitive advantage and winning edge when it comes to their trading partners. These organizations, which represent the smallest segment of our study participants (i.e. about 20%), push the envelope with respect to B2Bi capabilities, and do not wait for their trading partners to mandate such capabilities. In fact, Leaders are representative of organizations that believe they are more prepared than their trading partners to do B2Bi. Hence, it should come as no surprise that organizations in this group cite "trading partners' lack of motivation to integrate electronically" as their primary B2Bi challenge.

Leaders take a proactive approach to grow and attract additional ELs and have a high density in the percentage of customer-facing integration. Yet, they share common traits with Idlers and Trailers when it comes to the level of integration with suppliers in that less than 10% of the organizations in each category integrate only with suppliers. Additionally, Leaders are more similar to Trailers in terms of their total integration base as they have approximately a 60/40 split in their integration with customers and suppliers, respectively. This data, combined with in-depth interviews, led us to believe that Leaders prioritized their IT investments towards revenue growth as opposed to cost containment or cost reduction. Despite the varying approaches to the development of B2Bi capabilities by organizations in this study, as outlined below, there are some common business process "disruptors" they all face.

> "60% OF PARTICIPANTS REPORT THAT B2BI VIA SAP ENABLED THEM TO IMPROVE CUSTOMER SERVICE LEVELS. WHAT IS EVEN MORE IMPRESSIVE IS THOSE ORGANIZATIONS WERE ABLE TO ACHIEVE SUBSTANTIAL IMPROVEMENT IN CUSTOMER SERVICE LEVELS DESPITE AVERAGE YEAR OVER YEAR BUSINESS GROWTH OF 10%."

TOP 5 REASONS SMALL TO MEDIUM SIZED BUSINESSES ADOPT SAP

Nearly 75% of the study participants report using SAP Business One. The top five reasons for study participants' selection of SAP as their enterprise resource planning (ERP) system, as illustrated in Exhibit 1, are the need/desire to:

1. Improve and streamline business processes;
2. Improve reporting capabilities;
3. Enhance accuracy and consistency of data;
4. Improve customer service levels; and
5. Achieve higher integration with other business applications.

It is worth noting that one other reason for adopting SAP, namely the need to support business growth strategy without adding complexity to the existing IT infrastructure, was virtually even with the need for higher integration with other business applications. In fact, although the former reason for adoption did not appear in the top three as often as the latter reason, the need to support business growth strategy without adding complexity to the existing IT had the second highest percentage of being the top reason for adopting SAP as compared to the other reasons given.

Another interesting finding worth mentioning is that the least applicable reason given for the adoption of SAP is the need to support digital growth. This finding begs the question of whether SMBs see their ERP as a key contributor to the execution of their digital strategy.

EXHIBIT 1:
REASONS FOR SAP ADOPTION

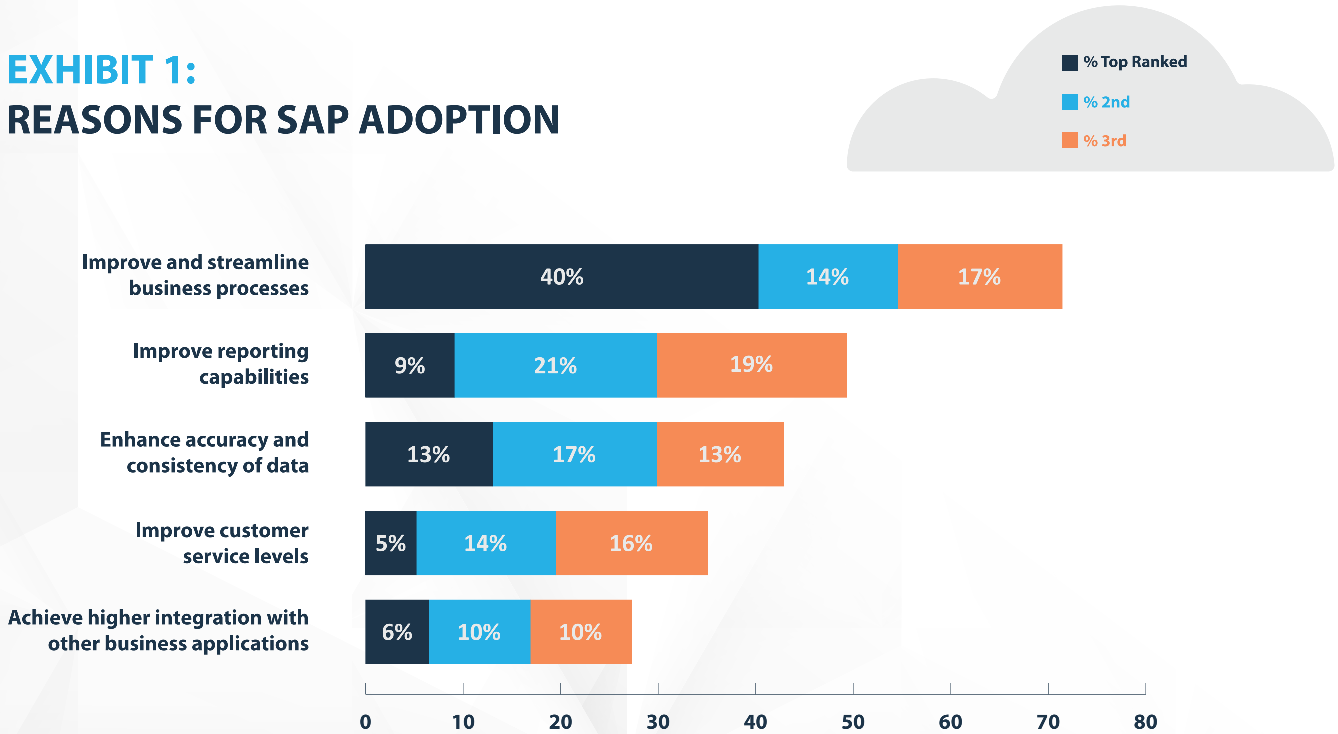
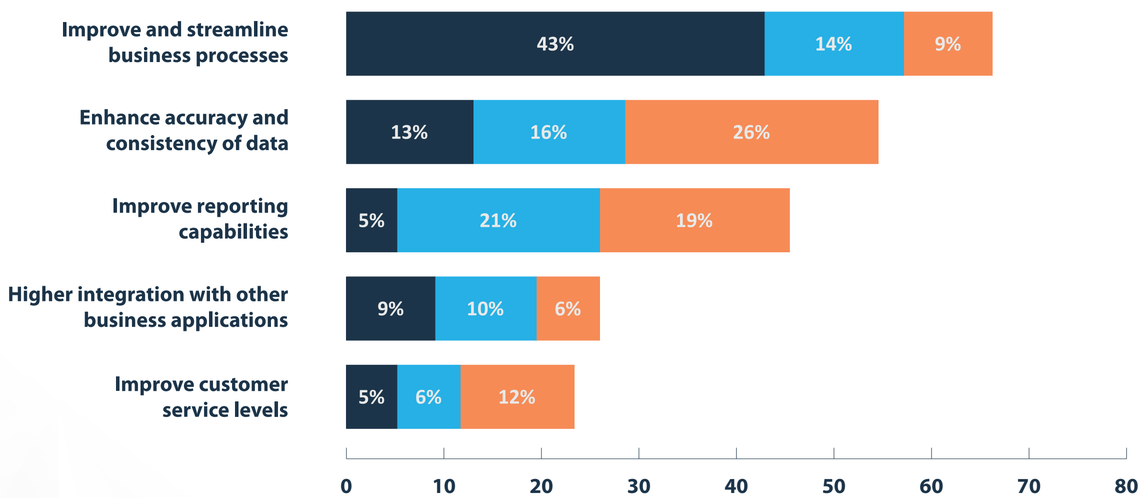


EXHIBIT 2:
REALIZED BENEFITS FOR SAP ADOPTION



TOP 5 BENEFITS OF SAP TO SMBS

SMBs indicate that their top three realized benefits from their adoption of SAP are:

1. Improved and streamlined business processes;
2. Enhanced accuracy and consistency of data;
3. Improved reporting capabilities;
4. Better integration with other business applications; and
5. Improved customer service levels.

Let us put at least one of these realized benefits in perspective. Although "improved customer service levels" was last among the top five realized benefits from the adoption of SAP, that ranking may not be fully representative of the impact in the participating organizations or their ecosystems. In fact, it is worth noting that **60% of participants report that B2Bi via SAP enabled them to improve customer service levels.** And what is even more impressive is those organizations were able to achieve substantial improvement in customer service levels despite average year over year business growth of 10%.

DESPITE HIGH AUTOMATION MORE DATA GOVERNANCE IS STILL NEEDED

Over 75% of the participants indicated that the solutions implemented by SAP and DiCentral enabled them to process orders without human intervention. Despite the overwhelming response, it was obvious that other factors arise that require the organization to suspend this automatic and human-less process, such as "bad data" (the number one cause)(see Exhibit 3).

> "OVER 75% OF THE PARTICIPANTS INDICATED THAT THE SOLUTIONS IMPLEMENTED BY SAP AND DICENTRAL ENABLED THEM TO PROCESS ORDERS WITHOUT HUMAN INTERVENTION."

Most of the bad data is the result of upstream issues caused by a lack of communication, coordination, and collaboration between buyers and sellers regarding retired products, price points, order lots, fulfillment dates, and back orders. Others merely stem from poor process controls on behalf of the trading partner (such as repeating purchase order numbers). This continued barrage of bad data, and in some cases bad behaviors, speak to a larger organizational issue – information governance.

Information governance is the articulation and management of processes, rules, and structures with respect to how information is shared, accessed, and used. A subset of information governance is data governance, which is about ensuring the integrity of data.

EXHIBIT 3: KEY DISRUPTORS TO ORDER PROCESSING

	DISRUPTOR	% OF TRANSACTIONS SUSPENDED PER MONTH
1	The client imbedded an incorrect price associated with the product	16%
2	The purchase order contained many line items. Some of the items ordered are out of stock and we now need to break the PO into two or more orders in order to make a partial shipment	13%
3	The client requested a delivery date we could not honor	9%
4	The client requested an order quantity we could not honor	8%
5	The client sent a duplicate purchase order number	8%
6	The product ordered has been retired and no longer exists	7%

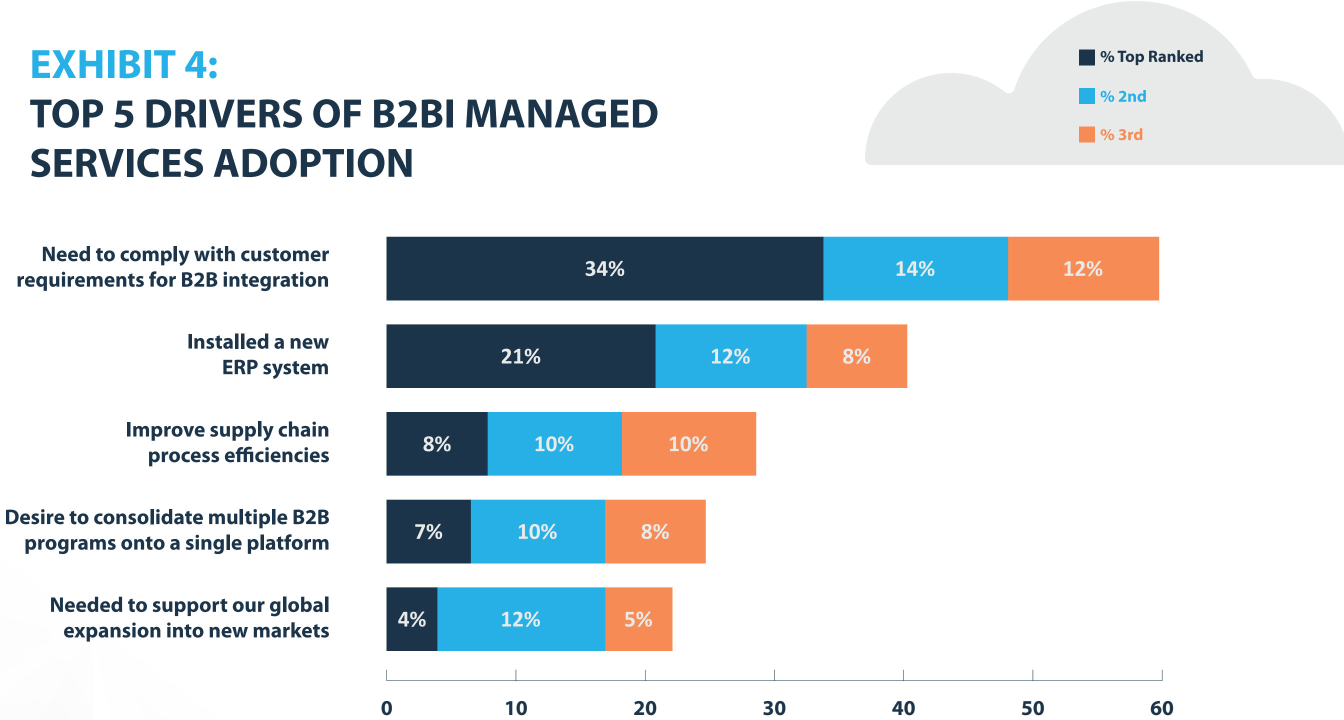
> **60%**
>
> OF REPORTED TRANSACTIONS PER MONTH ARE AFFECTED/ SUSPENDED BECAUSE OF SOME DATA RELATED ANOMALY.

Governance of supply chain information flows can be dirty, thankless work. Organizations are simply not lining up to do this; at least not until there is a data-related supply chain disruption or breach. It is not easy to tie governance of supply chain information flows to the bottom line, at least not in a positive sense. Governance is a process, not a project; it is continual with no defined end state. As such, governance initiatives are costly, time consuming, and in the minds of some “not worth the investment”.

However, the results of our study run counter to this sentiment. Consider that 60% of reported transactions per month are affected/suspended because of some data related anomaly. Governance of supply chain information flows should be a high priority for organizations involved in B2Bi. This is especially true considering the potential revenue at risk when 60% of order transactions are suspended or halted as a result of issues that could have been addressed, but were not.

Based on interviews conducted, most senior managers and executives accept the aforementioned order suspending activities as the cost of doing business. In other words, there didn’t appear to be a sense of urgency to address the issue. Perhaps it is because (a) most are not fully aware of the underlying issue; (b) most don’t know how or if the issue can be managed, mitigated, or prevented; or (c) both situations are true. Despite the issue with a lack of organizational governance of supply chain information flows, we continue to see an uptick in the adoption of B2Bi amongst SMBs. In the next section, we present the top drivers of B2Bi integration.

EXHIBIT 4:
TOP 5 DRIVERS OF B2BI MANAGED SERVICES ADOPTION



TOP DRIVERS FOR B2BI

Our assumption heading into the study was that cost-savings and cost avoidance were going to be major drivers in the selection of a B2Bi partner but we did not see this materialize. While participants confirmed that these solutions drove cost savings and cost avoidance, greater emphasis was placed on selecting a partner that could help them accelerate revenue and to adopt new processes to take advantage of new market opportunities.

It is clear that investing in revenue growth, global expansion, and customer satisfaction are some of the largest drivers in influencing a company to invest in B2B Integration. It is also clear that clients tend to time their purchase of B2B Integration when undergoing a highly intense process of redefining and automating business processes which is typically portrayed in the investment in new ERP system. The top 5 drivers are listed in Exhibit 4.

Cost savings for B2Bi Managed Services was a benefit, but not the primary driver for having implemented these solutions. 48% percent stated that the cost predictability of their B2Bi Managed Services improved their annual fiscal planning, and one participant indicated, “For every document [we exchange] we know exactly what we’re paying versus having to guess”. Further, another executive we interviewed estimated that his organization was able to remove an average of 50 hours of labor per month after adopting B2Bi Managed Services. 30% of the study participants indicated that their organizations had been able to reallocate existing IT personnel to other projects as a result of leveraging B2Bi Managed Services. Using B2Bi managed services did indeed drive cost reductions with 43%, 57%, and 57% of the participants saying that using B2Bi Managed Services enabled cost savings associated with developing maps, on-boarding trading partners, and providing technical support, respectively. Further, a senior manager stated, “[B2Bi Managed Services] enabled us to avoid having to hire 1-3 full time equivalents FTEs for these three activities”.

> **48%**
>
> STATED THAT THE COST PREDICTABILITY OF THEIR B2BI MANAGED SERVICES IMPROVED THEIR ANNUAL FISCAL PLANNING.

> USING B2BI MANAGED SERVICES DID INDEED DRIVE COST REDUCTIONS WITH 43%, 57%, AND 57% OF THE PARTICIPANTS SAYING THAT USING B2BI MANAGED SERVICES ENABLED COST SAVINGS ASSOCIATED WITH DEVELOPING MAPS, ON-BOARDING TRADING PARTNERS, AND PROVIDING TECHNICAL SUPPORT, RESPECTIVELY.

COMPLIANCE PROGRAMS: AN EYE FOR AN EYE…OR NOT?

It is clear that despite large investments in automating the exchange of information by investing in new ERP systems and B2Bi, the ability to be fully automated is not possible given data governance and data quality issues. One way that organizations have sought to address this issue is via compliance programs.

80% of the study participants indicated that their customers run an EDI compliance program that can result in financial penalties, often labeled as "quality deductions", "non-compliance charge backs", "expense offsets", "performance deductions", or "technology expense offsets". Further, nearly 75% of participants report being subjected to fines in the past 12 months, with 3% reporting fines in excess of $100,000 during this period. One senior manager stated, "we're always getting hit with these issues…we dispute charges that are vague…and with the others we try to determine why we missed what the customer already stipulated."

Despite the pervasiveness of these customer-initiated programs, 70% of those subjected to customer initiated, punitive compliance programs, do not reciprocate these actions with respect to their suppliers. Organizations that do reciprocate, by holding their own suppliers accountable, tend to report being subject to fewer fines or lower fine amounts. One manager, who participated in the study, reports that his organization administers a compliance program with its suppliers. The difference in this program when compared to others is that it has an incentive option, and is not solely intended to be punitive. As a result of their unorthodox approach to reciprocity, the focal organization reports that their program has resulted in their third-party logistics providers (3PLs) driving improved performance because they can potentially earn additional revenue under the incentive-laden "compliance" program.

FUTURE TRENDS: WHAT'S THE FORECAST FOR B2BI?

THE DIGITAL BUSINESS MODEL REDUCES THE BARRIERS OF ENTRY

Venture capitalists have made a tremendous amount of money seeking out and funding disruptive business models. We live in a world where the largest taxi company owns no cars (or taxis) – think Uber. We live in a world where one of the largest retailers owns relatively little inventory and historically no stores – think Amazon. Further, the largest lodging provider owns no property – think Airbnb.

> **70%**
>
> OF THOSE SUBJECTED TO CUSTOMER INITIATED, PUNITIVE COMPLIANCE PROGRAMS, DO NOT RECIPROCATE THESE ACTIONS WITH RESPECT TO THEIR SUPPLIERS.

Disruptive business models often attack the age-old belief that the business is protected against a competitive threat given a “significant barrier to entry”. Incumbents in almost every industry need to think differently in the digital age, and question whether their business model now carries a new competitive risk.

Digital disruption is not limited to the above examples. Stories can be found in almost every industry. We see a tiny start up called Tesla who took on Detroit, Germany, and Japan to become a market leader in electronic vehicles by essentially using the same battery that was already being mass produced for laptops. Fidelity, Scottrade and other online brokerage firms now offer consumer checking and pay third party ATM fees; which disrupts the traditional relationship that consumers had with banks.

Retailers that traditionally viewed themselves as the sole source for merchandising product are now being disintermediated by the product companies themselves. Brands such as Under Armor, Oakley, Patagonia, Coach, and Michael Kors have e-commerce sites as well as physical store fronts. They can now bypass the retailer.

All of these new business models were made possible given:

- the plethora of pervasive information technology;
- the ability to access information and data in a new way; and,
- the ability to build a network of users or trading partners.

Digital based businesses require digital integration and will not scale with manual processes. Amazon (and Amazon look-alikes) cannot grow and scale if each individual order requires a back office clerk to call the manufacturer to place the order and arrange for a shipment to a consumer’s home. The product image, merchandising information, the order, the order confirmation, inventory availability, the shipment of the order, the tracking of the shipment, the invoice, the payment and the remittance detail is 100% digital and integrated with trading partners. And while this is true for new businesses employing a digital disruption strategy, these same rewards are available to many traditional businesses if they were adopted with purpose and speed.

Yet, of all of the businesses we surveyed none of them were 100% digitally integrated in their respective ecosystems which represents both an opportunity and a threat.

Being a ***Leader*** creates a more agile organization, lowers costs and allows the business to explore new business models with regard to the information that now flows electronically. Being a ***Laggard*** exposes the company to being potentially disintermediated by others.

IN A DIGITAL BUSINESS MODEL ANALYTICS BECOMES CRITICAL

The study suggests that there will be continued rampant growth in the number of electronic linkages (ELs) and the volume of transactions. Nearly 45% of the participants suggested that they are electronically integrated with more than 50% of their customers, and 40% of those participants expect to grow their electronic linkages count with customers up to 10% while 26% expect growth of greater than 10%.

While participants signaled plans to grow ELs with customers, they also articulated plans to expand the exchange of digital information with suppliers. 41% expect up to 25% growth in EL’s with suppliers, while 35% expect growth of greater than 25%.

> “GOVERNANCE IS A PROCESS, NOT A PROJECT.”

In conversations with more than 300 senior managers and executives on the subject of analytics, we found that nearly 80% do not have an analytics strategy. Given that global supply networks are increasingly becoming digital, it is critical to evaluate the performance of ecosystem members and the data that travels over the ecosystem. As previously discussed, there are issues of bad data and ecosystem partners who simply do not follow agreed-to-conventions in the exchange of data, despite signaling they will do so. Each ecosystem partner typically has a set of "business rules" and these business rules may apply to a process or data element within a given business document. These rules may be conditional. For example, a retailer may dictate to a supplier to use one of two different trucking companies depending on the weight of the item being shipped. Some rules will be static. For example, a supplier's invoice will not be processed unless the invoice number has a unique value over a given twelve-month cycle. This is simply because most ERP's can decipher if this is a new invoice or a correction to an existing invoice. Other types of business rules link business documents with events. A retailer may dictate that a delivery truck will not be allowed to enter the yard to unload until an advanced shipping notice (ASN) has been received from the manufacturer.

"ONE EXECUTIVE WE INTERVIEWED ESTIMATED THAT HIS ORGANIZATION WAS ABLE TO REMOVE AN AVERAGE OF 50 HOURS OF LABOR PER MONTH AFTER ADOPTING B2BI MANAGED SERVICES."

Organizations that run compliance programs are in a perfect place to examine this interaction of digital data, and its impact on process and company performance. The fact that some of these compliance manuals can be upwards of 20-30 pages illustrates the complexity of managing an ecosystem where each participant has a unique set of compliance rules. A typical compliance program may dictate upward of a 100 different and unique business rules. As a result, enabling just 10 customers can place the burden on management of managing 1,000 unique business rules.

Monitoring, measuring, alerting and noncompliance avoidance are the key items that are driving analytics now. A typical noncompliance violation can cost between $100 and $500 per incident. As reported, several of this study's participants have reported excess of $100,000 in fines within a 12-month period.

Monitoring transactional performance and punctuality is critical within an ecosystem. A frequent element associated with establishing an EL is the sequence of transactions and the timeline associated with processing them. Processing information outside of these established guidelines can result in a charge back. Being able to analyze punctuality relative to each ecosystem partner's requirements can be more easily managed using advanced analytics. The same can be said with regard to the ability to ascertain whether correct data values have been used relative to conditional events.

As business processes change, analytics will measure the "performance" of the ecosystem members. As a retailer makes the shift from a traditional brick and mortar environment to that of an online retailer, different metrics become more important, such as fill rates, order acceptance rates, and fulfillment timeliness. Being able to make decisions about what products to remove from sale based upon the aggregate quantity of inventory will become important. For example, in automotive OEM environments, fulfillment timeliness becomes more important as safety stocks become a historical process and plants move to real time inventory.

As more and more data is shared within the ecosystem, smarter business decisions can be made. For many years, retailers have limited the exchange of information provided to suppliers. Information such as the final sale price, the location in which the product was sold, and the quantities that had to be discounted were all highly guarded secrets. Most suppliers were simply evaluated by their performance to fulfill a replenishment order to a distribution center.

Each year more and more retailers are opening up Point of Sale (POS) data to suppliers to permit them access to where and when the product was sold, and the final sale price indicating whether the item had been sold at list or at discount. Using analytical tools, the supplier suddenly becomes more knowledgeable and can make better business decisions about advertising or merchandising in certain geographies or seasons of the year. Point of sale data is just another digital data file exchanged amongst ecosystem members, (albeit viewed as highly sensitive data by retailers).

RECOMMENDATIONS AND CONCLUSIONS

PREPARE FOR DIGITIZATION

It is safe to assume that the economy, processes and ecosystems of tomorrow will be more digitized than they are today. The ability to handle this data will have an impact on how productive and competitive a company will be.

In retail ecosystems we see a trend of brick and mortar stores undergoing contraction while digital ecommerce stores are expanding. The retailers of tomorrow may have zero physical inventory but become the digital market place where consumers buy and sell product. This has implications not only on retailers but the manufacturers and transportation providers that move these goods. Manufacturers who once planned their build cycles in batch, shipped in batch and invoiced in batch are now being asked to satisfy individual purchases and to ship them to a consumer's home. All this change is being imposed without any increase in sales volume because it is simply a shift from batch processes and shipments to real time individual orders via parcel post shipment to a consumer's home.

For example, it is conceivable that a manufacturer of 5,000 units of men's ties might have handled the historical orders of this product by hand given 2-3 retailers and an average annual purchase order volume of 20 orders. If the world of retailing completely shifts to omnichannel and the fulfillment of these same 5,000 units now is an individual order, it will be hard to appreciate how the order and the associated supply chain and invoice transactions can be processed by hand.

Every organization can take steps to prepare for this digital evolution. Below are some recommended steps:

6. DETERMINE WHETHER YOUR IT INFRASTRUCTURE AND PERSONNEL CAN EXECUTE THE JOURNEY.

Agile organizations need to ask themselves the following questions:

- Does your organization have multiple sources of "truth" with respect to your data that provide conflicting information?
- Does your organization spend an enormous amount of time (on a consistent basis) aggregating data from disparate systems and moving them into other systems for ease of analysis?
- How responsive is your organization when requests for information or services are made?
- How responsive is your organization when a customer asks to electronically bind respective ERP systems to share data?
- Do stakeholders consistently receive accurate, timely, relevant, and consistent information, regardless of the individual within your organization with whom they speak?
- Does your organization have any internal service levels or is a five-day response just as good as a 15-minute response?
- Does your organization have a disaster recovery plan to maintain normal operations? What's your organization's recovery interval?

Based on the findings in this study, it is suggested your organization solicit the advice and guidance of experts and partners to assist with the journey towards being more responsive and architecturally positioned to respond well in the digital world. This recommendation is akin to the actions of the organizations that participated in this study, which chose to partner with SAP and DiCentral.

7. FOCUS ON YOUR OPERATIONAL BACKBONE.

An appropriate digital strategy requires a strong operational backbone. The ERP is the central component of that operational backbone. If you are going to be successful with digital business, it is important to balance the emphasis placed on the operational backbone, which supports your core operations, and the digital services backbone, which enables you to leverage disruptive technologies such as SMACIT (social, mobile, analytics, cloud, and the Internet of Things) to facilitate innovation and rapid responsiveness. Systems and processes should be architected in a manner that can accommodate change. Do not outsource core competencies; outsource activities that are utility in nature and prevalent to all. Create an agile environment. Systems and processes should be architected in a manner that can accommodate change.

8. AVOID TIGHT COUPLING AND IT RIGIDITY.

It's not about having every component of the IT infrastructure tightly coupled; it's having the appropriate elements coupled in a manner that facilitates the desired level of agility. Recognize that every organizational strategy (no matter how good or bad) relies on a transactional framework that is undergirded by an IT infrastructure, namely your ERP, which enables agility or inhibits it. It was concerning that study participants stated their SAP adoption decision wasn't driven by their desire to support digital growth. As matter of fact, this was the least applicable driver in the adoption decision. This could potentially speak to the fact that there is a misalignment of the business strategy with those in IT as it relates to digital business transformation.

ENSURE THE BUSINESS OBJECTIVES ARE UNDERSTOOD BEFORE IMPLEMENTING THE SOLUTION

Functional leaders working in conjunction with IT would be well served to work together to clearly articulate and define the organization's supply chain goals and objectives for both customers as well as the sourcing functions. It is evident that when it comes to B2Bi customer-facing supply chains are different and receiving more investment than supplier-facing supply chains and processes. In addition, most organizations are not static as we have discussed in detail in this paper. The organization leaders must identify the measures and analysis that will be necessary to run the business in the future.

When IT investment decisions are backed by clearly defined objectives, these investments are much more likely to result in more effective IT integration that will, in turn, improve responsiveness and quality. Organizations can very easily fall victim to the demands of trading partners and other entities and agencies external to the organization. As a result, organizations could make a rash decision to invest in B2Bi based on the actions of competitors and the pressures caused by regulations and customer demands, for example.

In the longer term, SMBs will be better served to consider the needs of ecosystem participants along with the goals of their organization to make the best investment decisions possible. Begin with architecting your organization and processes with integration and agility in mind. Then, follow that with clearly defined goals for B2Bi capabilities. Goals should balance both short-term (i.e. 1-3 years) and mid-term (i.e. 4-6 years) needs. These two planning horizons will help address the immediate pressures while also preserving the opportunity to nurture and evolve existing B2Bi capabilities to achieve a high level of supply chain effectiveness, and ultimately trading partner satisfaction. Looking beyond six years is less valued, given the digital landscape is changing so fast that it is unlikely that anything beyond this planning horizon will still be applicable when that time comes.

> "RECOGNIZE THAT EVERY ORGANIZATIONAL STRATEGY (NO MATTER HOW GOOD OR BAD) RELIES ON A TRANSACTIONAL FRAMEWORK THAT IS UNDERGIRDED BY AN IT INFRASTRUCTURE."

PREPARE THE ORGANIZATION FOR CHANGE

The far majority of our participants were in what most people would call traditional businesses, such as manufacturing, consumer product goods (CPG), and logistics. It was clear to some degree they all benefited from having adopted some level of digital integration with their customers. In many ways these traditional businesses have a larger challenge than new comers who have based their business on a completely new digital model. Traditional organizations have legacy systems, processes, and reward systems, and much of that needs to change in order to embrace the digital model.

Bringing about change is not only difficult in an intra-organizational setting but extremely difficult in an inter-organizational setting, where the alignment of rewards, investments, and timing can be more difficult to manage.

The velocity and speed of change is increasing. Massive store closures at JCPenney, Macy's, American Eagle, Office Depot, Walgreens and Walmart combined with bankruptcy filings from companies such as Payless ShoeSource, hhgregg, Aeropostale, and Sports Authority, and growing concerns surrounding both Kmart and Sears indicate that a radical transformation is underway.

Standing still is not an option. Venture capitalists continue to flourish on the promise that they can help incubate businesses focused on disintermediation and disrupting traditional business models. Traditional organizations must be prepared to adopt new business models quickly and swiftly such that they benefit from being on the offensive as opposed to trying to retain their value while being on the defensive.

> "TRADITIONAL COMPANIES MUST BE PREPARED TO ADOPT NEW BUSINESS MODELS QUICKLY AND SWIFTLY SUCH THAT THEY BENEFIT FROM BEING ON THE OFFENSIVE AS OPPOSED TO TRYING TO RETAIN THEIR VALUE WHILE BEING ON THE DEFENSIVE."

SELF-ASSESSMENT

We have developed a self-assessment tool that measures your agility in a digital business world. Answer the 12 questions to see where you your organization stands.

PLEASE RATE EACH ITEM ON A SCALE OF 1-10

(1 = NOT AT ALL, 10 = A GREAT DEAL)

1	You see things as your customers/from your customers' perspectives.	
2	You see things as your suppliers/from your suppliers' perspectives.	
3	You have clearly defined goals for B2Bi program(s).	
4	You have key performance metrics for your B2Bi program(s) that change with the business environment.	
5	You allow the goals of your B2Bi program(s) to driver day-to-day decisions.	
6	You attempt to get ahead of problems faced by your customers to offer solutions before they realize they need them.	
	TOTAL	

PLEASE RATE EACH ITEM ON A SCALE OF 1-10

(1 = NOT AT ALL, 10 = A GREAT DEAL)

1	You focus on your customers	
2	You focus on your suppliers	
3	The goals for your B2Bi program(s) are ad hoc/not clearly defined?	
4	You have relatively static key performance metrics for your B2Bi program(s) even when the business environment changes.	
5	You routinely (e.g. monthly, quarterly, semi-annually) assess the performance of your B2Bi program(s).	
6	You primarily offer products/services in reaction to demand/market changes.	
	TOTAL	

Compare the total points in each table. Ideally, you want the points in the first table to be higher than those in the second table, and as close as possible to 60. This would indicate that you're driven by digital business and have a clear direction of where you're heading. If the opposite is true, and the scores in the first table are lower than the scores in the second table, you are still plagued by a traditional approach to business that could make you vulnerable and a likely candidate to be digitally disrupted.

TEMPLATE TO ASSESS IMPACT OF B2BI

The template below is a starter set that is intended to get you moving towards assessing where and to what degree B2Bi will have/is having an acceptable impact on your organization. The next step is to take the performance metrics and add to them or replace them with your own. This needs to be a collaborative process with representatives from all internal stakeholder groups. Use the time to set acceptable performance thresholds for each level of impact. You should repeat this entire process with key external stakeholders to make sure you have a clear picture of how they hope to benefit from your B2Bi capabilities. Next, compare your metrics and performance levels with those of your external stakeholders and address the gaps and inconsistencies.

ASSESSMENT OF STRATEGIC IMPACT

Performance Metric	Low/Seldom	Medium/Often	High/Almost Always
B2Bi enables your ability to gain market share	Decrease or no change in market share	5% increase in market share	>=10% increase in market share
B2Bi provides a capability/ competency difficult to imitate	Can be imitated almost immediately	Can take up to a year to imitate	Takes more than a year to imitate

ASSESSMENT OF TACTICAL IMPACT

Performance Metric	Low/Seldom	Medium/Often	High/Almost Always
B2Bi enables you to improve administrative efficiency	<10% improvement	10%-15% improvement	>15% improvement
B2Bi improves your ability to allocate scarce resources			

ASSESSMENT OF OPERATIONAL IMPACT

Performance Metric	Low/Seldom	Medium/Often	High/Almost Always
B2Bi aids in the coordination of activities/processes across functional areas	<75% of the time	75%-90% of the time	>90% of the time
B2Bi improves your labor productivity	<15% improvement	15%-20% improvement	>20% improvement

ABOUT DR. RANDY V BRADLEY

ASSISTANT PROFESSOR OF INFORMATION SYSTEMS AND SUPPLY CHAIN MANAGEMENT

Randy V. Bradley is an Assistant Professor of Information Systems and Supply Chain Management in the Department of Marketing and Supply Chain Management at The University of Tennessee, Knoxville. He holds a PhD in Management of Information Technology and Innovation from Auburn University. His research has appeared in the *Journal of Management Information Systems, MIS Quarterly Executive, Decision Sciences, Information Systems Journal, Journal of Information Technology, Communications of the Association for Information Systems,* and *Information Technology Governance and Service Management: Frameworks and Adaptations* among others. His research interests include the strategic value of enterprise architecture, healthcare IT, IT governance, and IT in the supply chain.

ABOUT DICENTRAL

Founded in 2000, DiCentral is a leading global provider of B2Bi Managed Services headquartered in Houston, Texas, with 10 offices worldwide supporting customers in over 27 countries.

DiCentral's services and solutions are singularly focused on B2B integration and used by many of the Fortune 1000, processing over $500 million in transactions for over 30,000 organizations worldwide. The company's vertical expertise transcends Automotive, Retail, Distribution, Manufacturing, Pharmaceutical, Health Care, Energy and Financial Services.

DiCentral provides turn-key Cloud based B2Bi Managed Services, which allows organizations to connect and exchange critical business documents with their trading community. The core components of the Managed Services offering include: ERP Integration, Secure B2B Communications, Data Transformation, Business Rule Analytics, Inventory Management and Trading Partner Community Management.

DiCentral's 20+ proprietary ERP adapters enable customers to automate fulfillment, shipping and receiving processes, respond quickly to business process and ERP changes and improve supply chain visibility. The company develops and markets a complementary suite of supply chain applications, including on premise enterprise application integration (EAI), mapping & translation, inventory management, vendor managed inventory, managed file transfer, warehouse management, and point of sale (POS) analytics.

ABOUT SAP

SAP is the world leader in enterprise applications in terms of software and software-related service revenue. Based on market capitalization, we are the world's third largest independent software manufacturer. SAP® Business One is designed specifically for small companies and midsize businesses. It is a single, affordable solution for managing an entire company – including financials, sales, customer relationships, and operations. Sold exclusively through SAP partners, SAP Business One is used every day by over 55,000 customers, in more than 150 countries, 27 languages and 43 localized versions – and deployed on premise, in the cloud and accessible via any mobile device. SAP Business One and SAP Business One version for SAP HANA help businesses streamline operations from start to finish, gain instant access to company information in real-time, improve decision making and accelerate profitable growth.

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