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Strategies for Electronic Integration: Lessons from Electronic Filing of
Tax>Returns

N. Venkatraman and Ajit Kambil

Massachusetts Institute of Technology
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Working Paper #3127-90-BPS
Draft: 2/27/90

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TO THE PRESIDENT OF THE UNITED STATES OF AMERICA
FROM THE SECRETARY OF THE UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C. 20250

Dear Mr. President:

I have the honor to acknowledge the receipt of your letter of the 11th instant, in which you refer to the report of the Secretary of the United States Department of Agriculture, dated the 10th instant, and to the report of the Secretary of the United States Department of the Interior, dated the 10th instant, both of which reports are herewith enclosed for your information.

I am, Sir, very respectfully,
Your obedient servant,
[Signature]

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Introduction

Information technology (IT) is emerging as a key force in shaping the basis of competition in many markets¹. While information systems have long been considered critical for effective management, a major reason for the current interest in IT lies in the capability to change the basis of competition through the deployment of innovative IT-based applications. This phenomenon has attracted the attention of researchers and management professionals and the current literature discusses the nature and *levels* of systems and applications², *descriptive* and *normative* frameworks for managers to assess the role of these applications in their business contexts³, and theoretical propositions on the role of I.T. in changing the basis of competition⁴.

The frameworks offered for managerial decision-making are typically justified by a set of popular and perhaps over-used collection of examples such as American Airlines' *SABRE* reservation systems⁵, Baxter's *ASAP* system⁶ and Foremost McKesson's *Economost* System⁷. Indeed, the role of these systems on the competitive characteristics of the respective markets is generally considered legendary. However, even a casual perusal of the emerging literature would indicate that the underlying linkage between these systems and the changes in market has not been adequately explained, resulting in a rather blind acceptance of the validity and importance of such systems.

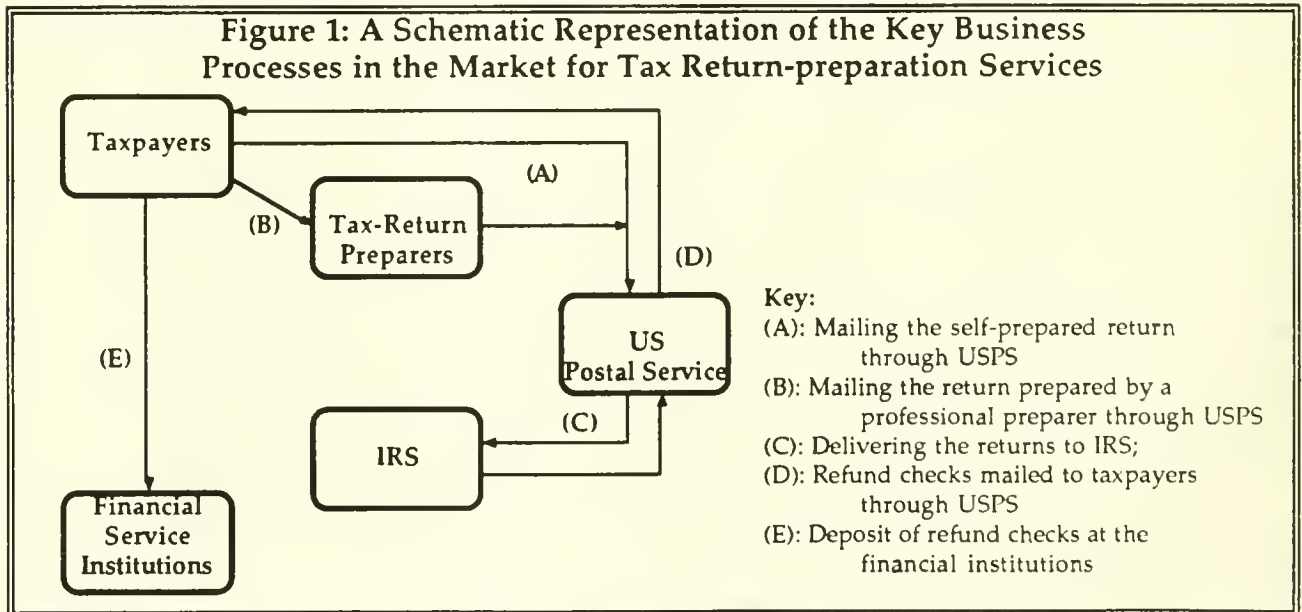
This paper seeks to develop a richer link between the deployment of I.T. across multiple organizations and the changes in the competitive marketplace. Specifically, it describes the impacts of electronic interconnection among multiple players on the market for individual tax-return preparation services (hereafter, return-preparation). Its purpose is three-fold: (a) to present a detailed study of changes in the characteristics of a *marketplace* influenced by a significant electronic integration initiative; (b) to examine the pattern of strategic responses to this initiative, and the consequent impact on the competitive characteristics of the marketplace; and (c) to derive strategic implications of electronic interconnections, termed here as electronic integration.

The Marketplace for Return-Preparation Services

Background. In a typical tax-year, approximately 100 million individual tax returns are filed with the Internal Revenue Service (IRS). Figure 1 illustrates the key business processes involved in the preparation and filing of individual tax returns (i.e., Form 1040 and associated schedules). The individual taxpayer either prepared

his or her own tax-return or received services from a professional return-preparer (like H&R Block, TaxMan or independent tax accountants). The tax-return was mailed to the IRS using the U.S Postal Service (USPS), which was then processed by the IRS and if the taxpayer was owed a refund, a refund-check was delivered through the USPS. In a typical year, approximately 75% of the taxpayers receive refund checks with an average refund of \$900.

Characteristics of the Market. The market for return-preparation services is characterized by high fragmentation at the local level with H&R Block, Kansas City⁸ occupying a leading position at the national level. The market growth has been relatively flat during the recent years with the percentage of taxpayers opting for the professional return-preparation service (link, B) stable around 50%. The reasons for the existence of link (B) are many: First, many taxpayers find it difficult to prepare their returns themselves due to the perceived complexity of the tax laws and the forms. Second, many believe that the professional preparer can identify subtle tax deductions, thereby increasing the size of their refund. Finally, many tax payers fear making errors that may result in penalties from the IRS, and seek the services of the professionals. The business is obviously seasonal, with many offices functioning for



about five months in a year during the tax-filing season and closed for the rest of the year.

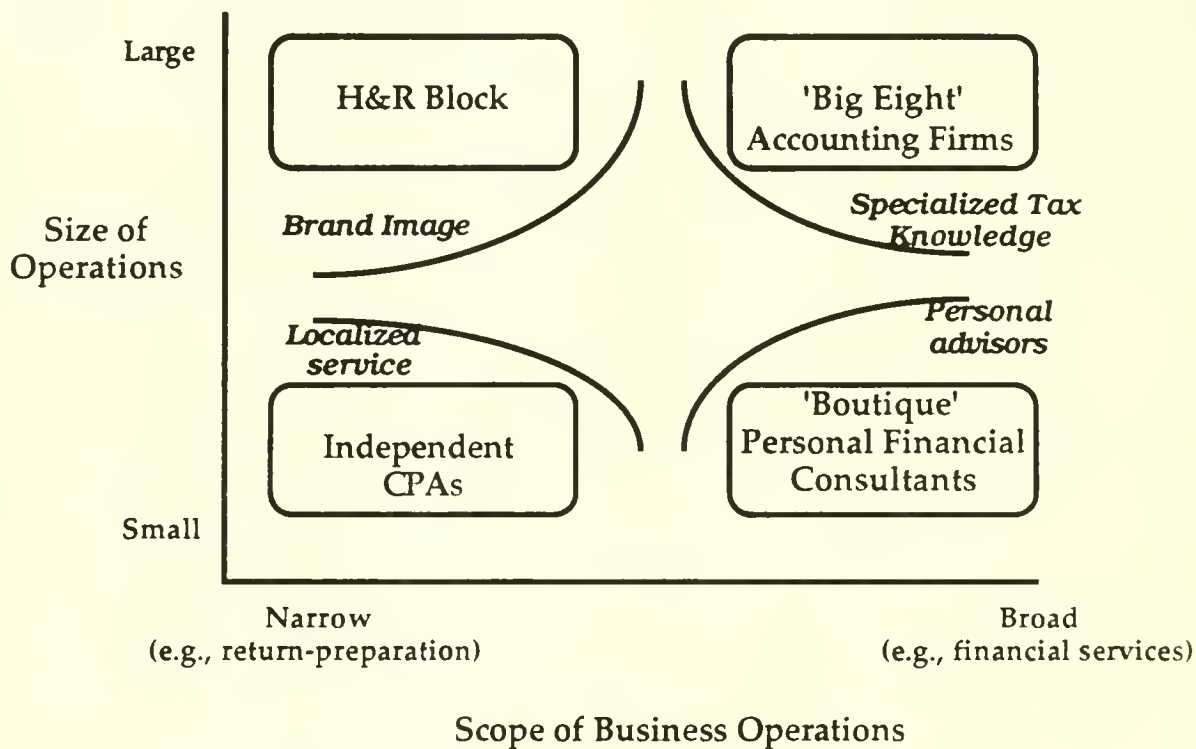
Although the return-preparation is a seemingly simple, standard service, many related-services are offered in the marketplace. Figure 2 illustrates the positioning of the key players along two key dimensions -- (i) the *business scope* (a narrow view given by tax-return preparation as a stand-alone business activity or a broader view given by tax-return preparation as a part of larger financial and tax-related activities) and (ii) the *size of operations* (relatively small, single-CPA operations to large, multi-location, multi-personnel operations). The four distinct positions that emerge from this analysis are: (a) H&R Block the leading tax preparer with more than a third of the market, but with a narrow business scope of only tax-return preparation; (b) the 'Big Eight' Accounting firms who provide a wide range of accounting, investment and tax advice to their clients; (c) smaller (i.e., single-to-few CPAs) firms, who generally maintained a narrow business scope of only tax-return preparation; and (d) a niche segment with small boutique-type operations for high-income clients requiring personalized service involving investments and taxes.

Our research indicates that these groups are quite independent with little mobility across these four 'strategic groups'⁹. This is because each group served distinct market segments and was constrained by mobility barriers arising from differential strategic assets and distinctive competencies such as: personalized financial service to high-income clients (i.e., boutique advisors), a carefully developed image of refund- enhancement through high levels of advertising (H&R Block), specialized tax and legal knowledge ('Big Eight Accountants), as well as economies of scale and scope in return-preparation. The major sources of mobility barriers are identified in Figure 2 for the different groups.

The Role of Information Technology. The return-preparation activity is characterized by limited applications of information technology, despite its high information-intensity. Computers are generally deployed in the back-office of larger preparers, while the smaller preparers accessed them through service bureaus for return-processing and error checking. Although larger businesses had adopted computerized operations, it was not commonplace to observe computerized tax-return preparation as airline ticketing or banking transactions. Three major reasons for the limited use of computer technology are: One, based on market research, the return-preparers concluded that the use of computers in the front office reduced the *quality* of service perceived by the customer. Two, since return-preparation is a seasonal business, investments in fixed capital with uncertain efficiency-oriented benefits could not be routinely justified. Finally, the use of computers for return-preparation significantly alters the skill-requirement of the workforce -- which is

unattractive given the relatively tight labor market for computer-literate workforce. Collectively, the impetus for the widespread adoption of computers did not appear to exist.

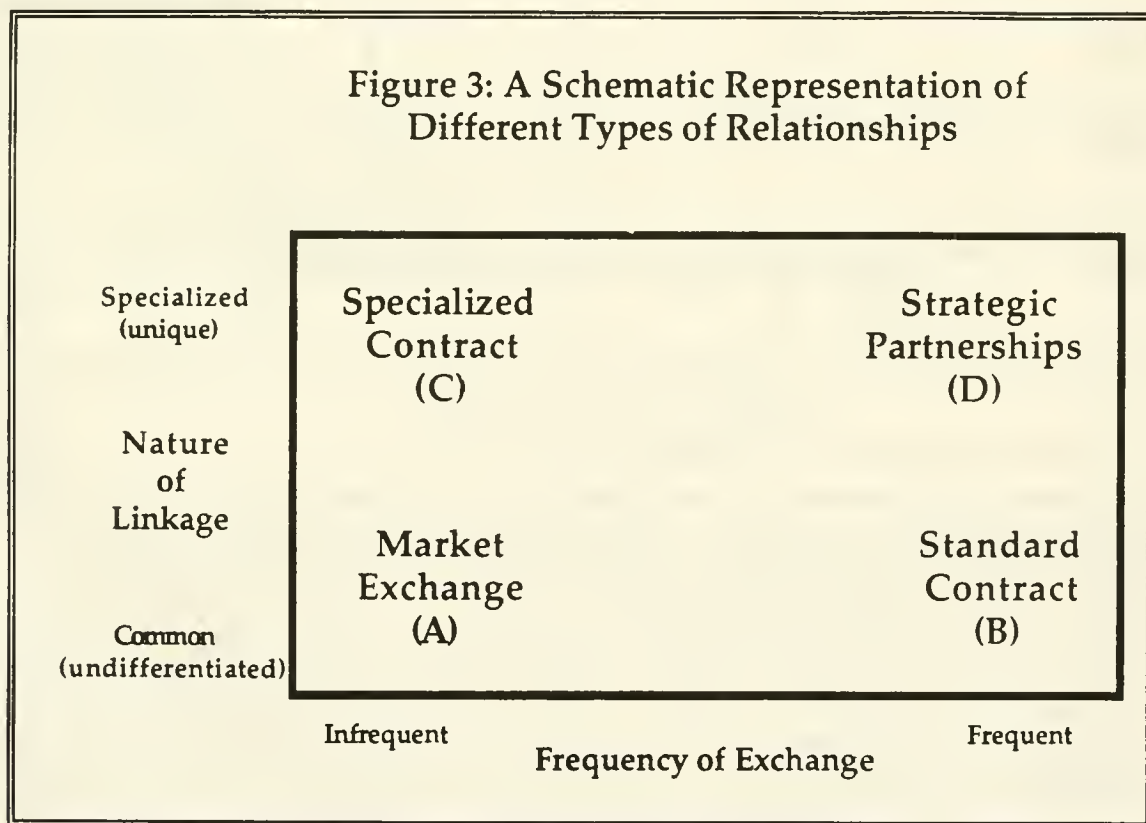
Figure 2: A Schematic Representation of the Key Strategic Groups in the Market for Tax Return-Preparation Services



Business Networks. A schematic representation of a *network of business relationships* among the key players in this marketplace is shown in Figure 4. The network is defined as the pattern of roles, positions and interdependencies between various players and represented in terms of two basic elements: *nodes* and *linkages*. Nodes refer to the independent players who perform critical, interdependent activities, and linkages refer to the existence and characteristics of the nature of relationships between each pair of nodes. Note that 'X' indicates the absence of a linkage between a pair (i.e., independent activities in the marketplace), while 'xx' refers to the diagonal cells. The rows and columns depict the nodes, while the cells

indicate a stylized representation of the linkage based on a simple conceptualization of the type of relationships derived in Figure 3.

Adapting Williamson's¹⁰ work, we specify a framework depicting different types of relationships using two dimensions -- *nature of linkage* and *frequency of exchange*. As Figure 3 indicates, the common linkage with infrequent relationship is termed as *market exchange* (A), a typical transaction between a buyer and a seller or service-provider; the common linkage with frequent relationship is termed as *standard contracts* (B), which is best exemplified by the use of ATMs in a bank. The third type is specialized linkage with infrequent relationships is termed as *specialized contract* (C), where unique resources are committed for this transaction, as in the case of transactions between physicians and different patients, lawyers with various clients, etc. Finally, the fourth type is the frequent transaction with specialized assets, termed as *strategic partnerships* (D). We use labels (A) through (D) to represent the type of relationships in the business network.



As Figure 4 indicates, most of the relationships are characterized by either (A) or (B) type indicating undifferentiated relationships. The existence of many empty cells indicate the absence of opportunities for developing interrelationships, and

given that the five types of players have their distinct roles, there is limited reasons for vertical integration. Subsequently, we use the above framework to discuss changes in the business network, enabled by electronic integration initiatives in the marketplace.

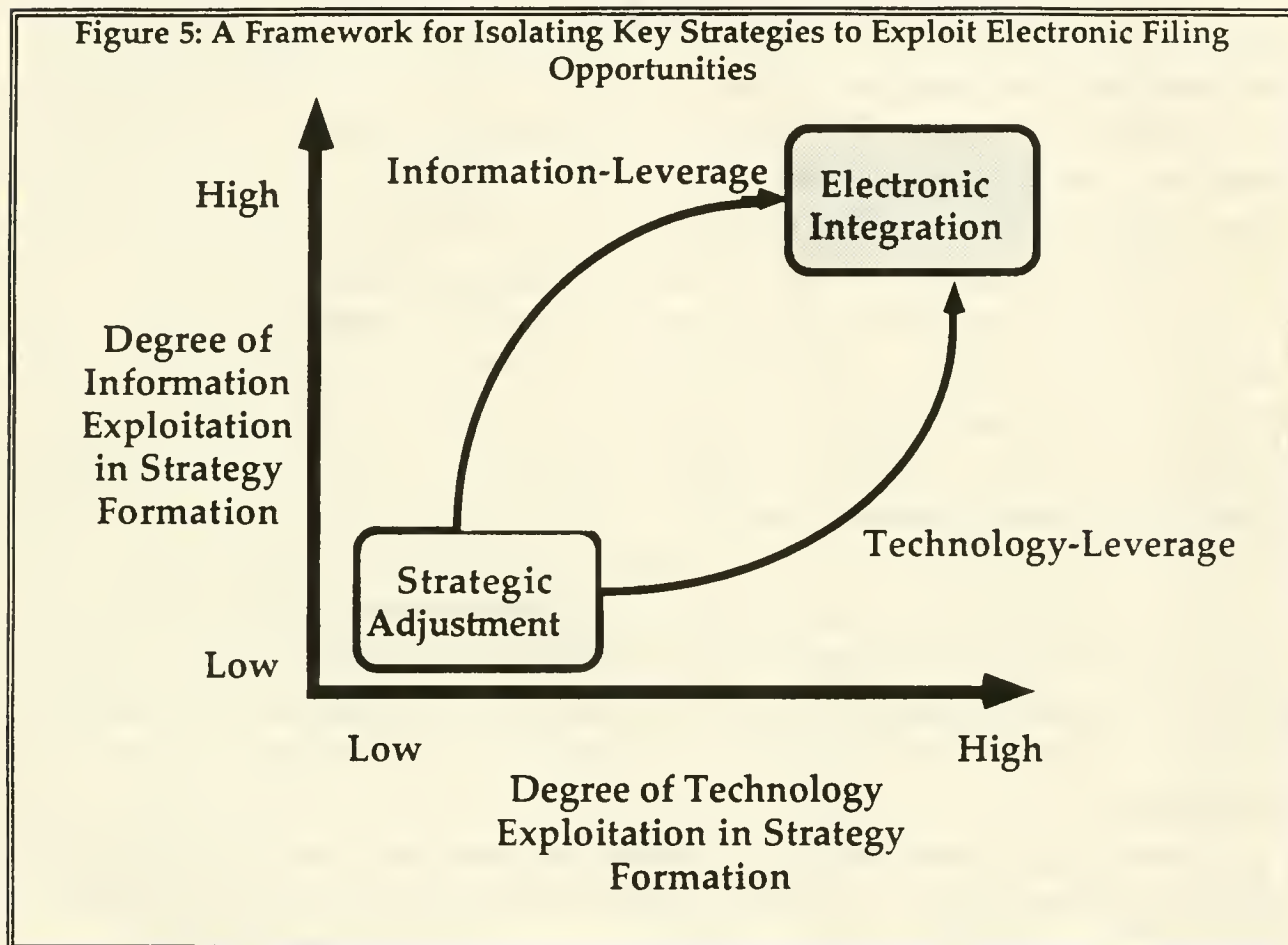
Figure 4: A Schematic Representation of the Network of Relationships in the Marketplace

	Taxpayers	Return Preparers	USPS	IRS	Banks
Taxpayers	[xx]	A/B	A	A	A/B
Return Preparers	A/B	[xx]	X	X	X
USPS	A	X	[xx]	X	X
IRS	A	X	X	[xx]	X
Banks	A/B	X	X	X	[xx]

The box (appended at the end of this manuscript, but may be inserted at the appropriate place) describes the evolution from paper-based filing towards electronic filing. In simple terms, electronic filing enables the return-preparer and/or authorized 'filer' to electronically transmit the return to the IRS (using a pre-authorized protocols). This enables the filer to obtain confirmation of receipt as well as arrange for direct deposit of refunds, if due. This seemingly simple automation of data exchange has significant implications for the market for return-preparation and related services. The changes in strategic directions and the consequent impact on the business network reconfiguration is discussed below.

Strategic Responses to the Electronic Filing Initiative

Figure 5 is a framework that recognizes two dominant approaches to developing strategies in response to the electronic filing initiative, namely: (a) **information exploitation**, and (b) **technology exploitation**. This allows us to identify two major strategies with two strategic trajectories in the changing marketplace.



The strategy defined by the low-low position is termed, *strategic adjustment* -- representing minimal changes in response to the electronic filing initiative. The basic product-market definition is unaltered, but some adjustments are made to offer electronic filing options to the customers. This is because until electronic filing, the non-existence of I.T. capabilities was transparent to the customers as long as the service quality and price was unaffected. However, the electronic filing initiative compels the return-preparers to adopt the I.T. platform as it becomes the standard business infrastructure. Thus, while hardware and software have long been available for automating return-preparation, the critical impetus is its potential role as a visible differentiating factor in the marketplace. Indeed, our research indicates

that although electronic filing initiative by IRS is not necessary for exploiting benefits from software advances, it did provide a powerful impetus for the computerization of the return-preparation activity¹¹.

Electronic filing capabilities provides a major source of differentiation given the importance of quicker refunds to the 75% of the taxpayers who are eligible to receive refunds in any given taxyear. Thus, we see *strategic adjustment* manifested in product-offerings like: Rapid Refund (H&R Block) -- which is an extension of the traditional product of return-preparation but with electronic filing of those returns that are eligible for refunds. This allows the firms with this capability to differentiate themselves from those who do not have the electronic filing capabilities. We term this as strategic adjustment since the definition of the service -- namely, tax-return preparation -- has not been changed by the participants adopting this strategy.

At the other end is the strategy termed as electronic integration -- which *maximally* exploits both the technological and the information capabilities. The shift from strategic adjustment towards electronic integration can be conceptualized in terms of two major trajectories, termed as *technology-leverage* and *information-leverage*. The former represents the array of options to efficiently and creatively leverage *technology capabilities* to redefine the characteristics of products and services as well as create new sources of competitive advantage, while the latter represents the array of alternatives to creatively leverage the *information content* to redefine products and services and create new sources of competitive advantage. We first discuss these two trajectories as a way of leading into the strategy of electronic integration.

Technology leverage realizes the fundamental sources of value that lie in the technology infrastructure -- including data processing, storage, communication and input-output capabilities -- which are central assets in any electronic integration initiative. In the present context, it is reflected in the innovative offering of electronic filing as a fee-based service as an alternative to the role played by the USPS (see Figure 1 and 3). Specifically, we are witnessing the emergence of 'return-filing' as a fee-based service distinct from 'return-preparation.' This is potentially attractive business opportunity for banks and other institutions, that can leverage their existing technology platforms and commercially available return-preparation software to file tax-returns with the IRS without necessarily preparing them. Alternatively, they could serve as the 'electronic filers' for professional return-preparers, who may not find it advantageous to invest in the necessary I.T. infrastructure for electronic filing.

Two manifestations of technology leverage in this changing marketplace illustrate the potential along this trajectory. One pertains to the role of retail financial institutions as potential electronic filers. This is facilitated by *Electronic Filing Center, Inc.* -- a new business entity, which provides turn key service to the financial institutions to enable them to leverage their existing technology infrastructure for new sources of revenue. As an example, *Citibank* offers its customers the capability to file their returns electronically through *Electronic Filing Centers, Inc.* for a fee of \$30 with the specific benefits of accuracy and completeness of the returns in addition to faster refund. This could ultimately serve as the mechanism to consolidate several retail banking services [such as: checking account, savings account, salary direct-deposit, investments, mortgages and credit-card into one integrated account with possible assistance in tax-return filing] with the potential to become the equivalent of Cash Management Account (CMA)¹² of the 90s.

The other pertains to the potential role of non-financial retail outlets as electronic filers. We see this manifested in *Instatax* which has created an electronic infrastructure through retail outlets such as *7-eleven* stores, *Revco* drugstores, and *Mail Boxes, Etc*¹³. The tax forms -- either self-prepared (link A in Figure 1) or professionally-prepared for mailing through USPS (link B in Figure 1) -- are collected at these outlets and faxed to the *Instatax* headquarters in San Diego, California for checking their accuracy as well as their completeness before electronically filing them with the IRS¹⁴.

With reference to Figure 1, it is now possible to provide 'return-filing' service to the 50% of the taxpayers who presently do not require return-preparation service as well as to those who use the return-preparers without the electronic filing capability. More importantly, it has the potential to shift the focus away from 'return-preparation,' towards 'return-filing' -- especially given the increased proliferation of return-preparation software that codifies the knowledge required to complete simple tax-returns.

An obvious question pertains to the price-cost relationship in the technology leverage trajectory. The present price for filing a return electronically and providing the confirmation of its receipt by the IRS is in the range of \$25-30 as against 25 cents for mailing through the USPS. We expect the prices to drop as the demand picks up and the availability of outlets increases. However, as long as the taxpayers are prepared to pay a significant premium for electronic filing, business responses through price-skimming strategies will remain attractive during the early stages of

life-cycle. As the market eventually matures, the financial institutions could benefit through their integrated product offering and leveraging return-filing activities.

The *Information-leverage* trajectory is predicated on exploiting the information assets available to the firm. This realizes the information content embedded both in the product as well as in the larger delivery channel as a fundamental sources of value. While it is complementary to technology leverage, it has been a relatively underdeveloped idea in the discussion of benefits through electronic integration. It is important to recognize that McKesson's ability to enlarge their business scope [beyond distribution to include insurance and other related services] reflects their ability to leverage information assets and attributes derived from integrating their business processes. Similarly, Baxter's attempt to leverage their ASAP infrastructure to provide stockless-inventory to hospitals rests on their ability to exploit the information processing capabilities relating to their understanding of the stock-levels in different locations within a given hospital¹⁵.

In the context of electronic filing of tax-returns, information-leverage is reflected in the possibility that investment products can be customized based on the individual tax-return as well as comparisons with a benchmark group¹⁶. Thus, the information on the taxpayer's financial profile singly as well as in combination with other information serves to leverage return-filing for other value-added services. *Ameritax* -- a subsidiary of American Express IDS Division -- is well positioned to exploit the information content in the tax-returns (of consenting taxpayers). In such a setup, information on earnings and tax liabilities of a taxpayer could be benchmarked against a comparative sample to create the capability to customize specific investment products that reduce tax liabilities in the subsequent year. The results of a pilot test indicates that this could be a potentially attractive approach.

While electronic filing is not necessary to leverage the information content in the return, it is clear from test market reactions that taxpayers feel comfortable to let an organization whom they trust not only file their returns electronically but also capture the relevant data [with their consent] to provide additional value-added services. Traditionally, the return-preparers saw their service as a stand-alone, annual event with little potential for offering other information-based services. With electronic filing, return-preparation is being bundled with other value-added services given the richness of information contained in the tax-return. Although the economic benefits of the strategic options along this trajectory cannot be obtained, one banking executive remarked during the research, "The one thing that Americans do diligently is to file their tax-returns, which is the most accurate profile

of their financial health that I can get; if I can leverage that activity to provide additional services, it would be the single best source of competitive advantage.”

As depicted in Figure 5, the two trajectories are complementary and that the strategy at the other end is termed as -- *electronic integration* -- which *maximally exploits the capabilities of the technology infrastructure as well as the information content of the exchange to influence the nature of products and services.*

The taxpayer considers the filing of tax-return as a statutory requirement as well as a means to receive the refund due. Indeed, one can argue that the basic function of the return-preparation service pertains less to the fulfillment of the statutory requirements and more to the goal of receiving the refunds faster. As noted earlier, strategic adjustment allows the business to differentiate on the basis of ‘quicker- refund’ -- given that the IRS processes refunds faster when returns are filed electronically than in a paper-form. But, what prevents a business in the private sector offering ‘instant-refund’ at the time of filing the return? Traditionally, the completed returns are mailed through USPS, and the taxpayer receives the refund checks in the mail. Although the amount of refund-due is known precisely for every taxpayer at the end of the return-preparation activity, there has been no easy mechanism to offer ‘instant-refund’ since the refund check is mailed directly to the taxpayer.

With electronic filing coupled with direct electronic fund transfer of the refund amount to a designated account, it is possible to provide the taxpayer with the refund amount as a loan-product on filing the return with the IRS. Through electronic filing, the tax preparer (or the filer) exploits the capabilities of (a) the two-way communication between the electronic filer and the IRS to verify the receipt of return at the IRS service center; and (b) return-preparation software to verify that the return itself is free of computational error, thereby ensuring that the refund requested will most surely be received from the US Treasury¹⁷ to the designated bank account. Given the assurance that the tax-return received by the IRS is error-free and that the refund due will be made electronically, the ‘filer’ could offer instant-refunds or what is colloquially known as ‘refund anticipation loans’ to the taxpayer, who is owed a refund. The direct deposit feature is critical as it ensures that the refund will be deposited to the lender's bank account and can be set off against the loan.

This strategy is based on the integration of *information content* in the tax forms that have been accurately prepared, and transmitted to the IRS and the virtual assurance that the electronic refund will be designated to the correct direct-deposit

account enforced by the *technology infrastructure*. Since 75% of the taxpayers receive refunds at the end of a given tax-year coupled with the prevalent consumer fear of not receiving a timely or any refund from the IRS, the market for loans against the collateral of tax-refunds is likely to be significant and profitable. Based on an average refund of \$900 and 75 million taxpayers receiving refunds, the size of the market for instant-refund is about \$65 billion -- significant enough to attract the attention of the retail banking community. In the current tax season (1990), the service charge for obtaining the loan is in the range of \$25--\$40, which is considerably higher than the cost of capital for the lending agencies. Our view is that the taxpayers are attracted to this service mainly because of fear that they may not get the refund and are prepared to transfer the risk to a third-party like the *Greenwood Trust Company* (a part of the *Sears Financial Network* that offers the *Discover* card). Further, since the taxpayers over-withhold their tax liabilities at source as a form of forced savings, the refund-check is typically apportioned for some durables or services. An additional value-added service rooted in instant-refund could be to provide special coupons for specific classes of durables and services (say, within the *Sears* network that offers a wide range of products and services or as a partnership among complementary businesses).

Thus an electronic integration strategy significantly transforms the business scope of return- preparers from the simple task of preparing the return towards a combination of return-preparation and other related value-added activities. We believe that the balance is clearly swinging away from return-preparation (which can now be automated through return-preparation software) towards filing and value-added services. Thus, the strategic nature of electronic integration lies in the creative interplay between the technological capabilities as well as the information content of the exchange to reconceptualize the scope of business in the changed marketplace.

Electronic Integration and Business Network Reconfiguration

We now develop a network of business relationships as a result of strategic responses to the electronic filing initiatives with a view to contrast with the traditional network depicted in Figure 3. The reconfiguration of the business network is discussed in terms of four categories: (a) addition of nodes in the business network; (b) transformation of the nodes; (c) addition of business linkages; and (d) transformation of the business linkages. The new business network is represented in Figure 6, and the key issues are discussed below.

Figure 6: A Schematic Representation of the Network of Relationships in the Changed Marketplace

	Taxpayers	Tax Return Preparer	USPS	IRS	Banks	Electronic Filers	Investment Services	Retail Outlets
Taxpayers	xx	A /B --> C	A	A	A/B -->C	X	C	A
Tax Return Preparer	A /B --> C	xx	X	A	D	D	D	A/C
USPS	A	X	xx	X	X	X	X	X
IRS	A	A	X	xx	X	X	X	X
Banks	A/B -->C	X	X	X	xx	C	C/D	X
Electronic Filers	X	C/D	X	C	C/D	xx	C/D	C
Investment Services	C	X	X	X	C/D	B	xx	X
Retail Outlets	A	A/C	X	X	X	C/D	X	xx

I. Addition of Nodes in the Business Network. From the preceding discussion, it is apparent that new sources of competitive advantage have emerged in this marketplace. As shown in Figure 6, three new major nodes have emerged: (a) electronic return-filers -- distinct from the return-preparers; (b) retail outlets -- that play an important role of collecting returns for centralized processing and filing; and (c) investment services -- involved in leveraging the information content for value-added services. We believe that the electronic filer to be the most critical role given the centrality of filing in the changing marketplace. Collectively, these nodes provide critical resources for potentially enlarging business scope from simple return-preparation to larger retail financial services.

II. Transformation of Nodes. The second issue relates to the transformation of existing nodes or roles. The role of the USPS has diminished given that the taxpayer is not provided with a confirmation of receipt of the return by the IRS that is now enabled by the electronic filing process; and electronic filing has created new levers for value-added services that could not be done in the traditional node of mailing

the return. Further, the return-preparation activity is transformed from a human-based, labor-intensive task towards computerized, software-driven process with opportunities to provide value-added services like tax-planning and investment advice.

III. Emergence of New Linkages. Figure 3 depicted a set of discrete linkages in the traditional marketplace, while electronic filing creates new linkages in the business network. Even a casual perusal of Figures 3 and 6 will highlight the emergence of new linkages, where three types of new linkages require discussion: One, the need to provide a complete set of services involving return-preparation and return-filing requires formal business linkages between return-preparers and electronic filers, especially if the return-preparers choose not to invest in the required technological infrastructure. This may be particularly relevant for smaller preparers -- who may collaborate in non-overlapping geographical territories to share the communication network for electronic filing. Two, the integration now possible between return-preparation and the instant refunds creates the need for formal alliances between return-preparers and retail banks¹⁸. Although these two players existed in the traditional marketplace, as shown in Figure 3, there was no linkage between them. Three, the retail outlets like *7-eleven*, *Revco* stores and others now have new linkages through their role in collecting self-prepared returns for Instatax (or, similar players) to reap economies of scale in electronic filing.

IV. Transformation of Prior Linkages. The transformation of prior linkages has occurred in a variety of areas: One, the linkage between taxpayer and the return-preparer has changed from the simple task of completing the return towards one of providing a more complex set of services including return-filing, confirmation of receipt by IRS, instant refund (if desired) and other financial services. While the scope of this enlarged service may require other players, the return-preparer could act as a conduit between the taxpayer and the broader set of players. Two, the linkage between the taxpayer and the retail bank has changed from the standard deposit of refund check to one involving return-filing for self-prepared returns (e.g., *Citibank*), instant refunds as well as possible database support for individual tax-returns.

Strategic Implications

The following strategic implications emerge from the above analysis of the impact of electronic filing of tax-returns on the market for return-preparation services:

I. Electronic Integration is More than Electronic Data Interchange. There is a general misconception that electronic integration is concerned with the efficient interchange of data among multiple partners (i.e., EDI). If so, then we should see minimal variations in the pattern of strategic responses to the electronic filing initiative. What we observe in the changing marketplace is a conscious attempt by businesses to leverage the common EDI platform -- specified by the IRS protocols for electronic filing of tax-returns -- to differentiate their business strategies. The implication is that it is myopic to view electronic integration as merely information-exchange at an operational level since it camouflages the business opportunities through technology-leverage or information-leverage or both.

Further, electronic integration is distinct from the different forms of interorganizational systems (IOS) -- which build on these common EDI standards (when necessary) to design and deploy different *applications* that integrate multiple organizations¹⁹. Thus, there could be multiple IOS with different functionalities across many sets of partners. For example, not all the airline reservation systems have the same set of functionalities for the travel agencies although they could agree on the standards for information-exchange. Thus, electronic integration, as we conceptualize it, refers to the *strategic choices* made by each participant to exploit the IOS applications and functionalities for their specific business purposes. In other words, the applications within an IOS could be the same for multiple organizations, but the specific strategic orientation adopted to exploit them could be different. For example, within the Baxter's *ASAP* system, the nature of business relationships between Baxter and the different types of hospitals are distinct, thereby exhibiting differential strategic emphasis to the marketplace given the same applications and functionalities of the system.

II. Electronic Integration is More than Automation of Tasks. The second implication differentiates automation from electronic integration. Specifically, in this research, this is highlighted by the distinction between OCR and electronic filing. For example, automation through OCR requires changes in business processes internal to the IRS, but it has no appreciable impact on the external marketplace since the processes of return-preparation and filing are unchanged. In contrast, the electronic filing initiative creates a two-way information link (given

the acknowledgement of receipt of the return by the IRS) between the filer and the IRS. This link impacts directly on the business processes and the pattern of business relationships of the return-preparers. The two-way integration renders a set of potential benefits not possible through automation activities. Thus, electronic integration is more than automation of the tasks at the level of the two independent organizations.

III. Electronic Integration Redefines the Roles in the Business Network. The third implication is that electronic interconnection of business processes across multiple organizations alters the roles played by the different partners. In this research, the relative importance of return-preparation and return-filing is shifted with newer capabilities to leverage filing for value-added activities. Similarly the standard task of filing the return through USPS has been modified into a set of new value-added activities through electronic filing (e.g., refund-due returns could trigger referrals to banks to offer instant refunds). Finally, new roles like the retail stores and banks have emerged to increase the competitive intensity in the marketplace. Thus, electronic integration either directly or indirectly affects every significant competitor in the marketplace.

IV. The Potential Impact of Electronic Integration on Business Competencies is Varied. Extending the arguments made in the literature on technological discontinuity²⁰, we argue that the potential impact of electronic integration on business competencies can be classified into three categories: (a) competence-creating; (b) competence-enhancing; and (c) competence-destroying. At one-end is the *competence-creating* category -- which highlights that electronic integration creates new roles and redefines the nature of business relationships among traditional players as well as new players. In the market discussed above, the competence-creating impact can be seen in the case of new entrants like: *Electronic Filing Centers, Inc.*, and *Instatax*. They had no role to play in the traditional marketplace, but electronic filing created the opportunity to leverage this competency for new sources of revenue in the changing marketplace.

At the other-end is the *competence-destroying* category -- which reflects the condition that electronic integration could render some of the traditional bases of competencies irrelevant. Specifically, the expectation is that the human skills in preparing simple tax-returns (e.g., Form 1040EZ) is eroded by the codification of the required knowledge in tax-return software. At a minor level, the role of USPS is considerably diminished as electronic filing becomes a serious alternative.

The third category -- competence-enhancing -- is in between the other two and becomes critical since electronic integration could enhance the significance of some existing sources of competitive advantage. For example, *Citibank* could now leverage their impressive IT infrastructure to develop a more integrated retail financial product (including help in return-preparation and filing). Thus, while *Citibank* had its IT infrastructure for a long time, it had a relatively minor (if not non-existent) role in the return-preparation activity prior to electronic filing. Now, with the electronic filing initiative, this competency is emerging more important than before. Similarly, *H&R Block* could enhance their business competencies through their intra-corporate linkage with *Compuserve* to develop alternate delivery channels for their service; and *American Express* could enhance their investment services with stronger links to electronic return-preparation and filing. The implication is that the same integration initiative could create some new sources of competencies, enhance some of the existing ones, while destroying other sources.

V. Effective Electronic Integration Leverages the Technological Capability and the Information Content. A fifth implication, and one that has been highlighted throughout the paper, is that effective strategies for electronic integration is predicated on the exploitation of both the *technological infrastructure* -- reduction in time and cost to access information sources and process transactions across multiple organizations -- and the *information asset* -- new sources of data or enhanced information attributes such as accuracy, timeliness, reliability, etc. In many cases, the benefits from electronic integration lies in the modifies set of information attributes that are often overlooked. The real challenge for the strategists in exploiting the emerging opportunities for electronic integration is to uncover potential sources of information attributes that could be leveraged through the deployment of an appropriate technological infrastructure. Beyond the context of the present setting, we believe that the real sources of advantage in settings such as: McKesson's *Economost*, Baxter's *ASAP*, and American Airlines *SABRE* reservation systems lie in their exploitation of their respective I.T. infrastructure as well as leverage key attributes of information in their transactions for offering value-added services.

VI. Strategies For Electronic Integration Compels Effective Management of Multiple Relationships. The final implication is that electronic integration brings into sharp focus the interdependencies between various players for providing new services as well as newer governance mechanisms. From the case of managing

within a hierarchy (organization), it becomes critical to design appropriate governance structures to manage business relationships with new partners. The new structural mechanisms include: *bilateral governance* (e.g., dyadic vertical or horizontal partnerships not under a single parent) and *trilateral governance* (e.g., multi-partner relationships under a single arbitrator organization)²¹. For example, an integrated service involving return-preparation, return-filing and financial services could now be delivered through dyadic vertical partnerships between return-preparer and a financial institution with the electronic filing capability. Similarly, the trilateral governance mode is reflected in the case of an association of independent CPAs who could use services like *Electronic Filing Centers, Inc.* to enlarge their business scope to include filing and value-added services. The marketplace is on the verge of being radically transformed as many new governance mechanisms are emerging, and the few illustrations provided in this paper are only the tip of the iceberg. The strategic challenge is to identify appropriate governance modes for competing in markets impacted by electronic integration initiatives.

Conclusions

Electronic integration -- namely, business linkages among multiple independent organizations using the power of computers and communications technology -- is an area of challenge to business managers. This paper described the electronic filing of tax-returns initiative by the IRS and the consequent impact on the business strategies of the key players in the marketplace for return-preparation services. It highlighted that electronic integration alters the roles and relationships and that effective strategies are predicated on the successful leveraging of technology infrastructure as well as the information content of the exchange. Our expectation is that this analysis and conclusions will be of use to not only the managers directly concerned with this marketplace but also managers in other settings that might be subjected to various forms of electronic integration activities. Effective transformation of the organization including inevitable resistance to change on the part of various individuals -- both within the organization and in the marketplace -- is a serious strategic management challenge.

Box (insert)**□ From Internal Automation To Electronic Filing**

A key objective of the IRS is to collect the proper amount of tax revenues at the least cost to the public in a timely manner. As can be easily imagined, collection of tax revenue is both information- and labor- intensive. In 1985, over \$1 billion dollars – a third of the budget – was spent on processing tax returns for revenue collection. A significant proportion of this cost was allocated to the labor intensive process of handling paper-returns and data transcription to a machine readable form. The data transcription process was also prone to errors leading to costly delays in returns processing and the issue of refund checks. Given the high cost of return processing, identification of new ways to improve efficiency through automating tax return processing has been a major challenge within IRS.

Optical Character Recognition as Automation of Tax Return Processing. An initial technological innovation adopted by the IRS was the *use of optical character recognition (OCR)* at the service centers for return processing. This led to the development of the 'answer-sheet' approach for return-preparation and the design of the 1040EZ and the 1040A schedules, with the block coding answer format. In 1985, 36% of the 1040EZ forms, 50% of all the 1099 family of forms, and all Federal Tax Deposit forms were optically scanned and interpreted using OCR software.

While the use of OCR resulted in some increases in administrative efficiency by substituting technology for labor in one area of processing within the IRS, it did not radically alter all the stages of processing within the IRS. More importantly, it did not influence the nature of the relationships between the IRS and the taxpaying community, namely: the return-preparer nor the taxpayer. In other words, the mode of return-preparation and data exchange between the taxpayer and IRS were not transformed. Returns were still submitted on paper and were either handwritten or occasionally printed at the taxpayer-end from a computer. Where feasible, the data was transcribed at the IRS end through an OCR system. Thus, this technology represented a minor discontinuity in terms of a shift from human-based transcription of data for a fraction of the returns, it *did not* change the activities external to the marketplace represented in Figure 1. There was a general feeling that despite some reductions in data transcription costs and errors, OCR did not eliminate several components of the overall costs of handling, sorting and storing paper returns.

Electronic Filing: Beyond OCR The challenge, then, was to develop a system that would capture the relevant taxpayer information electronically at the time of return-preparation. This would be enabled by a system that would permit computer-to-computer exchange of data between the taxpaying community and the IRS through the *use of electronic filing of tax returns*. In 1986, IRS successfully completed the pilot test to demonstrate the technical feasibility in three metropolitan areas: Phoenix, AZ, Cincinnati, OH, and Raleigh-Durham-Fayetteville, NC, and by the tax year 1988, the electronic filing project had expanded to over a third of the country with nearly 600,000 electronic returns filed by over 2500 return-preparers. The service is available nationwide this year (1990) and the IRS projects over 30 million tax returns will be electronically filed annually by 1996. The major incentive for the consumer to file electronically is that the refunds would be received three-to-four weeks sooner than filed through traditional paper form. For IRS, this shift away from paper-returns is expected to generate over \$200 Million in cumulative net savings by 1996.

Electronic filing is currently restricted to authorized 'filers' – who transmit returns directly to the IRS computers using either modems and telephone lines or a value added packet switched network and are responsible for separately filing the W-2 and other relevant forms. The returns are prepared and transmitted in accordance to formats pre-specified by the IRS, who test sample returns prior to authorizing an electronic filer. In addition to electronic filing, the IRS in cooperation with the Financial Management Services of the Treasury Department is implementing electronic funds transfer of the refunds to banks and other approved deposit institutions.

Notes

¹ See for instance, McFarlan, F.W., "Information Technology Changes the Way You Compete" *Harvard Business Review*, 1984; Rockart, J.R., and M.S. Scott Morton, "Implications of Information Technology on Corporate Strategy" *Interfaces*, 1984; Wiseman, Charles, *Strategy and Computers*. Dow Jones --Irwin, 1985.

²For an overview, see Barrett, Stephanie, and Benn Konsynski (1982). "Inter-organization information sharing systems". *MIS Quarterly*, Special Issue, 1982.

³ See for instance, Cash, J.I. and Benn Konsynski, (1985), "Is redraws competitive boundaries," *Harvard Business Review*, 63 (2), 134-142. Johnston, H.R., and M.R. Vitale (1988) Creating competitive advantage with interorganizational information systems. *MIS Quarterly*, June, 153-165.

⁴ (Bakos, 1987; Malone, Yates, and Benjamin, 1987)

⁵ For an overview of this system from a historical perspective, see Copeland, D.G., and J.L. McKenney. (1988) Airline reservation systems: Lessons from history, *MIS Quarterly*, September, 353-370.

⁶ For an overview of this system, see Harvard Business School cases, 1985, 1988.

⁷ For an overview of this system, see Clemons, Eric K. and Michael Row (1988), "McKesson Drug Company: A Case Study of Economost -- A Strategic Information System". *Journal of Management Information Systems*. Summer 1988 Vol 5 No. 1.

⁸ While H&R Block is a diversified firm, the tax preparation division is autonomous from other divisions, which include Compuserve; the tax return-preparation operations are composed of both corporate-owned offices as well as franchises.

⁹ Strategic groups refer to groups of firms adopting strategies that are similar along some underlying dimensions, and can be derived using several different approaches; for the purpose of this paper these are developed inductively based on discussions and interviews with key informants in the industry.

¹⁰ See especially, *The economic Institutions of Capitalism*. Free Press, 1985.

¹¹In a study of over 400 return-preparers, we found that this initiative is a major reason for the preparers to consider computerization.

¹² In the 1970s, Merrill Lynch created a financial product called Cash Management Account through their technological infrastructure that redefined the nature of retail financial services.

¹³According to *New York Times* (February 10, 1990), Instatax has 7000 locations nationwide to collect tax-returns for electronic processing and filing with the IRS.

¹⁴One estimate is that as much as a million returns could be filed electronically from non-traditional sources at a total revenue of about \$25 million.

¹⁵ A working paper analyzing this issue is under preparation.

¹⁶It is necessary to obtain specific release from the taxpayers to use the return-data for other purposes, but the availability of data in an electronic form enhances the ease of use.

¹⁷ It is important to note that the IRS will refund the amount due in an error-free tax return but it does not mean that a particular taxpayer may not be audited at a later point in time. The tax filing process is distinguished from the audit process.

¹⁸Return-preparers are prohibited from offering financial services. Thus, one legal entity may not be both a paid-preparer and a banker; however, return-preparers could form alliances or formal contracts to provide pre-qualified leads for retail banks to initiate loans.

¹⁹for a good classification of IOS, see Konsynski and Warbelow, 1989.

²⁰ See for instance, Tushman, Michael and Anderson, "Technological Discontinuity and Organizational Environments." *Administrative Science Quarterly*, 1986.

²¹For an overview of these governance mechanisms and their relative roles, see Williamson, Oliver (1985); for a discussion of microeconomic issues pertaining to the I.T. characteristics, see Garth Saloner and Julio Rotemberg, *IT and Strategic Advantage, Management in the 1990s Research Program Book*. MIT. (1989).

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