**Software Appliances:
Opening the Door to New
Market Opportunities**

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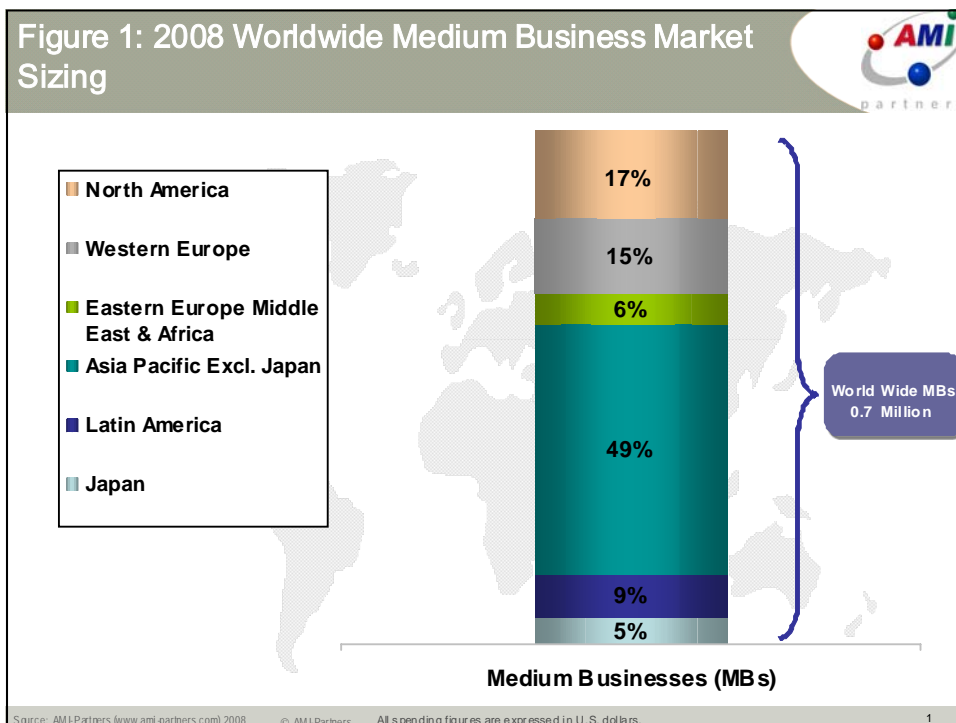
Introduction

What if deploying sophisticated business and infrastructure software was as fast and simple as installing software to get your iPod up and running? Companies that are investing in delivering Linux-based software appliances have this goal in mind. Instead of wrestling down a lengthy and complex configuration and deployment of multiple hardware and software piece parts, software appliances enable independent software vendors (ISVs) to simply lay the complete solution down on a bare metal server—or virtual machine—and have it up and running in a matter of minutes instead of hours or days.
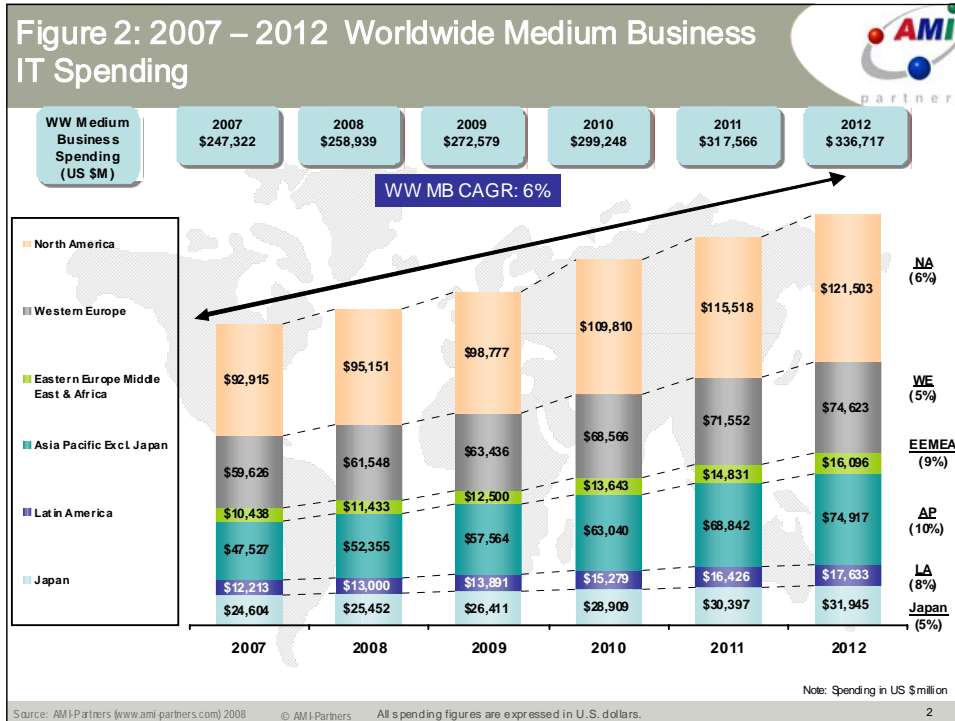
By streamlining the time, resources and know-how necessary to deploy and run solutions, software appliances can help ISVs better reach the estimated 700,000 medium businesses (defined by AMI as those companies with 100 to 999 employees) worldwide. While many midmarket firms want to automate and streamline operations, traditional software deployments are often too complex and expensive for their resources and budgets. Likewise, local and regional value-added resellers (VARs) and systems integrators (SIs)—who are often small businesses themselves—can find it challenging to ramp up the resources and expertise required to sell, deploy and manage these solutions for their midmarket customers.

Software appliances can help ISVs tackle these issues. In this paper, we examine the software appliance value proposition for ISVs. We start with a brief definition of the term, and discuss how software appliances can help medium businesses overcome many of the obstacles to deploying and managing business and infrastructure solutions. We then examine how IBM is helping the ISV community to accelerate development of Linux-based software appliance solutions, and create marketing and channels programs to bring them to market successfully. We assess the technical and business considerations that ISVs must factor into the equation when evaluating this opportunity, and look at how three IBM partners are building and bringing their software appliances to market today.

Section 1: The Midmarket Opportunity and Challenge

AMI estimates that there are about 700,000 medium businesses worldwide. These businesses currently spend about $259 billion U.S. on IT products and services, with growth of about 7% forecast over the next 4 years **(Figures 1 and 2).**

Figure 1: 2008 Worldwide Medium Business Market Sizing

- North America — 17%
- Western Europe — 15%
- Eastern Europe Middle East & Africa — 6%
- Asia Pacific Excl. Japan — 49%
- Latin America — 9%
- Japan — 5%

World Wide MBs 0.7 Million

Medium Businesses (MBs)

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   1

Figure 2: 2007 – 2012 Worldwide Medium Business IT Spending

WW Medium Business Spending (US $M)	2007 $247,322	2008 $258,939	2009 $272,579	2010 $299,248	2011 $317,566	2012 $336,717

WW MB CAGR: 6%

	2007	2008	2009	2010	2011	2012	
North America	$92,915	$95,151	$98,777	$109,810	$115,518	$121,503	NA (6%)
Western Europe	$59,626	$61,548	$63,436	$68,566	$71,552	$74,623	WE (5%)
Eastern Europe Middle East & Africa	$10,438	$11,433	$12,500	$13,643	$14,831	$16,096	EEMEA (9%)
Asia Pacific Excl. Japan	$47,527	$52,355	$57,564	$63,040	$68,842	$74,917	AP (10%)
Latin America	$12,213	$13,000	$13,891	$15,279	$16,426	$17,633	LA (8%)
Japan	$24,604	$25,452	$26,411	$28,909	$30,397	$31,945	Japan (5%)

Note: Spending in US $million

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   2

Although these companies must manage significant complexity **(Figure 3)**, more often than not, midmarket firms lack the IT resources, skills and budgets to deploy complex solutions **(Figure 4).** This is true in both mature and emerging technology markets. In the U.S., Germany and India, for example, the average medium business must support hundreds of employees, IT assets, locations and mobile workers—not to mention the software that these employees and devices use. However, in contrast with better-resourced large enterprises, medium businesses are running fairly lean IT shops, sometimes with just one full-time IT professional.
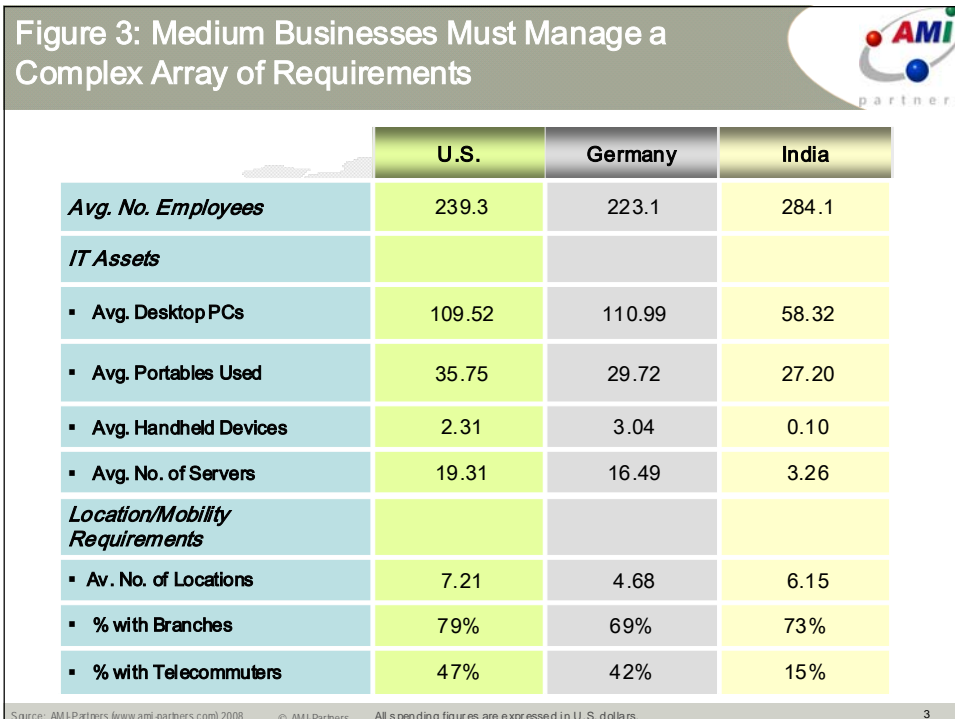
Figure 3: Medium Businesses Must Manage a Complex Array of Requirements

	U.S.	Germany	India
Avg. No. Employees	239.3	223.1	284.1
IT Assets			
▪ Avg. Desktop PCs	109.52	110.99	58.32
▪ Avg. Portables Used	35.75	29.72	27.20
▪ Avg. Handheld Devices	2.31	3.04	0.10
▪ Avg. No. of Servers	19.31	16.49	3.26
Location/Mobility Requirements			
▪ Av. No. of Locations	7.21	4.68	6.15
▪ % with Branches	79%	69%	73%
▪ % with Telecommuters	47%	42%	15%

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   3

Figure 4: Medium Businesses Typically Have Lean IT Organizations
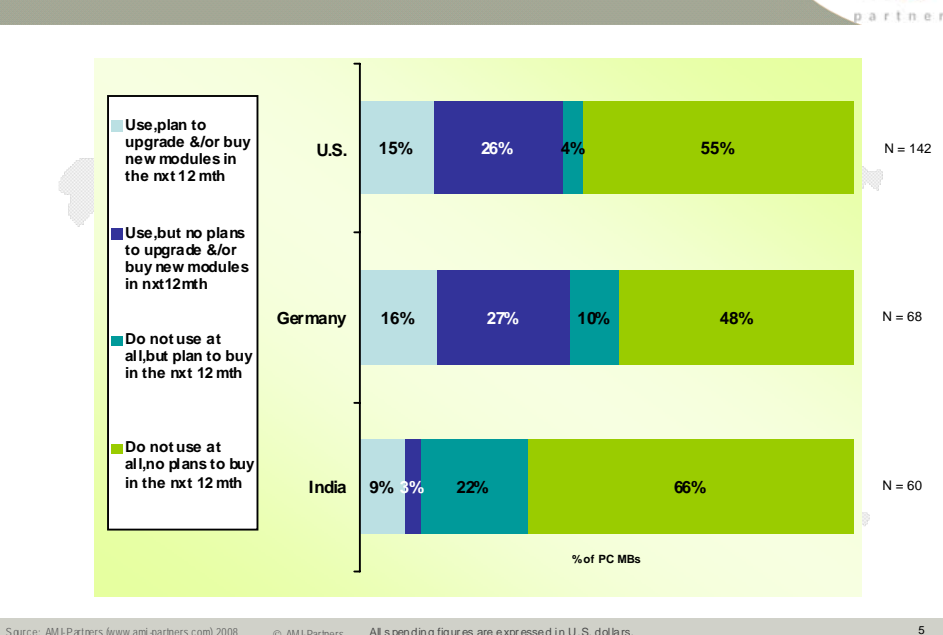
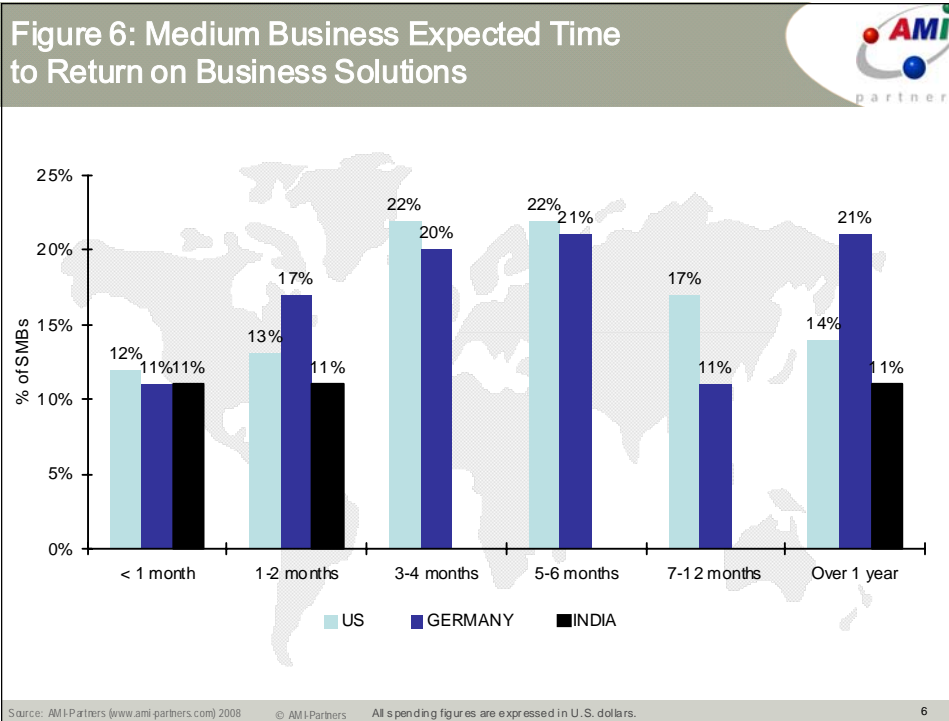|	U.S.	Germany	India
One full – time dedicated employee to it service & support	25%	27%	30%
More than one full – time dedicated employee to it service & support	52% Avg: 3.75	50% Avg: 4.26	35% Avg: 5.09
One or more full – time employee handles technology service & support on a part – time basis in conjunction with other work duties	16%	13%	7%
External Technology Consultants	13%	18%	18%
No One Looks After It	8%	3%	10%

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   4

These constraints have prohibited midmarket firms from deploying infrastructure and business solutions that could provide them with tangible market and competitive benefits. For instance, many have yet to deploy CRM solutions, and a sizable percentage has no plans to do so **(Figure 5).**

Figure 5: Medium Business CRM Deployment and Plans

Use, plan to upgrade &/or buy new modules in the nxt 12 mth

Use, but no plans to upgrade &/or buy new modules in nxt 12mth

Do not use at all, but plan to buy in the nxt 12 mth

Do not use at all, no plans to buy in the nxt 12 mth

U.S.   15%   26%   4%   55%   N = 142

Germany   16%   27%   10%   48%   N = 68

India   9%   3%   22%   66%   N = 60

% of PC MBs

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   5

Medium businesses need solutions that are easy to deploy, simple to use and maintain, affordable and flexible. They typically can't—and don't want to—increase the difficulty of what they have to manage by adding in different operating systems and middleware. A significant percentage expects fast time to value from their IT investments, within six months or less **(Figure 6)**.

Figure 6: Medium Business Expected Time to Return on Business Solutions

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   6
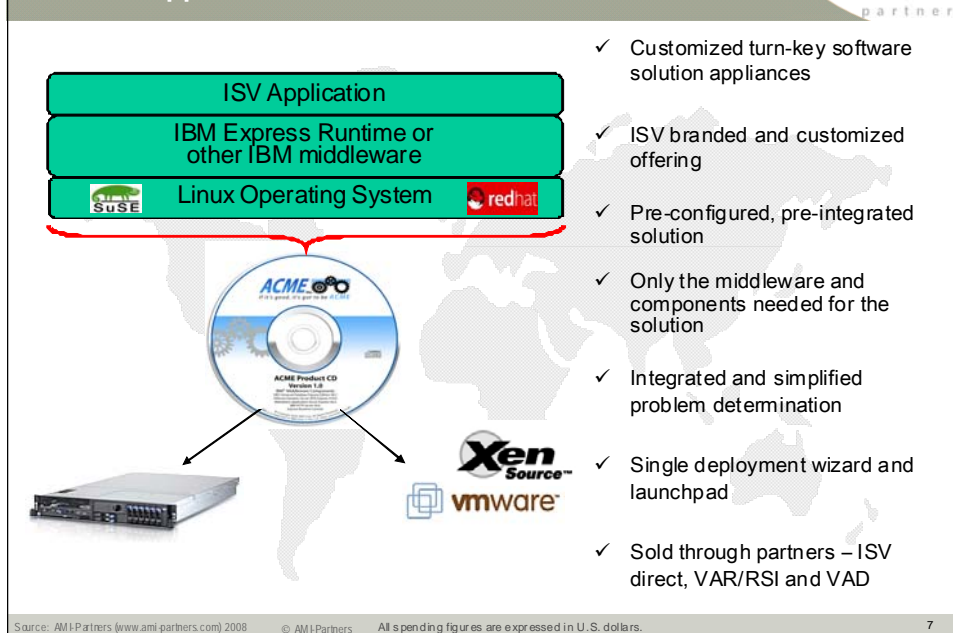
Section 2: The Software Appliance Value Proposition

Although this largely under-served market provides a very attractive opportunity for ISVs, many have found it difficult to effectively package, sell and deploy their solutions for these customers. Even if an ISV designs a solution to be easy to implement and manage, customers and/or partners must first go through the hurdles of setting up and managing the underlying hardware and software infrastructure that the application requires.

Software appliances give ISVs a way to shield midmarket companies from these complexities by providing pre-configured, turnkey solutions that include the ISV application running on top of a standards-based, middleware stack. The stack includes the operating system, database, application server, application software and any other middleware needed for the solution, pre-integrated with the application **(Figure 7)**—but contains only the necessary components, keeping the footprint as small as possible. Customers or solution partners can simply load the software appliance onto any standard x86 server, or on a virtual machine, such as Xen or VMware.

Figure 7: Customized Turnkey Software Solution Appliances

- ISV Application
- IBM Express Runtime or other IBM middleware
- Linux Operating System

✓ Customized turn-key software solution appliances

✓ ISV branded and customized offering

✓ Pre-configured, pre-integrated solution

✓ Only the middleware and components needed for the solution

✓ Integrated and simplified problem determination

✓ Single deployment wizard and launchpad

✓ Sold through partners – ISV direct, VAR/RSI and VAD

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   7

Linux has become the operating system of choice for software appliances. Several characteristics make it a good match in the software appliance space, including that Linux:

- *Creates a relatively small footprint.* Linux is lightweight. It requires less code and creates a smaller footprint than other operating systems, such as Microsoft Windows. ISVs need only install those parts of a Linux operating system their solutions require, keeping the size of the solution compact.

- *Reduces costs.* Using Linux in place of a proprietary operating system reduces the solution cost, and consequently, the total cost of ownership for the customer.

- *Provides flexibility and portability.* Linux separates the operating system decision from hardware decisions.

On the flip side of the equation, software appliances are also a great fit for Linux. By bundling Linux into a pre-configured appliance, customers get the advantages of Linux and open source, standards-based solutions without the intricacies of having to deploy or manage the individual components.

The benefits to customers stem from having all the necessary components—and only those needed to effectively run the solution—wrapped up into one, compact package. Instead of having to source and configure multiple individual components, a software appliance lays down everything necessary to run the solution in one fell swoop. As a result, customers achieve some significant advantages over conventional software implementations, including:

- *Easier, faster solution trials.* Because software appliances are pre-configured and can be quickly installed on any x86 server or virtual machine, customers don't need to spend days or weeks buying and configuring hardware and middleware simply to take a solution for a test drive.

- *Eliminates platform ideology and skill issues from the purchase equation.* From a customer perspective, the software appliance functions like a black box: they set it up, turn it on and it runs, without

the customer having to make decisions about or have specialized skills in a particular operating system or middleware layer.

- *Dramatic reduction in set up and configuration time versus conventional applications.* The automated, wizard-driven installation process can cut deployment down to as little as 30 minutes and a few mouse clicks, depending on the software stack requirements.

- *Decreased support requirements.* Once the software appliance is deployed, it just runs, doing its job without a lot of care and feeding from administrators—or specialized IT personnel that a midmarket business is unlikely to have. ISVs and other partners can remotely manage, update and support the appliance for the customer. Updates can be applied to address specific areas, or the whole appliance can be updated with a new image.

- *Greater solution reliability and stability over time.* Because software appliances are pre-configured for implementation, they will be deployed correctly from the outset, decreasing the likelihood of problems down the road due to configuration errors.

- *Reduces upfront and maintenance costs.* Customers might need to use and manage two or three servers to deploy both the solution and the middleware that solution requires. With a software appliance, customers can re-purpose an existing x86 server, and run the solution on that one box.

- *Repeatability and consistency.* Pre-configured software appliance solutions ensure that each installation is the same and is done correctly—no matter when, where or who is installing it.
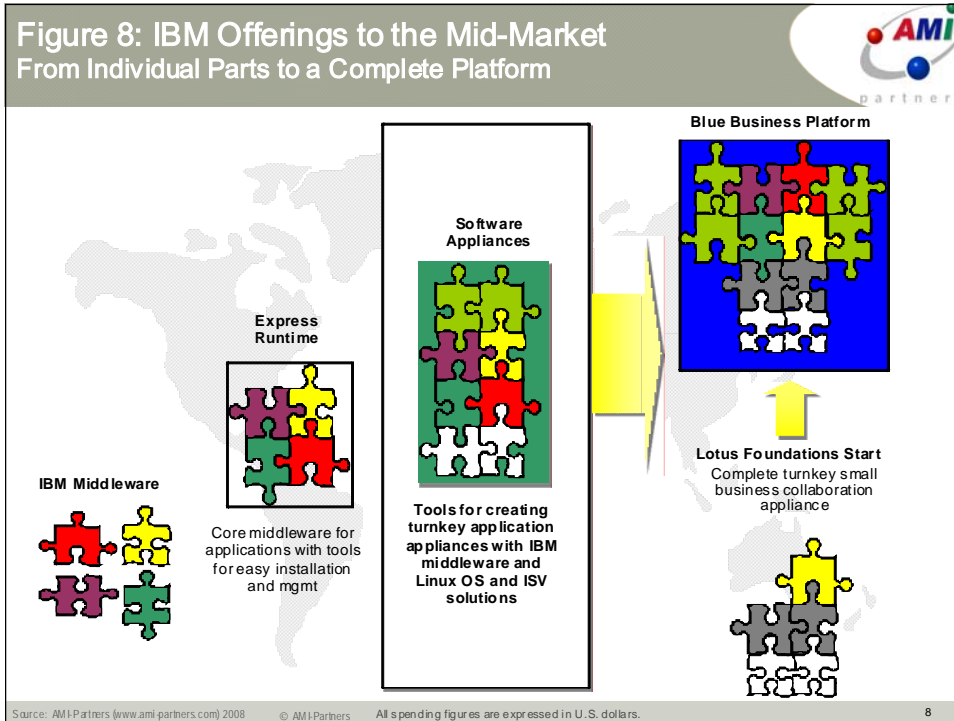
From a customer perspective, software appliances provide the solution functionality medium businesses want, coupled with the ease of deployment and maintenance they need. From the ISV standpoint, appliances offer a simplified, repeatable solution through which they can profitably reach and serve these customers.

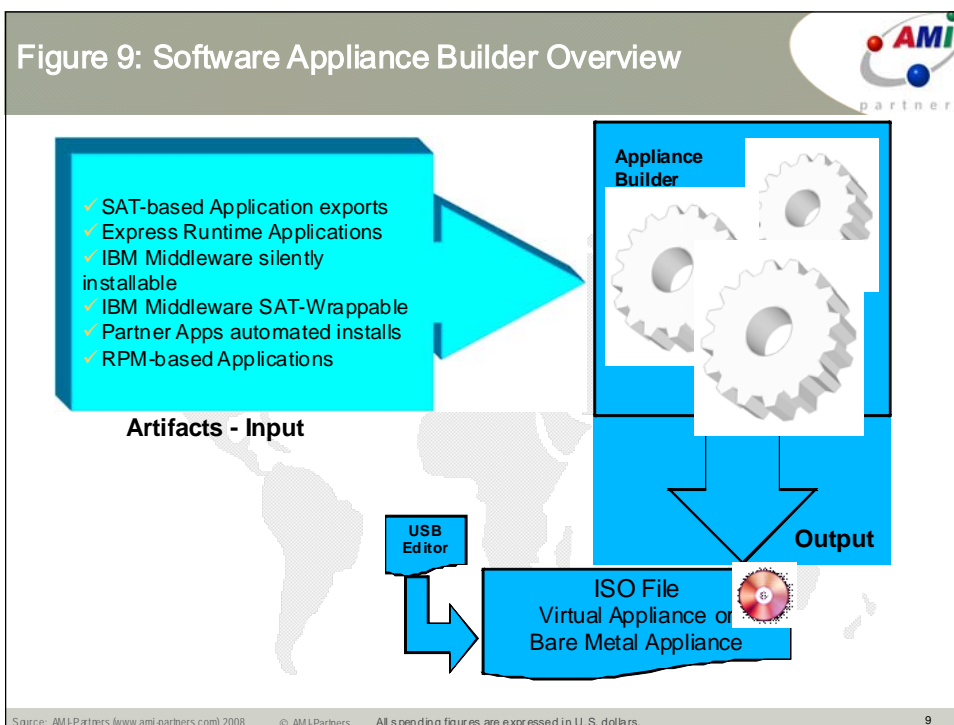## Section 3: IBM's Software Appliance Investment and Tools

IBM is investing heavily in tools and services to help ISVs take advantage of the software appliance opportunity as part of its broad corporate midmarket initiative **(Figure 8)**. On one end of the spectrum, IBM offers its middleware components separately; ISVs can choose to purchase the ones they need, and integrate their solution on top of these components on their own. At the other end, ISVs can develop solutions designed to snap into IBM's Blue Business Platform initiative, designed to dramatically simplify IT deployment for SMBs, and provide a platform for software and service providers to grow their business. IBM and its partners accomplish this by pre-integrating products and delivering them to SMBs as comprehensive solutions that reduce costs and complexity.

Across the continuum, these programs and platforms greatly expand IBM and its partners' ability to serve the midmarket and even small businesses. For instance, IBM has already demonstrated the value of the software appliance approach with Lotus Foundations Start, part of the Blue Business Platform initiative. The first in a series of Linux based software appliances, Lotus Foundations Start offers small and medium businesses a simple, affordable and integrated solution for collaboration, file management, networking, security, back-up and recovery. ISVs can add solutions on top of the Lotus Foundations platform, creating turnkey solutions tailored to specific vertical market requirements.

IBM's Tools for Software Appliance Creation and resulting ISV software appliances are in the middle of the continuum of offerings for the midmarket, and are critical elements of this portfolio. Tools for Software Appliance Creation bundles all the tools, components and services necessary to effectively shrink-wrap solutions into a streamlined, Linux software appliance. These tools help ISVs to rapidly create turnkey, pre-configured software appliances—complete with operating system, middleware and applications—that can be deployed in a minimal click installation process **(Figure 9).**

Figure 8: IBM Offerings to the Mid-Market
From Individual Parts to a Complete Platform

Blue Business Platform

Software
Appliances

Express
Runtime

IBM Middleware

Core middleware for
applications with tools
for easy installation
and mgmt

Tools for creating
turnkey application
appliances with IBM
middleware and
Linux OS and ISV
solutions

Lotus Foundations Start
Complete turnkey small
business collaboration
appliance

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   8

Tools for Software Appliance Creation provides open computing building block capabilities, with the ability to consume middleware products including IBM Express Runtime (WebSphere Application Server Express, IBM HTTP Server and DB2 Express). The IBM Express Runtime Console facilitates administration tasks across the stack. ISVs can mix and match the components they need to build their integrated solution, and wrap them in the Solution Assembly Toolkit (SAT). ISVs can use the tooling to include multiple business applications in the appliance, and control the order in which they are installed.

Figure 9: Software Appliance Builder Overview

Appliance
Builder

✓SAT-based Application exports
✓Express Runtime Applications
✓IBM Middleware silently installable
✓IBM Middleware SAT-Wrappable
✓Partner Apps automated installs
✓RPM-based Applications

Artifacts - Input

USB
Editor

Output

ISO File
Virtual Appliance or
Bare Metal Appliance

Source: AMI-Partners (www.ami-partners.com) 2008   © AMI-Partners   All spending figures are expressed in U.S. dollars.   9

The tools require no prior expertise; the partner only needs to be expert in their application. Here's how it works: ISVs provide either Novell SUSE or RedHat Linux, and supply a silent install format (requiring no user prompts) for their application. If the ISV doesn't have a silent install, they can use the SAT to create one. The tooling takes care of time intensive, non-intuitive tasks, such as:

- Setting up the build environment.

- Wrapping the software packages into RedHat Package Manager (RPM) format.

- Inserting those RPMs into the Linux installation disk.

- Configuring the automated install of the Linux OS, creating a disk image ISO file.

- Burning the ISO file to a disk.

The ISV can select from one of three modes to create their software appliance:

- *Wizard Mode*, which guides users through the entire process sequentially, via a graphical user interface (GUI). This mode enables the user to perform bundling tasks in the proper order, and is well-suited to ISVs that are new to the bundling process and those that have a minimal amount of applications to bundle.

- *Advanced Mode* also features a GUI, and provides additional functionality. This mode enables the user to zero in on specific steps in the process, making it ideal for updates and trouble shooting, and requires a moderate understanding of the tools. This mode helps ISVs manage more complicated requirements, such as multiple operating system targets, and/or multiple applications.

- *Command Line Mode* offers the most functionality, and gives users the most control and flexibility. It requires an advanced knowledge of the tools and some knowledge of the Linux command line. Command line mode has some functionality not yet supported by the GUI, such as linking and unlinking multiple applications to each other, manipulating options not exposed to the GUI interface, and full control over the tooling environment and components.

Whichever mode is chosen, the ISV need only be an expert in the installation process of their own application. Tools for Software Appliance Creation takes care of installing and configuring the operating system and software stack, and the non-intuitive process of bundling all of the installations together.

These tools also enable the ISV to automatically test a generated ISO file in a VMware image, and setup and use a USB device to augment some operating system parameters at install time. The final result is either a disk image ISO file, or a DVD containing the installable OS, middleware stack, and application—and a solution that can help ISVs to overcome obstacles to selling and deploying their solutions in the midmarket.

Throughout the process, IBM's Linux Integration Center offers technical support to help ISVs build and customize their software appliances, providing both skills transfer to the ISV team, and deployment support to help accelerate early wins.

FMT Pty Ltd

Since 2002, FMT Pty Ltd, headquartered in Melbourne, Australia, has supplied real-time solutions to assess fraud, security and compliance risks. FMT's Octopus Solution suite enables companies to decrease losses and increase revenues associated across a spectrum of electronic transactions. Traditionally, FMT has served large financial, transportation, insurance and telecommunications companies, primarily in Europe. The ability to enable easy rapid customer trials are a key part of FMT's strategy: FMT is so confident that its solutions will work that it installs them at no charge—if it works, the customer buys it, if not, they don't.

However, to offer these trials, FMT has to install its solution in whatever environment and leftover hardware the customer provides. This often means that FMT must spend a considerable amount of time sourcing and setting up the pre-requisite hardware and middleware components for its solutions. As it set its sights on new markets, including North America, and broader midmarket penetration, FMT realized it would have to expedite these trials. It needed to slash the time, money and resources required to extend its "reverse risk" installation offer to a wider audience. Working with IBM, FMT determined that a software appliance approach would help it to accelerate the trial process and facilitate a transition from large projects with long implementation cycles to shorter, more turnkey engagements.

FMT began by taking a Windows-based appliance route, but realized that this would still require it to source, license and configure a Windows server just to trial its software. Wanting to wring more time, cost and hassle out of the process, FMT decided on a Linux-based appliance—which would enable it to bundle all solution components from the operating system into a single installation CD. In addition, FMT found that the Linux install only prompts the user for the required drivers—further shortening the installation procedure, especially on older hardware.

Using IBM's Tools for Software Appliance Creation, FMT found software appliance development "surprisingly easy." FMT leveraged prior experience developing a Windows product with Express Runtime (WebSphere Application Server Express, IBM HTTP Server and DB2 Express) to transition it to Novell SUSE Linux. Although FMT was initially concerned about whether it had enough Linux expertise in house, IBM provided support to get them up to speed; it took FMT just a couple of weeks to build the first software appliance prototype, and then another week or so to tweak, finalize and test it.

FMT anticipates that its software appliance, which began shipping in June 2008, will help it to meet its goals to speed midmarket trials, drive down its footprint and serve the midmarket profitably. The software appliance solution enables FMT to lay its solution down on a virtual machine, and provide customers with an unattended install process that's about 50% faster than a Windows install. The vendor expects that it can trim about a thousand dollars off licensing costs, and that the locked down, consistent nature of the appliance will reduce support issues, and make back up and support resolution easier.

Section 4: Expanding Market Opportunities

Software appliances provide ISVs with a new delivery model that can open the door to fresh opportunities in the midmarket. Clearly, appliances remove many sourcing, integration and resource issues that prohibit companies from trying and buying applications, mitigating the need to cobble together systems, software and resources for trials and deployment, as discussed in Section 2.

As important, software appliances can help ISVs expand their partner networks to more readily reach new markets. Because the solution is now pre-configured and can be installed automatically, it doesn't require as much technical expertise to deploy. ISVs can cast a wider recruitment net, and spend less time training and getting new partners up to speed. They can focus more attention on helping partners gain business consulting expertise around for the

solution, and less time on technical configuration and support issues. Furthermore, by drastically reducing the probability of configuration errors at installation, software appliances decrease the likelihood of trouble down the road—making it easier for partners to support your solution.

IBM lends a hand to ISVs in the go-to-market area, helping ISVs develop new channels that can extend sales for their software appliance solutions. For example, IBM will provide guidance to ISVs to help define partner profiles, and determine how many partners are necessary to optimize sales results in a new market. IBM also links ISVs with distributors that can match ISVs with system integrators and reseller partners to reach new customers. ISVs can also take advantage of IBM's extensive array of PartnerWorld programs, including assistance in developing targeted campaigns and messaging, and Express Advantage certification.

StradaSoft, Inc.

Headquartered in New York, StradaSoft has developed Business Process Management (BPM) solutions since 2002. StradaSoft BPM Suite Express is designed to help organizations target and rapidly improve critical point-of-pain processes, providing immediate return on investment. Historically, StradaSoft has concentrated on serving primarily Fortune 1000 customers with its solutions, which it offers on both Linux and Window platforms.

Last year, StradaSoft set some lofty midmarket goals for itself: to shift its customer mix from predominately large business customers to a 50/50 model by growing its midmarket business by 30% to 40%. To do this, StradaSoft would need to enable a new reseller channel, and provide streamlined installation and delivery options for its solutions.

StradaSoft chose to partner with IBM on its software appliance solution for two key reasons. From a marketing perspective, StradaSoft views IBM as its best partner and reseller, and well-equipped to help it extend its midmarket reach. On the technical front, StradaSoft saw IBM as having the expertise and resources necessary to help it quickly and successfully develop the solution, and gain higher performance levels than it could using other tools. IBM's Tools for Software Appliance Creation and Linux provided StradaSoft with the ingredients to build a lightweight, efficient and less expensive software appliance version of its offering. The appliance solution trims installation time from 1 to 2 days to about an hour, and the vendor indicates that "if you were to try and do this in a non-IBM environment, it would be bigger and slower."

Customers only need one server, instead of the two to three required for the standard version, to run the solution. StradaSoft can also remotely support this less complex, locked down environment more efficiently, and perform functions such as database tuning and integration more easily.

With the software appliance, technical consultants are no longer necessary for sales and implementation; StradaSoft can train business consultants for the job instead. As a result, StradaSoft has the solution it needs to engage and develop new reseller channels and capitalize on the midmarket opportunity. IBM is also assisting StradaSoft with its new reseller program, helping to profile and identify the types and numbers of partners it will need to support its goals, and roll out its solution later this year.

Section 5: Considerations for ISVs

Software appliances can help ISVs simplify solution implementation, ease support issues, expand delivery and distribution channels and serve more customers. But to develop a successful execution strategy, vendors must take both technical and business considerations into account. On the technical side, some of the key questions that vendors will want to evaluate include:

- Can you make the product into something that can be installed quickly and easily? This determination involves assessing the technical architecture, footprint, database and other server requirements.

- What—if any—components can be cut out of the solution to reduce its size? What will have to be rewritten as a result?

- What skills do I have to support this development? What areas will I need technical guidance and assistance with?

On the business side, ISVs need to consider issues such as:

- What is the target market for the software appliance?

- How should I price the appliance versus the traditional version?

- What are the types of partners and skills that I'll need to reach, sell and support the solution in my target market(s)? How many will I need to meet my sales goals?

- How long will it take to profile, identify, recruit and train new partners?

- What kind of help will I need in the partner identification and recruitment process?

Conclusions

ISVs that want to extend their businesses into the midmarket and/or new geographies should seriously evaluate software appliances as a delivery mechanism for their solutions. By streamlining the time, resources and know-how necessary to deploy and run solutions, software appliances can help ISVs better reach and serve midmarket firms. As important, they can make it easier for ISVs to train VARs and SIs to sell, deploy and maintain their solutions.

ISVs should avail themselves of technical, operational and marketing expertise as they evaluate the software appliance option, develop solutions, and plan their go-to-market strategies. IBM's Tools for Software Appliance Creation, deep midmarket marketing and business support partner programs, and extensive partner ecosystem put IBM in a unique position to help ISVs to develop software appliances, and to create the business and marketing plans they need for a successful offering in the market. To learn more about IBM's Tools for Software Appliance Creation, visit www.ibm.com/linux/software, or send an email to lnxappli@us.ibm.com. For further details about Lotus Foundations Start, visit www.lotusfoundations.com .

Access Markets International (AMI) Partners, Inc., Company Profile

AMI-Partners specializes in IT, Internet, telecommunications and business services strategy, venture capital, and actionable market intelligence — focusing on global small and midsized business (SMB) enterprises. The AMI-Partners mission is to empower clients for success with the highest quality data, business planning and "go-to-market" solutions. AMI was founded in 1996 under the name of Access Media International (USA), Inc. by Andy Bose, formerly a group vice president at IDC. Since its inception, the firm has built a world-class management team, each with ten to fifteen years' experience in IT, telecom, online communications or multimedia.

AMI-Partners has helped shape the go-to-market SMB strategies of more than 150 leading IT, Internet, telecommunications and business services companies over the last ten years. The firm is well known for its IT and Internet adoption-based segmentation of the SMB markets; its annual retainership services based on global SMB tracking surveys in more than 20 countries; and its proprietary database of SMBs and SMB channel partners in the Americas, Europe and Asia-Pacific. The firm invests significantly in collecting survey-based information from several thousand SMBs annually, and is considered the premier source for global SMB trends and analysis.

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