IDC WORKBOOK

Better Business Outcomes with Holistic Output Management

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Introduction

For well over a decade, organizations have been looking to print and document management initiatives as a way to reduce costs, increase employee productivity, and better meet regulatory/compliance and environmental/sustainability goals. These initiatives may be driven internally, though organizations may also partner with a managed print and document services (MPDS) provider to outsource the optimization and ongoing management of their printing infrastructure. Either way, organizations need to define and control their print and document management strategy to ensure continuous innovation and productivity/cost improvements.

However, as the market matures, and as contracts renew (perhaps multiple times), organizations and their partners are finding it difficult to obtain additional cost savings and productivity benefits from print and document management initiatives, beyond what has already been accomplished.

In addition, cloud-based applications and mobile devices as well as the increasing consumerization of IT and the impact of social media on business applications are creating both opportunities and new pain points related to document and information management. An increasingly mobile workforce and new workplace paradigms, such as "hoteling" or "hot desking," in which employees are not assigned specific office space, offer additional challenges.

Organizations have the opportunity to increase cost savings, reduce IT labor costs, increase employee satisfaction and productivity, and drive better business outcomes by taking a holistic approach to print infrastructure and output management (OM). "Holistic" refers to consistent solutions, procedures, policies, and service levels across the entire enterprise, encompassing both desktop and enterprise systems and reaching local, remote, and mobile workers.

What Is Holistic Output Management?

The IDC Print and Document Management MaturityScape Benchmark

IDC's Print and Document Management MaturityScape provides a maturity model and a framework to support organizations that seek to optimize their imaging and printing infrastructure and document-intensive business processes. The framework enables organizations to assess their current print and document management capabilities and evaluate technology gaps and/or process bottlenecks (see Figure 1).

IDC's Print and Document Management MaturityScape Stage Overview

Source: IDC, 2015

IDC's Print and Document Management MaturityScape consists of five stages: ad hoc, opportunistic, repeatable, managed, and optimized:

- ■ **Ad hoc.** Enterprise management of printing resources and document workflows is fragmented, and efforts to reduce the expense associated with print and document workflows are ad hoc at best.

- ■ **Opportunistic.** The enterprise has established a specific initiative to track and maintain corporate printing resources. This provides greater visibility into costs but does not address end-user requirements or device optimization.

- ■ **Repeatable.** The enterprise has optimized for best device utilization and cost savings while considering end-user requirements. Metrics are gathered on an ongoing basis and are used to incrementally improve the capability. This initiative usually occurs at the departmental, business unit, site, regional, or division level.

- ■ **Managed.** The organization takes a holistic approach to print and document management. The initiative is extended throughout the organization, includes all print applications, and expands beyond the walls of the corporation to include support, tracking, and optimization for remote and mobile workers.

- ■ **Optimized.** The enterprise has reengineered specific line-of-business and/or vertical document-intensive workflows including paper-to-digital conversion of documents and digital workflows. Service levels are aligned with business goals.

Most organizations in the United States have "stalled" at the repeatable level of the maturity model. IDC's benchmark research shows that over 43% of organizations are at the repeatable level. Only 35% of organizations have achieved the managed level of print and document management maturity, and only 3.4% are at the optimized level. We expect a similar distribution in other developed regions such as Western Europe and even lower levels of maturity in developing regions.

However, the research shows that organizations at the highest levels of maturity (i.e., organizations that have automated and optimized business processes) are more likely to achieve or exceed the goals of these initiatives, including cost savings, reduced print and paper volume, reduced transaction costs, improved device performance, and improved information and document security. Respondents also reported higher employee productivity and reduced burden on IT resources.

The Role of Holistic Output Management in Print and Document Management Maturity

Holistic output management solutions can play a significant role in enabling organizations to grow to higher levels of print and document management maturity. We define *holistic output management* solutions as software/middleware that delivers output generated from any application on any platform to any physical or virtual location. These solutions help organizations move to managed and optimized maturity levels because they enable a common print and document infrastructure across the entire organization that results in consistent functionality and user experience from platform to platform. *This includes information generated by desktop/office, mobile, and enterprise applications for delivery to a broad range of print devices as well as electronic delivery to softcopy destinations.*

Holistic output management solutions insulate applications from the complexities and nuances of downstream document delivery, and this expedites and simplifies the delivery of new services without application changes. And because output management connects disparate applications and processes to hardcopy and softcopy destinations, it is a key enabler in automating and optimizing document-intensive business workflows.

Holistic output management solutions are highly scalable to meet the needs of large enterprises, and they are hardware agnostic relative to computing platforms and printer hardware, providing tremendous flexibility in future IT decision making. Also, they can seamlessly convert application output from one format to another on the fly, making it possible to extend the benefits of the solution across the enterprise, including remote and mobile workers.

Benefits of Holistic Output Management

There are a number of benefits of holistic output management, many of which are consistent with the benefits achieved by respondents in IDC's Print and Document Management MaturityScape Benchmark research. These benefits include the ability to:

- Deliver hard cost savings
  - Supports IT standardization by deploying a common, hardware-agnostic infrastructure across the entire organization to lower support, maintenance, and training costs
  - Consolidates and eliminates print servers, reducing the cost of hardware, software, and associated IT resources
  - Reduces the requirement for highly skilled IT resources and facilitates better employee self-service
  - Reduces print failures in document-related business processes that impact business performance
  - Offers the flexibility to select any hardware vendor or application platform and negotiate the best prices for the most appropriate products

- ■ Improve employee mobility, productivity, and satisfaction
  - • Enables users to locate and connect to print devices in office locations across the enterprise, reducing support calls and improving worker mobility
  - • Provides consistent user experience and functional capabilities for all employees — including remote, mobile, and "roaming" employees — independent of application or computing platform
  - • Reduces workload of IT administrators and support staff to add, delete, and change printer definitions as well as troubleshoot print-related problems
  - • Supports virtual desktop environments, enabling proximity-based printing and providing a print capability and a user experience similar to those of traditional Windows desktops
  - • Allows IT administrators to associate users, terminals, and printers in an intelligent manner and ensure that these definitions are persistent across virtual desktop sessions

- ■ Improve security, reduce risk, and ensure compliance
  - • Protects sensitive information by preventing the delivery of documents to the printer until the user authenticates their identity at the target device
  - • Safeguards business process workflows by dynamically adding watermarks, overlays, timestamps, and other security features to prevent document misuse
  - • Reduces IT and business risk by isolating the output infrastructure from operating systems changes and other application modifications, simplifying migrations while minimizing negative impacts to project schedules
  - • Ensures continuous operation of document-related business processes through high-availability architecture
  - • Provides a cross-enterprise solution for tracking, auditing, and reporting of print-related activity — one that is independent of applications and platforms
  - • Ensures quality control during change management processes

- ■ Support sustainability efforts
  - • Reduces unwanted/wasted printing and associated costs with pull-printing technology
  - • Enables electronic delivery of application output, reducing paper and consumables usage
  - • Provides print usage reports so organizations can educate users about their printing behavior and implement policies to reduce consumption of paper and consumables

- ■ Enable business process automation and optimization
  - • Reduces barriers between disparate systems by seamlessly converting data and output formats between applications and hardcopy/softcopy destinations, enabling quick delivery of new services without application changes
  - • Provides end-to-end visibility of print/document-related business processes such that IT staff can easily identify and resolve problems with applications, systems, networks, or devices
  - • Supports closed-loop communication between an application and the target delivery destination (e.g., print device), resulting in intelligent application integration (For example, dynamic alerts can be generated to notify a user if a process has completed successfully or failed.)
  - • Simplifies and automates the process of gathering and assembling necessary documentation while eliminating the need for costly and error-prone manual document processing

In 2013, IDC interviewed 13 companies regarding their use of output management solutions to manage their printers (*Business Value of Automated Output Management*, IDC white paper #226994R, December 2013). In aggregate, the companies enjoyed the following benefits:

- Reduced IT labor costs by $28,273 per 100 managed printers annually by improving IT staff productivity

- Enhanced user productivity by $4,398 per 100 managed printers annually by reducing print services downtime and help desk issues

- Lowered annual business capital and operational print services costs by $20,799 per 100 printers

It is important to note that such benefits are optimally achieved with an enterprisewide output architecture from a single vendor. Holistic output management does not mean addressing a checklist of features/functions with a number of point solutions. This latter approach is tactical and will not provide a standardized solution with consistent functionality and user experience from platform to platform.

Assessing Output Management Capabilities

The following worksheet allows an organization to evaluate the status of its output management technology, processes, and policies. Such an evaluation is especially useful in formulating objectives for process changes and/or new technology deployments. It also facilitates a dialogue, internally and with solutions providers and/or MPDS or other document outsourcing vendors, related to the expected outcome of enterprise output management.

The worksheet is organized into five categories:

- Management and control of printing infrastructure

- Print policy and information security

- Support for a mobile workforce

- Automation/optimization of document-related business processes

- Further considerations

Management and Control of Printing Infrastructure

Does the OM solution eliminate or consolidate and simplify print server infrastructure across the enterprise?	
Does the OM solution support automation of printer driver management so that administrators can manage a central repository of printer drivers for all the device types and models across the enterprise (i.e., such that users will receive the correct version of the driver based on the printer they select from their specific desktop system)?	
Does the OM solution enable centralized management and control of the enterprisewide print infrastructure such that system administrators, help desk personnel, and other authorized users can remotely manage their fleet of distributed printers from a single user interface?	
Does the OM solution manage the delivery of documents from any application to any type of hardcopy or softcopy destination, independent of hardware manufacturer, application vendor, or operating system platform?	
Does the OM solution support well-defined interfaces for customization so you can extend its operational or functional capabilities to address specific business requirements as they arise?	
Does the OM solution provide end-to-end visibility of print-related business processes such that IT staff can easily identify and resolve problems with applications, systems, networks, or devices?	
Does the OM solution provide a Web-based graphical interface for IT administrators and users that supports both infrastructure and job management while promoting self-service capabilities for users?	
Does the OM solution have a built-in spooler without requiring a third-party product?	
Does the OM solution support your business requirements concerning scalability, reliability, and availability?	

Source: IDC, 2015

Print Policy and Information Security

Does the OM solution support "rules-based" (policy) printing to reduce cost and support a corporate sustainability strategy by giving administrators the ability to define and enforce printing rules across their user community?	
Does the OM solution provide rich accounting and auditing capabilities that allow you to track what is being printed as well as where, when, and by whom?	
Does the OM solution provide management with a reporting capability to view print-related metrics regarding costs, usage, etc.?	
Does the OM solution provide the facility to dynamically add watermarks, overlays, timestamps, and other security features to prevent document misuse and improve business process workflows?	

Source: IDC, 2015

Support for a Mobile Workforce

Does the OM solution support mobile printing such that users can print documents from any mobile device (e.g., smartphones, tablets) to any printer in the network?	
Does the OM solution let mobile workers print documents in a variety of popular application formats and render them to the appropriate printer commands in a seamless manner?	
Does the OM solution support pull-printing (also referred to as "follow-me printing") where users can authenticate at a printer or an MFP device, view the list of documents they submitted for printing at some previous time, and select only the documents they need for immediate printing?	
Does the OM solution support pull-printing across different applications and computing platforms, from mobile to mainframe, and can it normalize user IDs across different applications/platforms for user authentication purposes?	
Does the OM solution provide a self-service printer portal that allows users to search for and install new printers to their desktop based on location, device characteristics, etc.?	
Does the OM solution provide special support for virtual desktop infrastructure (VDI) environments such that administrators can easily associate users, printers, and terminals in an intelligent manner, resulting in fewer support calls, increased productivity and mobility, and higher user satisfaction?	

Source: IDC, 2015

Automation/Optimization of Document-Related Business Processes

Does the OM solution provide the necessary logic and interfaces for seamless integration with your critical business applications?	
Does the OM solution support closed-loop communication protocols and robust error recovery methods to ensure the successful delivery of all document pages to the destination device?	
Does the OM solution support a "driverless" print capability such that it can seamlessly convert documents from one format to another while preserving the original "look and feel," enabling applications to be developed and maintained independent of printer drivers and printer hardware manufacturers?	
Does the OM solution provide a capability to dynamically retrieve, sequence, format, and bundle (merge) documents from various source locations into a single output file for assured delivery to any print device or electronic destination?	
Does the OM solution support a high-availability architecture to ensure continuous operation of document-related business processes?	

Source: IDC, 2015

Further Considerations

Does the OM solution provide the previously referenced capabilities across all computing platforms, applications, and printing devices so your business can develop adaptive enterprise solutions to meet changing market conditions?	
Does the OM solution provide a standardized print architecture across the entire enterprise (i.e., holistic/strategic approach), or is it limited by platform, application, or device (i.e., tactical point solution)?	
Does the OM solution provide your organization with greater business agility, operational flexibility, and interoperability?	
Does your solution provider have the necessary technical skills, subject matter expertise, and experience to support an enterprisewide deployment? A global deployment?	

Source: IDC, 2015