From Peripheral To Platform:

MFP Software Development Tools and Xerox's Extensible Interface Platform

A White Paper

Brian Bissett
Bissett Communications Corp.
www.mfpreport.com

(562) 809-8917
12844 Berkhamsted Street
Cerritos, California 90703

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Introduction

This white paper has been prepared on behalf of Xerox Corporation by Bissett Communications Corporation, the publisher of *The MFP Report* newsletter. It is intended to explain, analyze and provide context for understanding Xerox's new Extensible Interface Platform. "EIP" is a Web services application development environment that enables software developers to create server-based applications that seamlessly interact with existing and future Xerox WorkCentre office MFPs and their users via the device control panel.

This white paper is divided into four sections:

- The first section provides a brief historical review of the MFP market, highlighting convergence between document management and MFP-based document capture as a backdrop for the development of MFP software development tools.

- The second section addresses MFP software development platforms in greater depth, including their relative merits of different technical approaches. Also assessed are important business considerations regarding the way that vendors bring their MFP software tools to market.

- The third section provides a detailed assessment of EIP, including its origins, development, components, capabilities and device dependency. Also included is a comparison of EIP to other MFP software application platforms.

- The fourth section focuses on Xerox's EIP business strategy and go-to-market plans, and compares Xerox's approach to that of key competitors.

The white paper concludes with an overall assessment of EIP, pointing to the challenges and opportunities that Xerox faces in the MFP application sphere.

I. The MFP Industry and Market Context

In the context of this document, an MFP is a hardcopy device that is connected to a network and provides two or more functions among printing, scanning, copying and fax. For the most part, such MFPs are toner-based machines, either color or monochrome. However, there is emerging an array of solid ink and liquid inkjet office MFPs that will become equally relevant to this topic.

The transition from the old analog copier days to the world of digital multifunctionality is largely complete. New analog copiers are no longer manufactured. Two-thirds of new monochrome digital copiers and virtually all color copiers are used today as connected MFPs. It is becoming the norm for some type of network printing and network scanning to be standard in the base configuration of MFPs sold in the office market.

Consistent with this decade-long trend, the volume of prints — as opposed to copies — continues to grow as a portion of total document output on office MFPs. Networked MFPs often output 25% more pages than similar standalone copiers. And with the rapid shift toward color and color-enabled MFPs, the volume of prints on these devices can be expected to exceed the volume of copies.

This does not mean the office imaging market has reached a steady state. In fact, the MFP market is today in the throes of another transition, one that is more striking, dynamic, complex and challenging than was the arrival of multifunctionality. This is the transition from an MFP being another type of networked peripheral appreciated foremost for printing, to the rise of the MFP as a software platform on or through which document-oriented applications are accessed by users in a walk-up office environment. In addition, the transition to color and heightened awareness of security are together creating new and broader interest in document accounting and secure device access.

Whereas the first wave of multifunctionality was driven by printing, this second wave is being driven primarily by the scanning functionality of these devices. Simple but powerful scan to e-mail first gave credibility to networked MFPs as capture devices. In the past few years, MFP-based scanning has benefited from a "virtuous circle" of mutually reinforcing trends. These include rising interest in document management as a result of regulatory and disaster recovery concerns; increased availability of document applications suited to mid-sized businesses; the spread of distributed capture as existing imaging installations grow; acceptance of ad hoc text search as a result of companies like Google; and growing interest in content management on the part of leading vendors, from Microsoft and IBM, to EMC and Oracle.

Fortunately, the quality and capabilities of the scan function on office MFPs continue to improve. For a long list of reasons, customers find that MFPs are excellent document scanners. The shift toward color in the multifunction market is further increasing the demand for scanning, even as the role of copying and fax decreases. What vendors, software companies and end users now seek is a powerful but flexible array of scanning choices that integrate MFPs into office workflows while maintaining the "green button" simplicity of copiers.

II. MFP Application Development Platforms

A. The Evolution of MFP Software

The functionality required for printing in a small office or an enterprise has been amply defined for many years. Print drivers are part of the operating system. Printer hardware companies, printing technology suppliers and industry bodies have specified the requirements for printing any document in any environment, for managing print devices, and for administering and controlling the printing process.

This is far from true with regard to scanning, particularly on a network. The key difference is important to grasp. Printing entails receiving from a computer a stream of existing data and instructions on how to portray the data on paper. In contrast, scanning engenders creating new data in the form of images. It is necessary when scanning that users designate where these images are to be sent and what is to be done with them.

When scanning on MFPs first became viable a decade ago, the only scanning protocols (initially TWAIN or ISIS and later WIA) presumed that scanners were always attached to PCs. Users could only "pull" images from the scanner to the PC and then immediately determine what to do with those images. The driver was usually supplied by the scanner vendor, and there were often subtle incompatibilities between scanner features and imaging applications.

The challenge presented when scanning on a network-attached MFP is that there is no direct connection between the MFP and a computer. Vendors first attempted to meet this challenge by mimicking the PC scanning model. Users could scan a document on an MFP and store the images inside the device or place them in a folder on the network. It was not possible to associate data with the images, which meant that users needed manually to locate, retrieve and redirect the images to the intended application or destination. Equally importantly, early MFP scanning solutions offered little in the way of security when it came to authenticating, tracking or controlling use of the scan function.

Gradually, MFP vendors improved the user experience for one particular type of MFP-based scanning: sending scanned images directly from an MFP as attachments to standard e-mail messages. This capability addressed a need that customers previously had not articulated but which delivered clear value. Scanning to e-mail dramatically increased interest in ad hoc document image capture in the general office. Today's mature scan to e-mail solutions effectively leverage existing e-mail directory and authentication services.

To address the need for simple scanning from a networked MFP to a wider variety of applications beyond e-mail, some vendors and their partners began developing server-based software. These solutions took one of several forms.

One approach was a server-based utility to create scan "workflows" describing scan parameters and destinations, which could then be invoked from the MFP. This approach is synonymous with Xerox's former CentreWare Scanning Services. Another approach was tight integration between a third-party server with its own user interface and links to other applications. This approach was epitomized by the relationships between eCopy and Canon and between Notable Solutions and HP. A third approach was in the form of a vendor's own server application that supported limited user interaction from the MFP control panel (such as Ricoh's GlobalScan) or via a paper coversheet (such as Xerox's FlowPort). And yet another approach, typified by Omtool's AccuRoute, used MFPs as unintelligent scanners and relied on paper coversheets generated at the desktop.

Any of these approaches had one or more key shortcomings. Among the issues were a relatively high price, particularly for a dedicated server and separate display; poor ease-of-use and flexibility associated with limited control panel integration or paper coversheets; minimal ability to track or control scanning usage; and the lack of robust developer tools for seamless integration with third-party applications.

For the most part, vendors that developed early server-based MFP scanning applications have either discontinued such software (e.g., Xerox) or now downplay the role of that software (e.g., Ricoh, HP) in favor of tighter integration via emerging MFP development platforms. While some MFP vendors continue to bundle simple network scanner drivers, this approach has gained little traction.

These shortcomings led to the launch in 2003 of the first integrated MFP software development platform: Canon's Multifunction Embedded Application Platform. MEAP is a Java-based software environment that can be used to create applications that reside inside Canon MFPs. The first MEAP application became available in 2004. However, due primarily to certain business issues, MEAP has fostered a fairly small number of MFP software applications and partnerships.

Other MFP vendors have followed with their own platforms. Sharp announced its Web-based Open Systems Architecture (OSA) in the fall of 2004. Ricoh, which had provided a handful of independent software vendors (ISVs) with a 'C' software toolkit for its MFPs in 2003, launched its Java-based Embedded Software Architecture (ESA) in late 2004. Fuji Xerox followed at the end of 2004 with a Web-based MFP software platform called Apeos iiX. Today, nearly every vendor has promised, previewed or announced some form of MFP software development platform.

A word here about HP's Chai platform is appropriate. HP announced Chai, which is an HP proprietary form of Java, back in 1999. While Chai was initially aimed at a broad range of low-memory "Internet appliances," it was subsequently supported in most of HP's LaserJet printers and LaserJet MFPs. However, for a variety of technical and marketing reasons, Chai has maintained a low profile in the printer market, and HP has not heavily promoted Chai for its office MFPs.

Meanwhile, a handful of software companies have carved out a solid market amidst this confusion by developing flexible "middleware" solutions for MFP scanning. These companies — primarily eCopy but also Notable Solutions and EFI — have established partnerships with multiple MFP vendors and ISVs. These middleware vendors, along with document accounting companies such as Equitrac, have routinely been the first developers to work with new software tools emerging from MFP manufacturers.

B. MFP Software beyond Scanning

While network scanning is by far the largest and most mainstream application area to benefit from MFP-based software development, there are two other areas that warrant mentioning: document accounting and security.

Document accounting refers to software and systems that collect, track and report usage for MFPs, as well as for printers, copiers and fax machines. Historically, document accounting was focused on keeping track of copier usage and allocating the cost of copies, typically to external parties. Document accounting has a long history in the legal market and in certain other vertical markets, such as education. Equitrac has for many years been the market share leader in this segment. With the shift from copying to printing and now to scanning as well, with greater IT awareness of the costs associated with document output, and with the spread of color devices that are more costly to operate, there has been increasing interest in document accounting in a broader range of companies and industries.

In the days of standalone analog technology, document accounting required that highly specialized hardware be developed and attached to each copier. The advent of networked MFPs made it easier to use server-based software to perform the document accounting function. However, with the development of MFP application platforms, document accounting vendors are now able to develop more powerful software, improve the walk-up user experience, provide greater customization, and offer better integration with other applications.

Security in an MFP software context encompasses a lengthy and not often well-understood set of features and capabilities. The added security features provided by MFP application platforms are somewhat less interesting in the context of printing than they are in terms of complementing the scan and fax functions. Nonetheless, MFP platforms do provide for printing new capabilities that improve the walk-up user experience at the control panel; feature greater personalization (e.g., users can see just their own secure print jobs to be released at the MFP); and maintain an audit trail of jobs that have been printed, when, where and by whom.

The interplay between new MFP platform security features and scanning or computer fax is an interesting one. Most of the added benefits relate to the same kinds of things enumerated above with regard to printing. These include a superior user experience at the MFP control panel, and providing a detailed audit trail of network fax document delivery.

C. MFP Application Development Alternatives

There are today two main alternatives for creating MFP software development platforms: an embedded Java approach and a Web services/Web browser approach. Each has certain strengths and limitations from the perspective of software developers and customers.

The Java approach in MFP software development is exemplified by Canon's MEAP and Ricoh's ESA. Java is a widely accessible and powerful programming environment, and there are many trained Java programmers. One or more Java applications can be developed to reside inside an MFP. An application may perform a specific process (e.g., convert scanned images to searchable PDF files), or it may link images and data from the MFP to an external application.

While Java is easier to use than traditional programming languages, it requires trained programmers with a reasonable level of skill and experience. Java applications can be resource intensive in terms of the processing power and memory they require from the MFP in which they reside. The Java approach has also proven cumbersome when it comes to designing user interface screens for display on the MFP control panel. Lastly, because a Java application must be installed inside each MFP where it is used, this approach can create significant administrative overhead in terms of disseminating, managing and updating the MFP applications.

The alternative Web services approach to MFP software development is epitomized by Sharp's OSA, Fuji Xerox's Apeos iiX, and by Xerox's new EIP. This approach leverages international Web standards such as HTML, XML, WSDL, AJAX and SOAP to create applications, to link applications with each other, to develop MFP user interface screens, and to manage all of this software. It is worth noting that when development began several years ago on Java-based MFP application platforms, a mature and robust embedded Web server with a small footprint — a prerequisite for a successful Web services platform — was not readily available. That is no longer the case.

Today, Web services development is less demanding and less complex than Java programming. A Web-oriented MFP platform is thus accessible to a wider range of developers, including corporate developers and technology resellers. Likewise, the time required to develop a Web-oriented MFP application is less than the time needed to create a Java application. The Web approach also has the advantage of being able to leverage a wide range of development tools.

It is important to point out that if a particular task (e.g., OCR) is best achieved through programming in Java or another language, such programming can still be integrated as part of a Web services approach. Although it sounds a bit confusing, the Web pages that are displayed on the MFP control panel can themselves invoke Java script applications for particular tasks or processes, much in the way that a browser on a PC might run a Flash video or display a PDF document.

There are other advantages to using Web services for MFP application development and using Web browser technology to display information on an MFP control panel. Foremost, it is easier to develop highly customized and intuitive user screens on the control panel with a browser. Because the applications do not run inside the MFP, the embedded browser needs only to display the Web pages. This reduces the need for processing power or memory in the device. Likewise, it enables MFP applications to be used in conjunction with lower-end or less expensive MFPs that lack the resources to run embedded Java applications. It is also far more practical to have multiple applications running on a server (or each on its own server) rather having all of them run inside an MFP. One final but very important advantage is that, because the software resides on a server, it is easier to deploy, manage and update in an enterprise environment.

One possible downside to a Web based approach is that if the network goes down, the application cannot be accessed. Of course, if the network goes down, a Java application on an MFP is unable to send images over the network, and the printer function is also not available. Another potential issue with a Web-based approach is that a large number of MFPs interacting with an application on a server might create a bottleneck. However, in the majority of applications, one or more servers can be sized appropriately for such demands. In addition, the advanced image compression capability now found in most MFPs greatly reduces the magnitude of image traffic on the network.

In summary, a Web technology approach to developing server-based MFP applications has many compelling advantages and few real disadvantages as compared to creating Java applications that reside inside an MFP. In fact, it would not be surprising to see some of the early Java pioneers in MFP application development consider shifting over time towards a Web services approach.

D. MFP Hardware Considerations

Beyond the type of software development environment and tools, two issues relating to MFP hardware are important to consider. These are the MFP controller, which is the “brains” of the MFP device, and the MFP control panel.

In terms of the controller, the key concerns relate to performance, architecture and — for want of a better term — vintage. As already mentioned, the power available from the processor used in the controller can be an issue for a Java-based approach in that the same processor is used to operate the MFP hardware and to host MFP applications.

The issue of controller architecture is more subtle. It is advantageous that the controller integrate all MFP imaging functions and share access to the same processor, memory and hard drive. Such architectures are the norm in most MFPs sold today. However, this does mean that an MFP configured with an external print controller (typically from EFI), will likely still require the vendor’s own embedded MFP controller in order to integrate with other applications.

As for the "vintage" of the controller, the real issue is to what degree a vendor's software platform is compatible with its earlier MFPs. Generally, emerging MFP software platforms have not been backwards compatible with most of a vendor's previous models.

In terms of the MFP control panel, the main requirement is that the liquid crystal display (LCD) be of a sufficient size to reasonably portray application-oriented screens. A large, high resolution, color LCD is the optimal choice. In the MFP industry, the major Java-based application platforms have been designed to support a specific control panel size and design. Conversely, some Web-based software platforms can support a wider array of control panels and LCDs.

E. Go-to-Market Strategies

One of the major challenges for vendors and for the MFP industry as a whole is to appreciate that good technology — while a necessary condition for transforming MFPs into application platforms — is not itself sufficient to assure success. Just as important are a vendor's business strategy, partnering activities and go-to-market plans.

The first issue to consider is whether the MFP vendor has an "open door" in working with ISVs. Some vendors require a prospective partner to provide a detailed description of the application and why it wishes to work with that vendor. Also important are the cost to the ISV to access the MFP software tools, and the nature and cost of the development support that the ISV receives.

One of the most important issues is whether a vendor charges a royalty on the MFP software that the ISV develops. Given that major companies such as Microsoft and IBM do not charge royalties, it is questionable whether an MFP vendor can. A related issue is whether the vendor requires that an ISV application be certified before it is deemed compatible with the vendor's MFPs. If certification is required, the fee for certification and the time required to obtain certification are relevant.

Casting a shadow over all of these concerns is the fundamental issue of whether an MFP vendor is developing its own applications, and whether such software competes — or is perceived by the ISV as competing — with its own applications. Hardware vendors are strongly advised to limit their own development efforts to "infrastructure" applications, leaving ISVs to develop software with greater added value.

Even if an MFP vendor does an exemplary job in recruiting numerous credible ISVs, challenges remain with regard to how effectively the vendor partners with these ISVs in selling and marketing their respective products.

The approach to sales is especially critical. Historically, the most successful software in the MFP market has been resold by an MFP vendor or even relabeled by the vendor. Examples include Canon's relationship with eCopy; Xerox's relationships with Captaris, Equitrac, Nuance and Omtool; HP's relationship with Notable Solutions; and Ricoh's relationship with Equitrac. The success of these partnerships reflects the early stage in the MFP solutions business when these arrangements were undertaken. It will not be tenable ongoing for MFP vendors to sell and support all future applications developed by all partners.

The other critical sales issue is the dissimilitude in channels and business norms between the MFP industry and the document software market. MFPs are sold primarily through independent office equipment dealers and direct sales branches. The equipment is typically leased, often on the basis of a per-page charge that covers hardware, software, supplies and service. Conversely, document-oriented software is sold by value-added resellers and integrators, as well as through direct sales. Typically, such software is bundled with higher-value services relating to customization, integration, support and upgrades.

To the extent that an MFP vendor and an ISV both utilize direct sales channels, joint selling efforts and programs should be more feasible. When MFP hardware and ISV software are sold through different channels, the task of creating workable programs and procedures is more complex. Nonetheless, in both instances certain joint marketing activities are obvious. These include publishing a partner solutions catalog and Web site; bilateral exhibiting opportunities at trade shows; direct mail campaigns; and joint or cooperative advertising.

Notwithstanding such efforts, the biggest challenge for MFP hardware vendors, ISVs and their respective channel partners will be how effectively they develop new infrastructure to facilitate mutual sales. MFP vendors who achieve programmatic strength in sales, marketing and partnering will have a distinct advantage over their competitors, even if the competition has technological or price advantages.

Last but certainly not least is whether the MFP vendor has a clear vision of the interplay between hardware and software. Does the MFP vendor see software and partnerships as a cost of doing business in order to sell "boxes" and increase output volume? Or does the MFP vendor look at software and partnerships as generating mutual profit that can offset declines in hardware and aftermarket revenue and redefine the MFP business model? Having clarity on this matter is a prerequisite to developing effective MFP software development, partnering, sales and marketing initiatives.

III. Xerox's Extensible Interface Platform

A. The Genesis of EIP

Although Xerox announced its Extensible Interface Platform in October 2006, the origins of EIP go back much further. To a large extent, EIP brings to technical fruition and provides wider availability for individual MFP software toolsets which Xerox has made available very selectively for several years.

Going back to 1999, Xerox began creating separate MFP programming interfaces for scanning, printing, computer fax, and job accounting. Companies such as Captaris, EFI, Equitrac, Notable Solutions and Omtool have developed or integrated applications using these toolsets. Xerox itself used some of these same tools to develop its SMARTsend network scanning application.

To its credit, Xerox acknowledges that it significantly modified some of its early ideas on how to transform these individual toolsets into a more encompassing MFP software platform. The fact that Xerox is not the first vendor to launch an MFP software platform enabled it to learn from the experience of others and to benefit from ongoing progress in the IT industry.

As a result, Xerox has become the first MFP vendor to adopt and aggressively apply the vision and terminology of so-called "Web 2.0" technologies and a related Service-Oriented Architecture (SOA) approach to the multifunction device market. Web 2.0 refers to an evolving collection of second-generation, Internet-based services that let people collaborate and share information online. Similarly, SOA provides a means for making aspects of IT systems easier to share, reconfigure and integrate. Xerox speaks of EIP as relying on the network as the fundamental platform for MFP services; delivering a rich, interactive, browser-based user experience on the MFP device; and fostering a participative community of EIP developers that encompasses ISVs, channel participants and even customers.

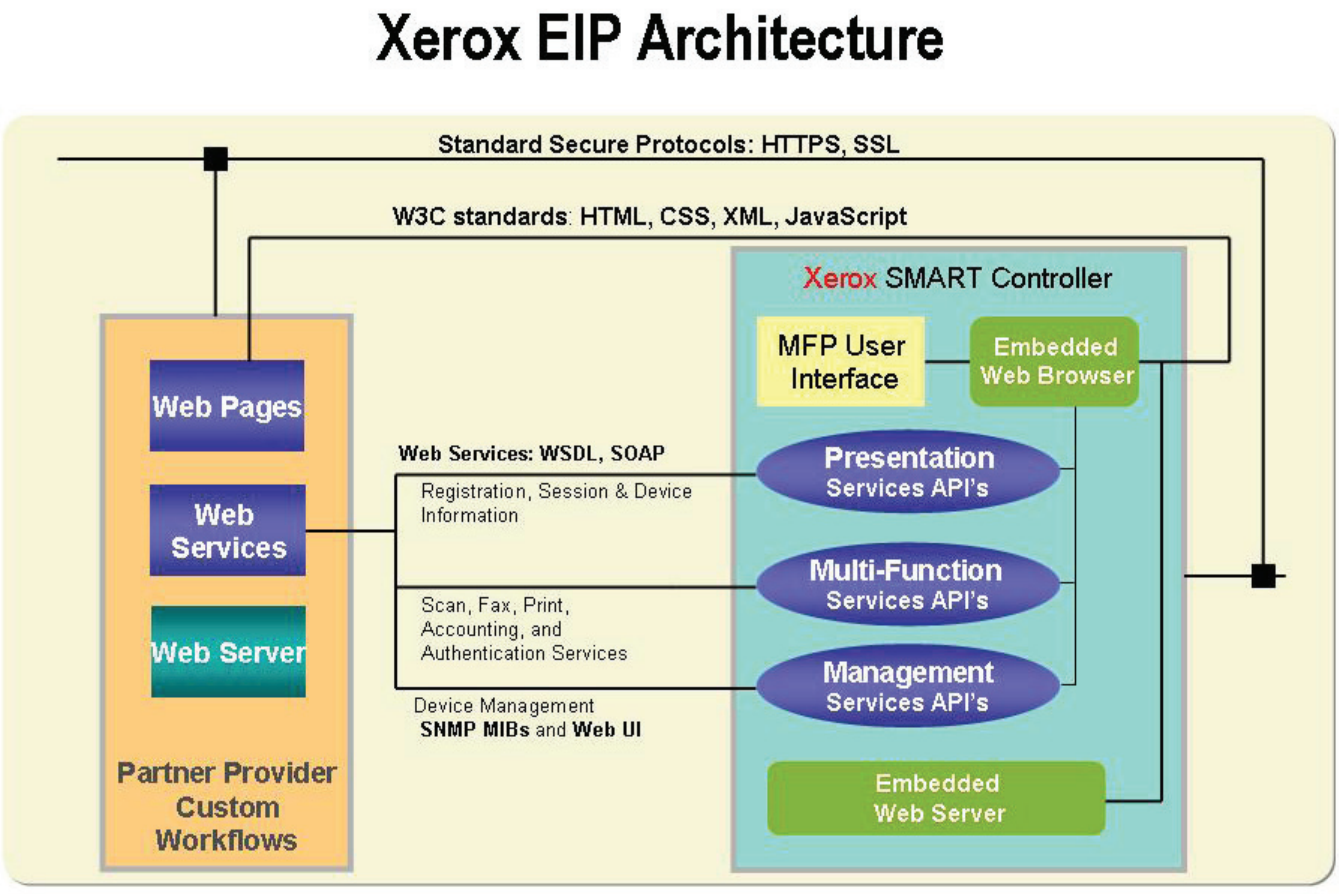
It is important to note that, after deciding in late 2005 on the precise software direction for EIP, Xerox proceeded quickly in developing the platform. This is a positive sign. The ensuing work encompassed two main endeavors. First, Xerox added standardized Web services on top of its existing MFP toolsets. Second, Xerox created new Web services to handle presentation and communication of information on the MFP control panel and to provide authentication.

B. The Structure of EIP

EIP includes three categories of modular application programming interfaces (APIs). Multifunction Services APIs encompass tools for programming and controlling the scanning, printing and computer fax features of an MFP. Xerox also includes in this group the interfaces to its MFP job accounting and network/user authentication capabilities.

The scanning APIs, in conjunction with accounting and authentication, are the most significant of these interfaces in that they provide the widest range of added-value partnering opportunities. Conversely, the printing APIs are primarily intended to expose features relating to print data stream conversion. EIP does not initially provide a Web services API for the copy function. As a result, EIP cannot be used to simplify or customize the copier user interface on a WorkCentre.

Management Services APIs provide control over MFP device management, while Presentation Services APIs handle the bidirectional display of Web pages on the MFP control panel and the transfer of data from the MFP back to the server.



These services are all connected internally via what Xerox calls an Inter-Process Communication (IPC) layer. The key benefit of the IPC layer is that data available to one application or service can be directly accessed by another application or service. This avoids redundant data entry, thereby enhancing accuracy, productivity and security. No competitor has yet promoted a similar capability in its MFP software platform.

Beneath the IPC layer are the fundamental device services and capabilities inherent in the Xerox MFPs with which EIP is compatible. These services are tightly linked to the MFP controller. They provide the core internal capabilities that are exposed externally via the EIP interfaces.

EIP developers are provided a comprehensive development environment. This includes the APIs, documentation, widgets and style sheets for creating MFP user screens, programming examples, and tools. Xerox includes display profiles that enable an EIP application to determine the attributes of the LCD on the MFP control panel and modify Web pages so they are optimally displayed on that device. Similarly, Xerox leverages existing Web standards for serving multilingual Web pages to the MFP. In addition, Xerox is developing an MFP device emulator that should be available with the wider roll-out of EIP. This is important because the emulator will enable an ISV to develop an EIP application without having multiple Xerox MFPs on hand.

To develop an EIP application, an ISV utilizes the various EIP Web services and APIs in conjunction with standard Web development tools to create Web pages and applications that reside on a network server. The software on the server hosts the Web pages that are then presented to the user on the MFP control panel. Data that the user enters from the control panel are communicated back to the server, which can in turn communicate with other applications. EIP applications do not require a dedicated server, and EIP can scale to support the requirements of the user application or environment. Xerox states that a single server can support multiple EIP applications, dozens or more MFPs, and hundreds or even thousands of users.

Feedback from some of Xerox's initial EIP development partners is encouraging. Omtool and Equitrac have indicated that, even with an early version of EIP, their development work proceeded very quickly — just a few weeks. In fact, the companies were easily able to create a prototype solution that encompassed their own respective EIP applications, plus a non-EIP application, that are together presented to MFP users as a single application. The development also entailed no changes to either company's existing code base.

Initially, Xerox is supporting EIP on its 32-75 ppm monochrome WorkCentre models. Concurrent with the announcement of EIP, Xerox upgraded the firmware in the WorkCentre 232, 238, 245, 255, 265 and 275. Earlier versions of these MFPs, which were launched in mid-2005, can be upgraded in the field for a nominal fee in order to become compatible with EIP. Most future ledger-size color and monochrome WorkCentres and many letter-size WorkCentres will be compatible with EIP. Nearly all of Xerox's MFP line-up will support EIP by late 2007. However, Xerox has no plans to support EIP in its production MFPs, production printers, or single-function office printers.

Xerox plans as well to work with Fuji Xerox so that EIP and Fuji Xerox's Apeos iiX will be able to support a common set of capabilities. The idea is that developers will be able to create applications that work with both companies' MFPs. This is part of a larger strategic initiative to bring greater synergy to Xerox's and Fuji Xerox's office MFP lines.

C. EIP versus the Competition

Xerox's EIP provides ISVs with an advanced, easy-to-use MFP software development environment. EIP has all of the inherent advantages of Web technologies that were enumerated in the previous section of this document.

These include:

- Fast and easy application creation that is accessible to a broad range of developers;
- A rich and highly customizable user experience at the MFP control panel;
- The ability to leverage existing Web standards and IT infrastructure;
- Compatibility with a broad range of MFPs without burdening the processors and memory in those devices;
- Inherent support for secure and comprehensive application deployment, user access and device management; and
- Scalability as regards the number of servers, applications, MFPs and users.

Currently, the only other MFP vendor promoting a Web services approach is Sharp. However, some of the capabilities in the initial version of EIP will not be available from Sharp in the corresponding version of Sharp's OSA. In contrast to EIP, Canon's MEAP and Ricoh's ESA utilize a Java-based approach to MFP application development. As a result, they have those limitations that were discussed earlier in this document.

For example, ESA and to a lesser degree MEAP lack easy-to-use Web tools that EIP provides for developing user interface screens for the MFP control panel. In addition, Ricoh has not yet created the MFP application deployment and management tools that Canon provides and which are an IT requirement when embedding Java software inside multiple MFPs. One advantage that MEAP does have currently, and which other vendors lack, is a set of APIs for the copy function that can be used to simplify or customize the walk-up copier control panel.

It is too soon to render judgment on the MFP software development approaches being pursued by other vendors. HP was expected later in 2006 to announce a new MFP scanning architecture that will supplement its Chai platform. Lexmark has discussed but has not released the Java Embedded Solutions Framework (eSF) it announced in early 2006. Konica Minolta's bizhub Open, Kyocera Mita's WiseCore and Toshiba's eBridge Development Kit have not been launched, and few details will be available until 2007.

In addition, Xerox maintains that it is committed to working closely with its development partners to increase and evolve the capabilities in EIP. The company expects to release new EIP features and components in a continuous fashion, and to provide a formal announcement of new services and applications once or twice per year. For example, Xerox expects to add both a copy API and a device emulator in the first half of 2007.

IV. Xerox's EIP Business Strategy

Xerox launched EIP in October in the US, Canada and Western Europe. In doing so, Xerox has turned over a new leaf when it comes to partnering. Whereas Xerox had in years past sought to identify a few companies to be lead partners in a handful of domains (e.g., computer fax, document accounting), with the advent EIP Xerox is opening the door to all interested partners. The stated goal is "to drive software development for Xerox devices by a large number of authors." These authors encompass not just ISVs, but also systems integrators, value-added resellers (VARs), corporate developers, and the Xerox Global Services (XGS) business unit.

Xerox has tapped ten initial developers to create what it calls the EIP Development Consortium. These companies are AND Technologies, Captaris, Equitrac, Kofax, Notable Solutions, Nuance, Omtool, Pharos, Streem Center, X-Solutions and Xerox's own XGS. Xerox has worked with this group to facilitate rapid development of an initial set of EIP applications, to solicit early developer feedback, and to provide a proof point in the market for its commitment to EIP.

Xerox first met with a few charter members of the Consortium early in the summer of 2006. An EIP Development Consortium Forum is planned in November, with customer focus groups to follow. EIP applications from some Consortium members will be utilized for "limited engagement" with a few customers in late 2006. Formal release of EIP applications will take place in the second quarter of 2007. At that time, Xerox also expects to announce additional EIP software development partners.

While access for developers to the EIP software platform is free, Xerox will charge developers a still-to-be-determined but nominal fee for support. Xerox does not intend to require prospective partners to prove their viability or justify their MFP software plans. Xerox is adamant that partners will not pay a royalty on their EIP applications, as Canon requires with MEAP applications. Nor will customers need to purchase an MFP enablement kit, as Sharp requires in order for a device to work with OSA. Partners are free to determine whether they will charge their customers for their own software that works with Xerox's MFPs.

Partners are not required to submit their applications to Xerox for certification. However, a fee-based certification option will be available to developers, who can qualify for a new Runs on Xerox ("ROX") designation. Developers will then have the opportunity to have their ROX-certified applications made available to Xerox sales channels through an organization known as The Xerox Connection (TXC), although some of the details on exactly how this works are still being determined.

Essentially, TXC enables Xerox salespeople and agents to order software as part of the standard order entry process. Xerox will indicate on its partner Web site which EIP solutions are available through TXC. Xerox expects that most partners will opt to have their applications available via TXC, although this will not preclude partners from maintaining independent distribution. Having EIP applications available via TXC means the software can easily be included in a lease with Xerox MFP hardware, and Xerox salespeople and agents will receive compensation for the software they sell via TXC. Xerox will also provide first-level support for such applications, and relay other software issues to the partners.

In addition, Xerox says it is "out of the rebranding business" when it comes to EIP applications. Xerox instead wants to leverage each partner's own brand (e.g., Notable Solutions' AutoStore scanning software rather than Xerox's private-label SMARTdocument Travel version of the same software). Xerox says it does not want to compete with its partners' applications. One sign of this change is that responsibility for Xerox's SMARTsend network scanning middleware has been transferred from the Office Group to XGS.

Moreover, Xerox wants to fully exploit EIP-compatible applications alongside the development, integration and customization capabilities it has within XGS, particularly as a part of its service-led strategy for working with enterprise customers. Xerox correctly believes that fully and productively leveraging XGS for such applications can provide strategic differentiation and a marketing advantage vis-à-vis the competition.

Conclusion

EIP is a solid new offering for an office MFP market that is increasingly warming to the idea that well-integrated applications can drive competitive differentiation and generate both revenues and profits. The launch of EIP takes Xerox from being a laggard when it comes to MFP-based software development tools, to being on the technical forefront. The server-oriented, Web services approach in EIP is aligned with what software partners and IT customers want, and the first iteration of EIP is well-developed for the task.

Looking forward, Xerox has grand plans for EIP. The company envisions EIP expanding and evolving to become the premier SOA platform for document processing. However, it is important not to lose sight of the fact that EIP is and will remain a Xerox proprietary software platform for use exclusively with Xerox multifunction hardware. While having a vision for EIP is commendable, Xerox would be advised not to let that vision outpace reality.

The fact that the entire WorkCentre product line (including the all-important color portion of the line) will not support EIP for a few quarters is a challenge. At the same time, Xerox will have its hands full in the coming months as it works with early EIP partners, adds new software partners, escorts the first EIP applications to market, and continues to flesh out the marketing and sales aspects of the program.

Xerox's initial business decisions with regard to EIP — no royalties or hidden costs, an aggressive commitment to partner recruitment, early customer engagement, listening to its initial partners — are all encouraging signs. These things are encouraging not only in that they are what the market expects, but also because they show a refreshing willingness on the part of Xerox to move outside its traditional comfort zone.

While Xerox has often not been the most nimble or aggressive MFP vendor, EIP is a good example of what the company still can do when it acts decisively and applies its ample technical know-how to an important issue. It would be an exaggeration to say that Xerox intentionally delayed development of EIP until the market was primed and the necessary technologies were aligned. At the same time, Xerox has not forgone major revenue upside in the past couple of years because it lacked a platform like EIP. Having said this, Xerox would be wrong to assume that the MFP market over the next couple of years will continue to wait until Xerox strikes. The good news for Xerox is that it appears to understand and accept this challenge. Moreover, the rapid development of EIP, the management commitment to the program, and the strong positive reaction from early partners have invigorated Xerox's office group and engendered a can-do attitude.

The true challenges for Xerox's EIP initiative ongoing are on the business side rather than the technology side. Partners, customers and competitors alike will be keenly watching to see if Xerox follows through with the requisite internal sales incentives and external marketing and partnering activities. Vision and determination are big pluses when it comes to EIP, but the ultimate success of this new MFP software push will depend far more on mundane perseverance and tactical excellence.