Print Workflows: MIT Libraries

R2 consulting

Observations and
Recommendations

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I. Executive Summary

In May 2006, R2 Consulting spent eight days analyzing key segments of the selection-to-access workflows for print materials across MIT Libraries. The analysis included three days of on-site interviews, extensive review of documentation, follow-up discussions with MIT administration and staff, preparation of this report, and a return visit to MIT to present our recommendations.

During the project, R2 visited and interviewed staff in central Collection Services (14E-210), the Engineering & Science Libraries, Humanities, Dewey, and Rotch. We also spent time with divisional Library Heads, Collection Managers, and staff in Monograph and Serials Acquisitions, Serials Cataloging, Collection Management & Preservation, the Library Services Annex, and Government Documents.

Our charge was to analyze print workflows in light of profession-wide best practices, and in the context of MIT's own automated environment, vendor configuration and library organizational structure. In particular, we were asked to examine processes shared between Collection Services and the divisional libraries to determine:

- Whether MIT can reduce the time spent managing print collections
- Whether standardized practices across libraries would increase efficiency
- Whether the current division of tasks between Collection Services and the divisional libraries is efficient and effective

With its focus on acquisition and processing of print resources, the scope of this project is narrower than most of our work, especially because cataloging and electronic resources management were both out of scope. We understand the reasons for this limitation, but in practice it is difficult to isolate processes so discretely. Not surprisingly, comments on both topics surfaced in our interviews, so we have included some high-level comments about those areas.

Additionally, R2 was asked to propose organizational changes to facilitate any workflow improvements identified. MIT's 2005-2010 Strategic Plan projects sustained change, and the Libraries need to prepare themselves for new roles and tasks related to licensed and locally-produced digital content, and increased cooperation with other libraries. R2's analysis also addresses to some degree the potential balance of those responsibilities between Collection Services and the Processing units.

Our findings reflect a large, distributed library system that in many ways seems to operate without a center. Although Collection Services and Administration serve the MIT Libraries as a whole, the five divisional libraries each exhibit a

unique culture and orientation. In part, this is because information resources within their respective disciplines vary, and in part because they identify more closely with their academic departments than with the library organization. Although this closeness makes the library responsive to its users, it also makes it difficult to generalize about policies or practices for MIT Libraries; instead, descriptions are always prefaced with, "Well, in Dewey..." In fact, the Libraries function as a loose federation, rather than a unified whole.

This characteristic is reflected in workflows, and creates a unique set of challenges. The most effective approaches to workflow redesign incorporate techniques such as creating a mainstream of transactions and materials that act as much alike as possible, relying on standardized policies, practices, and priorities. But such standardization implies a level of central control and decision-making that is not part of MIT's culture.

MIT's workflows face other unique challenges as well. Statistics from FY05 show 30.48% (793,277 of 2,602,150 volumes) of collections stored offsite. Many people interviewed perceive it as even higher (40-50%), which speaks to its impact on workloads. The sheer number of decisions, physical moves, and record maintenance transactions required by these conditions is impressive (e.g., 44, 427 items to storage and nearly 16,000 withdrawn in 2004), demanding a high proportion of staff hours for necessary but low-value tasks. The existence of two storage options, LSA and Harvard Depository, complicate the matter further.

The extent of this effort perhaps prevents the Libraries from addressing other issues which surfaced during our visit. For instance, the amount of time from receipt to shelf is perceived as long, at least for monographs. There are many uncataloged collections in various formats. Web sites, documentation, and training materials—i.e., the infrastructure for standardization—are not updated as frequently as necessary. Several lists of projects are awaiting attention. Overall, there is a disproportionate emphasis on print resources.

MIT's strengths, though, are as obvious and striking as its challenges. Staff at all levels feel a strong sense of ownership over the quality of library collections and services. Much work has been completed on GOBI workflows and EDI implementation. There is more standardization of practice than we expected across the libraries—driven by the combined efforts of ALS and the Processing Committee. The ISP concept has done a great deal to increase staff awareness of patron needs and priorities. There is willingness to move toward electronic-only for journals, especially in ESL. Although other libraries don't yet see this as a viable option, there is general acknowledgment that patrons don't use print journals when an e-version is available—and that more print could be moved offsite.

In this report, we offer a number of ideas related to both the monographs and journals workflows. We believe that additional changes to GOBI workflows, for instance, can further reduce searching, copy cataloging and other tasks. We also concur with MIT-generated recommendations to accelerate cancellation of the print version of dual-edition journals, to reduce some of the attendant tasks, and to take a much harder look at retention. We believe that "Processing" is something of a misnomer in relation to the work of these units, and suggest alternatives.

But because of the unique factors noted above, we also see the need to establish a broader context for these changes. So much work at MIT is driven by space constraints, use of two offsite storage locations, and local policies and control for each library that changes pitched toward individual libraries simply won't yield enough to change the current dynamic. We believe that now is the time to think more radically about the possibilities—if only to shift our viewpoint away from institutional "givens."

Therefore, R2's recommendations probably range more widely than expected. Highlights include:

- Develop a Libraries-wide strategy for print resources that minimizes acquisition, retention, and local holding. Increase regional/national cooperation on last copy archiving.

- Further reduce print holdings in divisional libraries to "the fewest and the newest"—i.e., much smaller but well-inventoried collections. Set quantitative parameters (e.g., last circulated or used) for identifying items for storage.

- Create a "virtual" central collection, based on electronic resources, article scanning, and rapid delivery of print materials from offsite storage. Reserve LSA for items without digital equivalents, and HD for items with digital equivalents. Focus on improving delivery.

- Adopt additional changes for monographs workflow, by making more vigorous use of approval plans, refining the GOBI workflow, further centralizing gifts, outsourcing copy cataloging, and reducing the time from receipt to shelf.

- Accelerate movement toward e-only journals, serials, and monographs wherever available. Supplement with a somewhat more risk-tolerant stance on archiving.

- Retain staffing levels in Processing units, but combine them with Circulation units as a single Access Support Unit for each divisional library.

Obviously, this direction has implications for the Processing Units, including a great deal more print-related work initially. It also has implications for Collection Managers, selectors, and ALS. But some longer-range reconception of user services provides a frame and rationale for this activity, and makes it more likely that current efforts serve that future. It expands the services and potentially the space offered to users, and aligns current processing activity with long-range plans. It increases the proportion of the collection over which central control can be exercised, while allowing more customization of local services. Longer-term, it will reduce the amount of effort expended on print.

Our recommendations are intended to be challenging. We recognize that they will require significant and sustained effort—much of which will need to take place alongside daily production work. Therefore, it is critical that MIT carefully analyze and evaluate each suggestion, and determine which to adopt, which to modify, and how to sequence them. Procedures should be put in place for collecting, validating and responding to staff feedback on R2's report, and incorporating it into the evaluation and implementation planning.

There is much to be proud of at MIT, including extensive and well-controlled electronic collections, a highly talented and dedicated staff. To a person, staff members and administrators were forthcoming and cooperative during the interview process, and have continued to provide helpful information via email and phone. We appreciate their commitment to the process. Although our report focuses on ideas for change, we are respectful of the work now being done at MIT, and feel privileged to have had such a close look.

Finally, a disclaimer, or at least an acceptance of reality: given the complexity of MIT's library operations and our limited time on site, we have undoubtedly misunderstood or misrepresented various details. We welcome correction and further discussion.

II. R2 Observations: MIT Strengths

- Staff with high degree of talent and commitment; especially high caliber of support staff (many of whom are enrolled in MLS programs)
- Compelling Strategic Plan for 2005-2010
- Integrated Service Point (ISP) concept works well for patrons, and offers support staff direct contact with users
- Steady cancellation of print serials
- Willingness among some Collection Managers to move to e-only
- DigProb tracking system is effective for tracking e-resource access problems
- IT capabilities embedded in library organization
    - Scripts and mapping for batch import, EDI and other routine processes
    - Facility with load tables
    - Data Warehouse provides extensive reporting capabilities
- Analysis of collections and processes is largely data-driven
- Commitments database—locally developed & supported initiative to collect all relevant subscription information (both p/e) in one place
- Batch approach to GOBI/EOCR workflow
- Extensive use of keyboard macros to reduce keying and clicking in Aleph
- EDI invoicing for serials, approvals, and (soon) firm-ordered monographs with a number of vendors and agents
- Rush processes work well
- Fledgling article delivery service from LSA
- Outreach programs from the Humanities and Dewey Libraries (going mobile!)
- Processes (especially Aleph-related ones) are as consistent as they can be, given the varying nature of the collections and Collection Managers
- Some use of electronic selection by selectors
- Openness to PromptCat and shelf-ready services for mainstream monographs
- Outsourced automated authority control via LTI
- Innovation-oriented approach; e.g., use of OCLC # in record load from Serials Solutions, allowing automatic update of combined p/e cataloging records
- Reduced flow of gifts for consideration; i.e., more qualifying via lists
- Strong quantitative approach with consistent results in Preservation re: end processing, binding
- Efficient Government Documents operation (53% depository w/ 1 FTE)
- Support staff involvement in meetings, cross-departmental committees
- Processing Committee has developed shared approach to training, documentation, process review and communication
- Effective and cordial relationships among Processing Units and SerCat/SerAcq.
- Processing units shaped around local priorities
- Processing Committee's shared Web page—procedures, best practices, source for training, sharing ideas

R2 Observations: MIT Obstacles to Productivity

- Processing units shaped around local priorities
- Disproportionate amount of time spent on print resources; 60+% spent on print materials, but 90% of staff hours absorbed by them
- No overall policies for electronic/print preference; storage criteria
- Title-by-title focus on selection of 20,000+ monographs per year
- Most selectors not using electronic selection capabilities
- 40-50% of collections are offsite—moves, "super-moves"
- Two offsite facilities: LSA and Harvard Depository
- Library shelves nearly 80% full
- Constant moves and maintenance for large segments of all collections
- Many staff noted a relatively high proportion of inventory problems—discrepancies between cataloging record and item
- MIT mailing address limitations prevent specificity in shipping directly to divisional libraries
- 30% of orders include notes, many of which involve exception processing
- Perception: ALS less effective on non-mainstream orders (sourcing, timing)
- 25% of books require bookplates
- Commitments database requires manual maintenance
- Average "receipt to shelf" time: unknown, but too long
- Cataloging backlog: the "wall" sometimes reaches 10-week wait
- PRE-CAT process involves multiple moves of titles, delays of more than a year
- Many uncataloged collections, including architectural plans, maps, pamphlets, fiche, etc.
- Lack of communication (occasionally) between CAMS and Preservation and divisional libraries; e.g., the recent "push"
- Lost/missing procedures are ineffective
- Redundant processes between Collections Services and Divisional Libraries (e.g., print serials check-in)
- Claiming report is cumbersome—not used consistently across libraries
- Journal collections inconsistently shelved—some by title, some classified
- Centralized control of holdings maintenance; corrections such as deletion of duplicate barcodes require screenshots be sent to Collection Services
- Only one shipment per day from Harvard Depository
- Limited use of student labor
- "Processing" is a misnomer
- Oh, that Aga Khan stuff...
- Weeding and storage decisions require significant selector involvement
- "Storage is cheaper than weeding"—indicative of an understandable short-term approach to problem solving; "deferred" decisions will return later
- No formal training program
- Differences between Aleph Web version vs GUI version (staff use GUI—more steps??)

R2 Observations: Tasks Not Fully Addressed:
As noted above, there are some tasks within the Libraries that are backlogged or being deferred in the press of daily operations. Of equal importance are areas of strategic development that may not be receiving adequate attention. The following list outlines examples of work not being done at present. In some cases, however, it's more accurate to say they are not being *fully* done, as most of these areas receive some attention.

- Gifts Web-page updates
- Updating documentation (post-upgrade) in Acquisitions
- Some statistics
- Reporting/Statistical support to selectors/administrators (from serials)
- Web-based "New Books" or "New Resources" list
- Faculty liaison work
- Selection of non-mainstream books—proceedings, technical reports
- Identification and cataloging of free Web resources
- Timely replacement of lost or missing items
- Collection assessment
- Legacy projects in ESL
    - Retrospective journal barcoding in Science
    - Gov Docs items uncataloged and unbound
    - Cleanup based on BRIO reports (inconsistencies between catalog & shelf)
    - IEEE Proceedings to storage (200+ series)
    - Science Front End Project (Reference weeding & re-labeling)
    - Science Storage
    - Media Room (300 items; new cases, labels, collection codes)
    - Film Reels (Engineering)
    - Uncataloged Technical Reports
    - Current Journals in Science (paper list updates; holdings issues)
    - Theses (remove those 10+ years old)
    - ASME section papers (unbound, incomplete records)
    - Browsing/Serendipity collections (stocking, re-labeling)
- Legacy projects in HUM
    - Government Documents Discards
    - Missing Journal issues
    - Backlog in preparing 19th and early 20th century journals for repair
    - Systematic barcoding of serials in Hum stacks
    - Binding of serials in Hum stacks
    - Serform project (summary holdings updates for cancelled, ceased and merged/split serial titles)
    - Journals record clean-up ("bad" records: no or incorrect holdings)
    - Reference collection review (new editions, transfer to stacks/storage

- Legacy projects in Dewey
  - Government Documents Discards
  - Journals storage
  - Serform project (summary holdings updates for cancelled, ceased and merged/split serial titles)
  - Journals record clean-up ("bad" records: no or incorrect holdings)
  - Commitments database clean-up
  - Replacements for brittle books
  - Systematic barcoding of serials in Dewey stacks
  - Serials binding
  - Fully class Dewey journals
  - "Temporary location" cleanup project (approx. 6,000 records)
  - Create an electronic finding aid for historical annual reports
  - Remove majority of reserve journals
  - Searching several large older gifts
  - Theses withdrawal/discard project (from 1985 and earlier)
  - Atlas case location change
- Legacy projects in Rotch
  - RVC – digitizing slides
  - Metadata for GIS resources
  - Collection-level or FGDC standard records for architectural plans
  - Finding aids or collection-level records for "huge" pamphlet collection
  - Maps – 3,000 of 5,000 uncataloged – need at least brief records
  - Storage of monographs
  - Rare Books cataloging
  - Retrospective barcoding of serials
- DDC conversion at LSA
- Uncataloged fiche (Huge number) at LSA: Dept of Energy reports, NASA, etc.
- Missing
- Journal use study
- Lost book report

Obviously, this list represents a real mix of tasks, some involving management time, others requiring hours from Collection Services, Processing Units and professional staff. Some are being partially addressed now, but all need more attention.

We suspect that this list is far from complete. We recommend that a comprehensive list of "tasks not being done" be made, and that Department Heads review it to confirm which can continue to be deferred, which eliminated, and which ought to be assigned higher priority. The intent is to make sure that those things not getting done are the right ones.

III. Strategic Recommendations

We believe that the MIT Libraries should undertake more structured, cross-campus thinking about the changing information environment; the role of the libraries on campus; deeper collaborative efforts with other libraries (local or not); changing space needs; a clearer vision of how the Libraries might look in five or ten years; and develop a formal strategy to guide the steady transition from print to electronic as the dominant information format. This context would help each library to make choices in a manner consonant with the emerging environment, and in harmony with each other.

Develop a Libraries-Wide Strategy for Managing Print Resources

Although each of MIT's divisional libraries is unique in its balance of print and digital resources, we believe there are principles that can be applied across the board. We recommend that MIT frame its print strategy boldly, but flexibly enough to accommodate variations in scale and content among the individual libraries.

First, given space constraints and the extensive work involved in storage, we recommend ongoing reductions in acquisition and retention of print journals and serials. The "Print Journal Duplicate Cost Estimation Report" projects savings of approximately $400,000 if all 2,000 journals in dual format were converted to e-only. In addition to those savings, which include subscription prices and staff time in both Collection Services and processing units, it seems reasonable to assume a reduction in ongoing maintenance costs: moves, record maintenance, resolution of inventory problems, and storage of bound volumes. Such a change would reduce the number of bound volumes per year significantly from its current level of 8,000. Cancellation of print versions of major proceedings and serials available in electronic format is projected to reduce the incoming volume of material by another 2,330 units annually. We urge an immediate decision and action on at least some level of cancellations.

Second, we recommend that MIT increase its efforts to establish a cooperative arrangement regarding last-copy archives. If this cannot be worked out with Harvard or within the Boston Library Consortium, perhaps NERL or the Ivies-Plus would prove more fruitful. Or seek an institution with a similar collection, such as CalTech. For low-risk titles, such as those in JSTOR or Project MUSE, a single print run within a given library cooperative would suffice for fail-safe archiving, and those lists should be divided among members, allowing MIT to discard all for which they do not have direct responsibility. This is happening in several consortia and shared storage facilities in the US, and should be made a priority here.

We recognize that early efforts in this area have not succeeded. But there is such compelling logic to shared responsibility for print archives that renewed efforts and leadership are imperative. Decisions at this level exert enormous leverage, potentially reducing binding, storage and maintenance workloads by thousands of volumes. It is not necessary that archived volumes be located nearby, as actual use is unlikely. It is necessary, though, to demonstrate the Libraries' commitment to a digital future by freeing hours devoted to print when possible. This is an excellent opportunity to move in that direction.

Somewhat more risky, but nonetheless plausible: Given Harvard's known predilection for retaining as much as possible, MIT could unilaterally withdraw and discard some print backfiles, if Harvard is known to hold them.

Redefine the Roles of LSA and HD

At present, MIT policy is to store monographs at HD, and most journal runs at LSA. (This in itself is an example of a library-wide policy that can be implemented because LSA acts centrally.) There is discussion of bringing back to Science some backfile material stored at HD because no digital equivalent exists. With the fourth floor of the LSA soon to be vacated by Archives, it seems an opportune time to rethink its use, and that of HD in the context of R2's other recommendations.

Assuming that onsite collections are substantially reduced, and that a cooperative last-copy approach is adopted for bound journals, we recommend that the role of the two remote facilities be redefined by service needs. LSA, with its 500,000 volume capacity, should be used exclusively for materials for which no digital equivalent exists.

Ideally, this would include a mix of bound journal volumes, monographs and serials. However, it's possible that bound journal volumes alone may fill the space; that would need to be investigated. Based on 2003 figures drawn from the table below, MIT holds 394,466 bound journal volumes. 8,542 were added in 2004.

	Onsite	Offsite	Total
ESL	195,052	69,625	264,677
Dewey	33,036	29,964	63,000
Humanities	28,846	11,020	39,866
Rotch	13,629	13,294	26,923
Total	270,563	123,903	**394,466**

If we estimate an additional 8,000 volumes per year for subsequent fiscal years, the current total is approximately 426,000. Even if all were retained and moved to LSA, there would be adequate space.

However, that won't happen, as the 426,000 total would be reduced significantly by applying criteria such as these:

- Bound volumes now stored in HD would be divided into two categories:
    - *Digital Equivalent Exists:* Print runs now stored in HD should be discarded unless MIT is responsible for the last-copy archive in a cooperative arrangement. In that instance, the bound volumes remain in HD.
    - *No Digital Equivalent Exists:* These titles would be moved to LSA, and incorporated into the article delivery program.

- Bound volumes now stored in LSA would be similarly divided; i.e., titles with no digital equivalent would remain in LSA, while those with a digital equivalent would be withdrawn and discarded, unless MIT was responsible for the last copy. Those titles would be transferred to HD.

- Bound volumes now held in each library would be divided along the same lines:
    - *Digital Equivalent Exists:* If backfiles of existing e-resource subscriptions are covered in the subscription or have been purchased, bound volumes should be withdrawn and discarded unless MIT holds last-copy responsibility. Those should go to HD. If backfiles are not included in the subscription, bound volumes should go to LSA. The holding library might also retain the backfile segment most likely to be used (e.g., most recent 5 years) onsite. But that retention should be rules-based, rather than requiring title-by-title scrutiny.
    - *No Digital Equivalent:* Bound volumes should go to LSA, again with the option to retain the most used segment locally, based on well-defined rules.

Application of these criteria will reduce the number of units to be held in LSA significantly, which would permit some serials that lack digital equivalents to be stored there as well. Perhaps those serials that lend themselves best to article delivery—i.e., those that are analyzed-- should be given priority, as they potentially offer another service advantage.

Optimizing the LSA for scanning and article delivery would improve both access and convenience for users. By housing all article-based material lacking a digital equivalent in a single location, the scanning/delivery

workflow can operate most efficiently. It will allow MIT to maximize the amount of material it can deliver to the user's desktop, which will help offset much of the inconvenience caused by reduced onsite collections (covered in our next recommendation). It may even be seen as an improvement.

As now, monographs would be stored in HD. Although they fit the LSA criterion (print resources without digital equivalents), desktop delivery is not feasible or even especially useful, so there is no advantage in housing them in LSA. (Fortunate, since there wouldn't be room!)

Reduce Onsite Collections to "The Fewest and Newest"; Much "Smaller, Well Inventoried Collections":

Users show less and less interest in print journals when electronic is available, according to many people we spoke to. We suggest that MIT Libraries take advantage of this to the degree that each collection allows, by reducing print journals held onsite to the most minimal level possible. In practice, this means print-only titles, and current-year issues where embargoes are in place, supplemented with the most recent backfiles for which no coverage exists.

A similar approach could be applied to serials and monographs. But instead of the current project-oriented approach to storage and weeding, we recommend that MIT establish rules that can be applied without imposing on selector time; e.g., all monographs that have not circulated within the past seven years are automatically sent to HD; all serials that have not circulated within seven years are sent to LSA. Reports based on these criteria could be run annually or semi-annually to hold onsite collections at the desired level.

Use of circulation statistics will help immensely in this area, at least for older titles. It seems an acceptable risk to send to HD any title that has not circulated in five, seven, or ten years—especially if it can be delivered within 24 hours. Similarly, it seems reasonable to send any monograph accepted as a gift directly to HD, unless there is something exceptional about it. And as much as one hates to admit it, a case could be made for sending even most new monographs directly there as well.

The rationale here is simply to bring onsite collections down to a size where they are more manageable and less labor-intensive, because the shelves are not so jammed. In some instances, it may be possible to claim additional space for users. By moving toward defined criteria for offsite storage, rather than title-by-title decisions, moves can happen more quickly. Volumes don't have to be staged for selector review. Selectors don't have to review them.

All of this rests on the premise of rapid delivery, however, which is addressed in our next recommendation.

Make Digital Collections, Article Delivery, Rapid Print Delivery, and Web-Based New Resource Lists Central Elements of User Service:
Since users seem to prefer the convenience of electronic access to print, it seems reasonable to prioritize desktop delivery of content. To make increased offsite collections viable, MIT will need to construct a fulfillment service that matches or exceeds availability in the stacks. Rapid and reliable delivery is the key. We see two possibilities here:

- 1st tier: For print content stored in LSA (print journals and serials without digital equivalents), accelerate development of scanning and article delivery directly to the user's desktop. In cases where content cannot be scanned or is wanted in its original, set a 24-hour delivery standard. Increase delivery frequency to twice daily.

- 2nd tier: For print content stored in the Harvard Depository (monographs and some serials), set a 24-hour delivery standard. This would require increasing the frequency of deliveries from HD to twice daily. For faculty or graduate students, consider implementation of office delivery of printed content.

The Library Services Annex/Off-Campus Collection becomes, in effect, a central closed-stacks collection.

For newly acquired titles, and especially for those that are now chosen for a Browsery or New Books shelf, it may be more effective to bring them to users' attention via a Web-based browsery. Entries could include cover scans, blurbs, tables of contents, and links to reviews. MIT could allow interested users to sign up for RSS feeds, to notify them as new titles in their disciplines are acquired. It will be important to build this browsery from a database, to allow automated updates. It will need to be searchable by subject or format. We have seen excellent examples of such a service, which, in addition to enhancing the user experience, can eliminate the need for new books shelves in separate locations, with the attendant location changes and exception processing. Some examples for your consideration:

http://trilogy.brynmawr.edu/cgi-bin/newbooks/newbook_choose.pl

http://catalog.library.colostate.edu/search/ftlist^bib341%2C1%2C0%2C350/mode=2

Don't Allow Onsite Collections to Grow

Once each Divisional library has determined its smallest workable collection size, it will be important to keep it within those boundaries. As incoming print volumes diminish, this will become less difficult, but annual moves of journals will still be needed, to discard previously embargoed issues, and to store in LSA additional backfiles of titles without digital equivalents. Monograph moves will also be needed, to push non-circulating books out to HD and make room for new ones. As digital equivalents become available for titles stored in LSA, those volumes will need to move to HD or be discarded.

In short, a storage/maintenance cycle similar to the current one will continue, but in a more mechanical, predictable fashion. The big gains for users would be in increased library space, and article delivery for content without a digital equivalent.

This series of recommendations is intended to stimulate thinking, and to provide a possible context for changes in management of print resources. Whether MIT adopts any of these particular ideas (several of which were suggested by ALS or Processing staff), we believe that a clearer strategic direction needs to be set before any staff hours are redeployed. Although the scenario described here will result in reduced effort on print in the longer-term, it will likely absorb more staff resources in the short term.

IV. Print Journals and Serials

It's sometimes useful to consider the investment of staff time in relation to annual, categorical expenditures. MIT's FY2004-2005 estimates of Materials Expenditures by Type suggest that approximately 65% of the materials budget is currently spent on print resources. This figure is likely overstated, and of course print is likely to decrease in years to come, though more rapidly in some libraries than in others.

Based on the following rough calculations, we estimate that nearly 90% of non-administrative staff resources are currently dedicated to print workflows.

- o eResources tasks are managed with approximately 3.3 FTEs in ALS.

- o We assume the remaining production hours in ALS are dedicated to the management of print workflows. We also assume that nearly 100% of staff hours in the Processing Units, Preservation, and the Annex are also focused primarily on print and fixed media. This equates to 90% of all non-administrative time available.

- o Note: this tally does not include Collection Managers, other selectors, staff in the branches, or those in cataloging, most of whom also dedicate their time to print resources.

As a rule, R2 believes it is reasonable that the percentage of staff time dedicated to print vs. electronic resources in ARLs reflect their respective expenditures. Staff hours also indicate organizational priorities, and in some libraries reflect decreasing patron demand for print and the increasing institutional commitment to digital. At MIT, however, it appears that severe space issues will continue to require greater than average investment of staff time in the management of print assets.

To cite a familiar example, MIT's "Selected Local Processing Statistics & Yearly Staff Hours" from FY04 shows a total of 29, 328 hours (roughly 17 FTE) dedicated to print. The 8,828 titles committed yielded 44,660 and 7,396 check-ins for journals and serials respectively; they also accounted for 20,152 claims, 8,542 bound journals, and contributed to 44,427 storage moves and 15,680 withdrawals. Although the workflows supporting these tasks are mostly quite efficient, the hours committed are disproportionate to patron interest and usage—and some degree of shift is clearly called for.

Some parts of the following recommendations have already been addressed in the Strategic Recommendations section, but bear repeating here, since they are intended to reduce print workloads. We should also note that much of journal management practice is surprisingly consistent from library to library, and that

remaining variations are driven by the nature of specific collections (such as the Aga Khan material) and priorities established by Collection Managers.

Print Journal and Serials: Recommendations

Reduce the Incoming Volume

As noted previously, this is where the greatest leverage for workload reduction can be obtained. Decisions made and implemented here could reduce time spent on print serials and journals by as much as 30%. Specific actions recommended:

- o **Implement e-only for some/most of the 2,000 titles in dual format**:
  The analysis has already been completed, and several scenarios suggested. Any choice will help, and at a minimum we would support the move to cancel Elsevier print and purchase selected backfiles. But the bolder you can be, the more workflow benefit will accrue.

- o **Implement e-only for major serials and proceedings:**
  Similarly, the titles have been identified and the benefits suggested. We recommend immediate implementation, which will reduce incoming volumes by 2,330—or just over 25%.

- o **Continue to reduce print reference and replace with e-reference:**
  E-Reference titles have proved among the most successful of eBook formats, and the number of titles available continues to increase, both for ready reference and topical works. Although a small percentage of the collections, print reference works create additional work, as superseded editions move to stacks, and older editions to storage.

- o **Retain the Commitments database to monitor availability of newly electronic titles:**
  At present, the commitments database provides the best single source of information about subscriptions and the electronic packages through which many e-resources are delivered. It remains an important tool in identifying titles that might be converted to e-only, and should be retained, at least until it can be determined to what degree Verde might serve the same functions.

Reduce the Number of Print Volumes Retained

These recommendations are likely to require policy decisions and involvement of AUL's, at least at the outset.

- o **Adopt a much more proactive approach to cooperative last-copy archiving and/or trusted digital archiving:**
  As noted earlier, we regard sharing of this responsibility as a high-yield enterprise, that should be pursued vigorously through as many avenues as necessary. Cooperative agreements of this type offer long-term efficiencies and cost-reduction to all libraries that participate, and it should be possible to strike a deal at least on low-risk titles (such as those in JSTOR or Project MUSE) within 6 months.

- o **Withdraw and discard print backfiles unless MIT has last-copy responsibility and/or trusted digital archives:**
  For all print journal (and serial) titles for which a partner library is responsible for the last-copy archive, MIT should withdraw and discard all backfiles from HD, LSA, and the library shelves. Retain in print only those current issues that are embargoed or precede the "moving wall." Discard those as they are incorporated into the digital offering.

Selectively Reduce Maintenance Steps

Although we actually support the University of Nevada's approach to print periodicals (cease check-in, claiming, and binding of all but the most expensive and problematic titles), we have found that most libraries don't, at least not on a large scale. MIT also has a higher proportion of expensive and difficult titles than most libraries. So we recommend a much more selective approach here:

- o **Stop check-in and routine claiming of titles that won't be bound:**
  Newspapers, weeklies such as the Economist, or popular monthlies such as Wired fall into this category. The list might include any titles where the price and risk are relatively low, or the title is also available electronically, such as Nature and Science. This won't have a major effect on workload, but as MIT experiments with it, gradual expansion to other titles may seem reasonable. If check-in is not done, routine claims should not be generated. Rather, patrons will report a missing issue, and staff can easily check DataSwetsConnect to follow up. The underlying assumption—that subscriptions mostly work—is really pretty reasonable.

- **Reduce routine claims—limit claiming to known problem titles**
  In our experience, routine system-generated claims are highly ineffective, and a plague upon the land. Prediction patterns can be very difficult to create, and it is far too easy to spew a list of claims out of any ILS. Within both Serials Acquisitions and the processing units, the monthly claim report, once reviewed, can result in actual claims for as few as 10% of the items listed. It would save hours every month if titles could be flagged with a claim or not claim code—limiting claim reports to those where claiming is most likely to be fruitful.

- **Reduce the effort to locate missing issues; decide to bind incomplete more often:**
  Except for titles where there is no digital equivalent, or where MIT holds last-copy archive responsibility, or titles above a certain price threshold, we question the cost-effectiveness (and even the need) to seek out missing issues. This can be a very labor-intensive process, unless an issue is readily available from a backfile dealer. We suggest setting specific parameters for when this should be done; in other cases, it may be preferable to bind incomplete—as some units are doing now.

- **Reconsider binding policies, especially for titles with digital equivalents:** Binding represents a $200,000 annual investment in materials that are likely to be little used. In cases where a digital backfile exists, users will choose that. In cases where no digital equivalent exists, binding may actually make scanning for article delivery more difficult. Consider moving to boxing or shrink-wrapping for most journal runs.

- **Allow holdings maintenance in processing units:**
  We recommend opening up Aleph permissions for holdings records to staff in processing units. Often, the necessary maintenance involves little more than removing a barcode number, but because processing staff cannot make changes, a screen print must be sent to 14E-210, and the volume held, delaying resolution of some of the most routine maintenance.

  Although it's traditional for catalogers to "own" this kind of maintenance, the workflow inefficiencies caused in MIT's decentralized environment, are too expensive. We recommend that the "rules" be adjusted to meet the local/physical requirements of the Institute.

Reorganize Print Holdings for Future Use

These ideas are described fully in the Strategic Recommendations section, and are simply listed here, because they directly affect print journals and serials:

- o **Reserve LSA for print journals and serials without digital equivalents**
- o **Build a full-scale scanning and article delivery system in LSA**
- o **Increase HD and LSA deliveries to twice daily**

In closing, a note about one recommendation we did not make, though a number of people suggested it: to move serials check-in to the processing units. First, if we understand correctly, this stream of 7,500-8,000 volumes per year is actually a mix of memberships, monographic series, reference works, and serials. Each category has different cataloging requirements. The processing units could really only incorporate the serials, which would necessitate dividing the list. If, as has been suggested, an additional 2,330 volumes were to be cancelled in favor of e-only, there would only be 5-6,000 units in total. Subdividing a task of that size seems to us to fragment the work too much.

V. Monographs

Approximately 17% of the materials budget is currently allocated to print books and we estimate that some 7.7 FTEs or 22% of available staff time is spent managing them. This might suggest an appropriate allocation of staff resources. If, however, we were to include the time of the collection managers, selectors and catalogers, the overall percentage would be very much higher, and we think, unnecessarily so.

Current New Monographs Workflow

The following is R2's attempt to summarize (new) book-related activities, from title identification to the final placement of books on shelves. Some of these tasks occur in the divisional libraries, some in central, and some in preservation. The process starts in the local units:

1. Paper slips are received, sorted (YBP's are pre-sorted by fund; some are tossed), and distributed to selectors
2. Various kinds and amounts of pre-selection searching is performed for CD purposes, most notably in HUM; reviews, catalogs, journals, slips, etc. are searched to identify previous editions, previous works by the same author, and other titles in the series.
3. For desired items, selectors assign a fund, a sub location if appropriate, a binding if not the default (paper for all except Rotch), and notes.
4. Between 30% and 50% of monographs are ordered with exception notes such as: intentional duplicate, binding preference, special location, notify, etc.
5. Some of these are manually searched in the divisional libraries to eliminate possible duplicates, but ALS is ultimately responsible duplication control.
6. Some titles are electronically selected in GOBI but approximately 75-80% of all order requests arrive in 14E-210 on paper.
7. All selections are reviewed and sorted for ordering, depending on the appropriate vendor. A quick workflow breakdown for new monographs was extrapolated from the Five Year Monograph Receipt Statistics. Approximate annual numbers may be low:

Acq Workflow	Approximate Annual #	Approximate % new monographs
YBP Firm/Slip Orders	7,700	43%
YBP Approval	4,600	26%
Non-Credit Card, Non-YBP Firm Orders	4,900	27%
Credit Card Orders	800	4%
Total	18,000	100%

YBP Firm Orders (paper-based order requests)

8. Titles that can be ordered from YBP are forwarded to students who enter ISBNs in GOBI, choosing the correct account number and fund code, and entering (student) initials using default and/or order templates heavily. General, Cataloging, and Processing notes are entered, and the orders are submitted to YBP via GOBI.
9. The GOBI order confirmation list is printed and bundled with the original order requests. In cases of just one or two orders, the GOBI confirmation number is recorded on the order request.

YBP Electronic Selections

10. When selectors use GOBI to communicate their selections, they are asked to email their GOBI Selection Acknowledgement to MonoAcq, where the list is printed. Selectors cc their Collection Manager on these emails.
11. These lists are visually scanned in ASL for accuracy. Notes are scanned to ensure (for example) that a bookplate note has been added when a gift/endowed fund is assigned, or to find RUSH notes.
12. These titles are also submitted by students as orders via Gobi.
13. The GOBI order confirmation list is printed and attached to the printed email.

All GOBI Orders (firm/slip or eSelections)

14. On a daily basis, YBP's Electronic Order Confirmation Records (brief bibs) are automatically loaded to Aleph.
15. Each order is manually updated in Aleph; a macro allows quick update of the Order Status, Additional Order Note 2, and Order Group for each item; each is then "Accepted".
16. A check-box is checked if the order is RUSH. If it's for a patron request, the patron record is attached and a hold is put on the book.
17. Orders that result in fund overages are statused DNB (Delayed, No Budget) and selectors are asked for an alternate fund assignment via email.
18. Aleph assigns a PO# to each order in the batch. This number is written on the slip or citation.

Non-YBP/Non-Credit Card Orders

19. The MIT catalog and OCLC is searched simultaneously by ISBN.
20. If there is no match in the catalog, a title search is performed to eliminate the possibility of a duplicate being ordered.
21. If it's not a duplicate, and there is a record in WorldCat, a macro is used to copy the WorldCat record into Aleph.
22. Various record maintenance is performed as needed (ex: URLs are deleted)
23. The bib record is pushed into the Acq Module.
24. If there is no WorldCat record, a brief bib record is keyed
25. Required data elements are entered including Library, Vendor, Fund, Price, Material Type, and sometimes a note.

26. The status is changed from New to RSV (for overnight release to the vendor) via email or EDI. A very few are printed and mailed.
27. The Aleph PO# is written on the original order request.
28. The batch of original order requests is checked against the Purchase Order summary the next day, primarily to ensure that all orders were completed and sent.
29. The orders and PO Summary are filed by date, for audit trail and problem-solving.

Credit Card Orders

Credit Card (primarily web-based) purchases account for 4% of all firm orders. This is the method used to acquire Out-of-Print titles, some RUSH orders, many fixed media titles, and other non-mainstream materials. Although there is an Aleph/SAP interface, it doesn't work for credit card purchases.

30. An online order is generated on various vendor websites.
31. A corresponding order is created in Aleph.
32. The pink Visa Purchase form is filled in manually, including Date, vendor name, vendor code, Aleph PO# or #s, Title or titles, Amount, S&H charges, and notes when appropriate (MonoAcq is currently looking for a way to print the necessary information from the system)
33. These purchases are recorded on the Visa log.
34. The pink forms are filed alphabetically by title. Each staff person who has a credit card has their own folder.
35. When credit card bills are loaded to SAP, an email is received in MonoAcq with details about the transaction, including the name of the person who made the purchase.
36. The pink slip is pulled and the Institute's numeric equivalent of the library's fund code is entered manually into SAP.
37. A "dummy" invoice is created in Aleph so that the funds get expended in Aleph, the order gets paid and closed, and Aleph matches SAP.
38. The pink form is filed into a verified folder and held as a backup for the audit trail.

All Firm Orders
39. A very few Aleph Purchase Order Reports are printed each morning, and manually reviewed to ensure accuracy.
40. Yesterday's order citations are checked against the PO Summary.
41. Claim letters print daily at the same time as the PO Summary and any POs. The time frames vary from 30 days for RUSH orders, to 60 days for US orders, to 90 days for foreign.

YBP Approval

42. GOBI Load Reports are printed weekly and reviewed for potential problems (primarily duplicates which may have come from HARRASSOWITZ)
43. The report is annotated with notes about duplicates; the book is flagged if a duplicate or if the fund is out of money.
44. A screen print is made for all duplicates for insertion in the books once they are unpacked and put up for review.
45. The load Report is filed.
46. Books are on review for two weeks.
47. Reminders are sent near the end of the review period
48. Books not reviewed are automatically accepted.
49. 400 (or fewer) rejected books are adjusted in Aleph and returned to the vendor each year.

eInvoicing

26% of all monographs are preceded by an electronic invoice. At the time of our visit, electronic invoicing was in place for approval invoices only. Work is underway to implement EDI invoicing for YBP Firm Orders very soon, increasing the percentage to 69% of all monographs.

50. Invoices are loaded.
51. Problems are resolved (like funds that are out of money)

Unpacking

52. Shipments are verified against the paper invoice.
53. Approval titles are flagged, sorted by library and fund and put out for selector review. Colored flags help to identify which books came in each weekly shipment so it's easy to identify the ones to pull at the end of the two week review period.
54. Non-approval titles are queued for receipt.

Completing Orders for Approval

"Order" records for titles received on approval must be completed manually, even when supplied with an EDI invoice.

55. Fund changes and new notes are entered into the order record.
56. A macro allows quick update of the Order Status, Additional Order Note 2, and Order Group for each item
57. Each is then "Accepted".
58. The invoice is then "loaded"
59. The Aleph invoice status is changed from REG to CHK
60. The line-item PO # is written on the YBP slip; one copy is re-inserted in the book and the other is put with all the other orders created that day for ALS back-up files.

61. The paper invoice is annotated with the vendor code, staff initials, EDI, the date the invoice was loaded, the first line-item PO#, a P for items with a library note, indicating that the Arrival Slip should be printed.
62. The paper invoice is inserted in first book and the cart is labeled for processing by students.

Arriving and Processing Books
63. The order record is retrieved in Aleph via PO# when possible, else by title, ISBN, vendor code, or whatever works.
64. The title is added to the invoice
65. A macro is used to "Arrive" each piece at the system prompt
66. A barcode is applied to the piece and wanded into Aleph, which is next used by CAMS for record matching an overlay.
67. An MIT property with date stamp is imprinted on the verso
68. The PO# is transcribed onto the page after the verso, in the upper left hand corner
69. The top edge of the book is stamped with name of the divisional library
70. A screen print is made if there are cataloging, processing, or Attention notes.
71. Books are sent to "The Wall" for copy cataloging
72. RUSH books get immediate handling and don't go to "the Wall".

Cataloging
Note: R2 did not review Monographs Cataloging, and we do not presume to understand how these steps work. We merely want to observe that Cataloging fits here within the workflow, and that both materials and records must receive attention before moving to the next workflow stage. Per those interviewed:
73. *The call # is transcribed on the verso and a new WorldCat record is overlaid.*
74. *If no copy is found, the item is considered "pre-cat". Some (All? Most?) pre-cats are delivered to the divisional library, and returned to 14E-210 one year later, for copy or for original cataloging.*

Preservation
Averaging four-day turns, 100-200 books flow through this area every day; each requiring approximately three touches.
75. Selector binding instructions are noted; additional binding decisions are made
76. Spine labels are created and applied, security strips are inserted, date due slips are adhered inside the back cover, and additional stamping is performed, and gift plates are applied to approximately 25%.
77. Some call numbers are edited for REF/HUM and for music scores.
78. Reference materials for other libraries get an extra sticker on the spine.
79. The book is routed to the bindery or to the appropriate divisional library.

Divisional Library (some variation in practice here)

80. Items are retrieved via wanding the barcode.
81. The spine label is checked against the call # written on the verso.
82. The item processing status is changed.
83. Date due slips are stamped with today's date (to indicate when it was received in the divisional library).
84. In most cases, recent receipts are put on new books shelves and circulation may or may not be restricted. In one library, new books are marked as such on the spine.
85. Special locations are assigned (either by the processing assistant alone, or in consultation with selectors; some special locations require additional labels and transcribed call numbers because dust jackets are temporarily preserved). There are 60 of these library specific locations, and include:
    - Aga Khan Collection
    - Science Atlas Case
    - Humanities Browsery
    - Consumer Collection
    - Humanities Detective Fiction
    - Impulse Borrowing
    - Various Media Collections
    - Various Reference Collections
    - Various Travel Collections
86. Books are (in some cases) sorted by librarian for a final review.
87. Various categories of titles are manually added to electronic new titles lists and subject specific web pages, including:
    - Virtual Browsery (Humanities)
    - Accessions Bulletin (Dewey)
88. At some point, temporary locations are removed when books are moved to the stacks. Eventually, many books are moved offsite, requiring additional record maintenance. When moved to HD, and per their requirement, a new barcode must be applied to the top left corner of the front cover.

Monographs --- Recommendations

Processing Units in the divisional libraries are working at capacity to provide the services and perform the tasks asked of them. In our opinion, they have already standardized practices to the extent possible. Difficult space issues, collection specific locations, and selector priorities impose non-standard routines that are beyond the control of the processing units per se.

As we described above, ALS and Processing Unit staff hours currently allocated to new monographs workflows are pretty well in synch with the money spent to acquire them. Nonetheless, R2 believes that there are several opportunities for increased efficiency. By making the changes described below, R2 believes that MIT could free significant staff time to be redeployed as library priorities dictate.

Use the Approval Plan More Vigorously

Every title that arrives automatically cuts the staff time by more than half. The approval plan currently brings in 26% of all new monographs and 37% of those acquired from YBP. It is typical for large academic libraries to receive at least 50% of their mainstream English Language monographs on approval. For MIT, that would be an increase of approximately 1500 titles per year.

As you know, there are a variety of ways to expand the plan. One option would be to include titles reviewed in popular reader's guides. This kind of coverage would also reduce the manual weekly searching currently performed. More specifically, the YBP approval plan could be expanded to include anything reviewed in the:

> *Chicago Tribune* (4-5 titles/week)
> *Globe and Mail* (7-15 titles/week)
> *Harvard Business School's Working Knowledge* (3-4 titles/week)
> *Nature* (3-4 titles/week)
> *New York Review of Books* (12-15 titles/week)
> *New York Times Book Review* (22-27 reviews/week; 5-7 best sellers/week)
> *New Yorker* (4-5 titles/week)
> *San Francisco Chronicle* (10-12 titles/week)
> *Science* (3-4 titles/week)
> *Times Literary Supplement* (37-43 titles/week)
> *Voice Literary Supplement* (4-6 titles/week)

Eliminate Approval Returns

Over the last 12 months, the approval return rate has been approximately 8% or 426 titles valued at $24,708 (avg. net price $58). As a rule, an 8% return rate is too high and we recommend working with YBP to reduce it. On the other hand, approval returns at MIT represent just 2% of all print monographs expenditures.

Given the need to reduce costs, it may be appropriate for MIT to eliminate approval returns entirely. This would also eliminate the need to stage new books on the approval review shelf for two weeks.

In nearly every case, books are reviewed again (anyway) in the divisional libraries, where the selectors could still have an opportunity to track "virtual" returns; or those books that the library would not otherwise accept. Electronic new titles feeds (described elsewhere) could also serve to keep selectors informed about new monographs entering the collection.

In other major research libraries, expanded use of approval plans and elimination of approval returns is often an administrative mandate, specifically aimed at reducing the focus on item-by-item procedures, reducing costs, and facilitating outsourced cataloging and shelf-preparation. Budgets are sometimes adjusted to ensure equity across disciplines.

Eliminate Receipt of Paper Slips from YBP

Here too, we see the administration having a role in establishing new, system-wide policies. Encourage selectors to view their slips online, or print them locally. This decision will require increased familiarity with GOBI and will also facilitate electronic selection (next). Please note that we do not see this as a radical idea. This strategy has already been adopted by very many libraries around the country.

Require YBP-Type Orders To Be Selected Electronically in GOBI

All mainstream, English Language monographs should be selected online. If selectors refuse to use GOBI to communicate their selections, Processing Units would be asked to take on the responsibility.

Non-GOBI orders would still go to 14E-210 in paper form.

Eliminate Paper Audit Trails in MonoAcq

At present, GOBI Electronic Selection and Order Confirmation Lists are printed in MonoAcq as a way to get them into the student's workflow, as a way to scan for accuracy, and as a way to create an internal problem solving/audit trail. Original order requests are checked against the daily PO Summary. PO Summaries are filed by date, for audit trail and problem solving purposes.

Except for the VISA CARD audit trail, which is apparently required by the Institute, we suggest that ALS eliminate these paper-based back-ups. Rely on the selectors to ensure selection accuracy, and rely on the EOCR load to identify problems. Whenever possible, R2 recommends elimination of paper files that replicate data stored in the system. When a problem arises, solve it without going back to learn how it occurred. In addition to saving the time spent

printing, filing, and researching the origin of the problem, this approach can also minimize the tendency to assign blame.

Stop Acquiring Reference Books in Print when E-version exists

Electronic reference has become the norm in most academic libraries. It is generally agreed that this category of eBook enhances the user experience, while saving space, and reducing exception treatment.

Over the longer term, eliminate print reference as a physical location. Pseudo or highly advanced reference materials should be shelved in the stacks.

Stop Acquiring Monographs That Have an Electronic Surrogate

One advantage of eBooks is that you can delay purchase without risk of the title going "out-of-print". Rather than seeking to predict use, it becomes possible to buy on demand. If the title is one you would typically order, choose to download a catalog record instead, and display it with an eBook icon. Patron interest should trigger the immediate acquisition of the e and/or p (perhaps POD) book.

At the very least, this strategy could be used for more marginal titles, or those about which the selector might be on the fence.

Reduce the Number of Special Locations

In addition to Reference, there are several other special locations that should be eliminated. The cost of the special handling, we think, exceeds the benefit. Other, more systematic solutions could be devised that could provide the same or similar service, for a fraction of the cost. These materials could be flagged in the catalog for easy retrieval; or they could be listed by genre on a library web page. In the case of travel guides, one might imagine that they stop being acquired at all. Are they mission critical? In any case, every effort should be made to eliminate non-standard locations. At the very least, these special location designations should be made at point of order. Some examples include:

- Detective Fiction
- Travel Guides
- Consumer Collection
- Census Collection
- Graphic Novels

There may be no alternative to format specific locations, including maps, pamphlets, atlases, scores, oversized, and non-book media.

Reduce the Number of Discretionary Moves

Given the severity of space constraints on campus, some of the most significant shifting projects are unavoidable. It does appear, however, that there is discretionary movement of books that could and should be eliminated.

A temporary location automatically doubles the number of times a piece must be handled, and the number of times its location (and perhaps status) must be adjusted. All temporary locations are therefore suspect in terms of optimal workflows. There are at least two types of temporary locations that we think should be reconsidered:

- Browsery/New Titles Shelves/Impulse Borrowing
  R2 applauds the intent to bring new titles to the attention of users. The amount of physical labor and record maintenance required to maintain these temporary locations, however, is something we have to question. Would it be possible instead, to generate (centrally and systematically) an enhanced list of new titles, parsed by subject/format/genre? If the list included links to cover scans (from GOBI for example), slide shows could be set to operate on monitors in each library. The patron could click on the cover scan that piqued his interest to see the flap copy and the shelf location. RSS feeds could be used as well.

- Pre-Cataloged Collections
  It is clearly inefficient to route uncataloged titles to divisional libraries and then back to central again a year later. This practice breaks every workflow rule and should be eliminated.

Adopt Rules-Based Management of Aging Print Monographs

At every point in the various monographs workflows, selectors make item-by-item decisions about which ones to buy or accept as gifts, which ones to move, which ones to replace, and which ones to bring to the attention of users. Throughout the libraries, this approach narrows the focus and drives up costs. This approach also assumes that selectors should seek to predict or induce use.

R2 recommends that the libraries as a whole establish rules for routine decisions, that will eliminate much of the back and forth nature of current practice. This will allow routine maintenance to be performed more systematically and thereby more efficiently. Pro-active rules should be established to imitate as closely as possible, the item-by-item thought process currently applied by selectors. For example:
- Lost and Missing Books should be automatically replaced if and only if:
  - It circulated within the last year
  - It is in print

- o It is not available electronically
- o It costs less than $75
- o It is not held by another library on campus
- o Etc.

- A monograph should be withdrawn if:
  - o It is in serious disrepair AND it has not circulated in 20 years
  - o It is held in another library on campus AND it has not circulate in 5 years
  - o Etc.

- Shifting and Storage
  - o Titles should be moved to HD if they have not circulated in 7 years
  - o Etc.

- Acceptance of Gift Books
  - o A gift book should be accepted for the collection if it fits the approval profile; it is in good repair; it does not duplicate something already held
  - o Titles published prior to 1900 should be put out for selector review

Fully Centralize the Gifts Workflow and Send Immediately to HD
Managing the flow of gift books is especially cumbersome at MIT. Although administration of the gifts process has been centralized, there is a great deal of disparate receiving and decision-making. The volume is significant, and the costs are high.

Considering the various levels of pre-acceptance activity across campus, we conservatively estimate that two FTEs are dedicated to the identification, counting, acknowledgement, transport, sorting, searching, and decision-making on some 14,000 donated pieces annually. (Note: this number is dramatically down from previous years.) Approximately 3,049 of these were added to the collections last year, likely requiring another FTE to count, catalog, mark, receive and shelve those accepted; and to sell or dispose of the remainder.

The financial question is obvious: Is it cost effective to dedicate up to 3 FTE ($131,250) to acquire 3,049 sometimes (often?) marginal books, and to earn $16,281 in revenue from community and dealer book sales?

It may be equally important to ask whether the community service aspect of the gifts program is mission critical. Should the MIT libraries continue to offer

faculty and alumni this kind of public service on a continuing basis even when space constraints have become the single biggest concern?

And even more importantly, what are the opportunity costs? What could those 4 FTE be doing instead?

To the extent possible, R2 recommends elimination of the gifts workflow. If (as we heard) the community service aspect is felt to be mission critical, we recommend that the process be centralized in its entirety. A "profile" similar to an approval profile should be applied as early as possible in the process; and as now, working from lists when possible. Those that don't fit the profile (including subject and non-subject qualifiers) should be discarded immediately. Those that fit the profile should be cataloged and sent directly to HD.

Our thinking here assumes that accepted gift books are not core to any of the collections; else they would have been acquired already. With more than 30% of collections offsite already, it is safe to assume that these are categorically not the titles that should be prioritized for inclusion in onsite collections.

Eliminate Non-Critical Marks, Stamps, Labels
This may seem like a trivial matter, but as we see it, each step that could be eliminated, should be. As we understand it, some or all of the following are applied to each monograph:

- An MIT property stamp on verso
- The line-item PO# is transcribed on the page after the verso
- The top edge of the book is stamped with the name of the divisional library
- Call # is transcribed on the verso
- A bar code is applied
- Bookplates/gift plates are applied to 25% of items
- Spine label is adhered to the spine
- A security strip is inserted
- A date due slip is adhered inside the back cover
- The divisional library receipt date is printed on the top of the date due slip
- A secondary (and sometimes tertiary) label with transcribed call number is adhered to the dust jacket
- Special location label
- New book sticker on the spine
- Accompanying Material sticker (for books that come with a CD for example)

Some of this marking is required by the next step in the workflow, but some may be redundant and/or outdated. For example: with barcodes applied in ALS, is there still a need for the PO# and/or the call number to be transcribed in the book? There seems to be little need for the date to be penciled onto the date due slip when received in the divisional library. Is the date due slip necessary? And of course, outsourced shelf-preparation would eliminate all or nearly all of this piece work for some 12,000 units.

Place All Barcodes on the Front Cover, Top Left Corner
The Harvard Depository requires this placement and given the fact that so much print material will eventually be sent to storage, it would make sense to place the original barcode on the front cover. At present, almost all books must be re-barcoded prior to being sent to the Harvard Depository. It is conceivable that this change would also make it easier and faster for circulation, eliminating the need to hunt for the barcode. With an increasing number of self checkout machines, a front cover location will be easier for users as well.

Expand Local Record Maintenance Authority
It is inefficient for screen prints and centralized maintenance to be required for routine withdrawals and other monographs holdings maintenance. We recommend allowing monographs staff in the divisional libraries to:
- Delete mono item records for duplicate copies
- Delete mono holdings records
- Add duplicate copies/item records to mono records

Cataloging
The parameters of this audit specifically exclude cataloging. However, as represented in the new monographs workflow above, cataloging occurs at the midpoint of the print workflow. It is impossible to ignore the relationship and the influence it has on the production steps that precede and follow it. We therefore include our observations on the topic, and to advance workflow coherence, we suggest that you consider (or reconsider) the acquisition of third-party records.

Based on information gathered during the interview process, new books awaiting copy cataloging often queue for up to ten weeks. This fact, in addition to the volume of uncataloged collections throughout the libraries points to the need for increased in-house cataloging capacity and a more streamlined approach for new books. Acquiring third-party records for the mainstream materials will speed those titles to the patron and at the same time, will free in-house catalogers to focus on cataloging backlogs of older materials.

The Expense of Vendor Supplied Copy Cataloging
As we understand it, MIT considered PromptCat and/or YBP records at some point in the past, and decided against them due to lack of available

funding. Full, shelf-ready services would likely cost $5 per title, or $61,500 per year for the current YBP (approval and firm order) stream. If MIT decides to curb its acquisition of print journals as discussed elsewhere, it may be practical to redirect some of those funds toward this initiative. This is of course the biggest single pre-requisite to acquiring shelf-ready books, described below.

YBP Provisional Plus Service

MIT may already be familiar with YBP's Provisional Plus record service. This service provides corrected Full and Core Level Copy from LC, CIP upgrades, and YBP Provisional Plus records for which LC copy is not available. Prov Plus are not full cataloging records but they provide a single LC Subject Heading and full LC Classification. This level of service ensures that every book shipped from YBP (although not from Lindsay & Croft) can bypass the local cataloging queue. This is the service level we recommend for MIT.

We should note that the University of Chicago adopted Provisional Plus records in 1996 and has retained them without upgrade (or complaint) in their OPAC. It might be worthwhile to have a conversation with Judith Nadler or Jim Mouw on this topic.

It seems more likely that MIT would opt to overlay fuller records as they become available. A systematic rather than manual process would of course be preferable. Some libraries have utilized a Marcadia service for this kind of subsequent upgrade.

Adoption of this approach will reduce the incidence of RUSH cataloging/processing requests.

Outsource Shelf-Prep to YBP for Firm and Approval Streams

Since vendor services are usually cost-competitive with work done by the library, the primary advantage is speed to shelf. Depending on the specific contract for cataloging services, some or all of the 12,300 monographs acquired from YBP could be delivered to the divisional library within 1-2 days of arrival.

The initial set-up would be somewhat time-consuming. At present, divisional library titles are recognized by YBP via fund codes, and books for all locations are delivered on two or three primary accounts. If library specific marking is deemed critical, each library will have to receive books on its own account, with its own shelf-prep specification.

Not wanting to oversimplify, we should mention that this decision will require a new account structure, and a reliable way to parse orders by library. Electronic

selection in the divisional libraries will facilitate this task. It will also be necessary to establish separate approval profiles for each library. This may be less daunting, as fund codes are already embedded in the profile. R2 suggests that this initial nuts and bolts investment will pay off in the long run, and will magnify the workflow benefits already realized via the GOBI/EOCR procedures in ALS. .

Staff time previously spent on cataloging and physical processing can eventually be redirected to other tasks.

Eliminate Check-in of YBP Monographs in the Divisional Libraries
If new books arrive from YBP fully cataloged and ready for the shelf, it will still be necessary (we think) for each item/holding record to be maintained manually in Aleph. This should happen as now in 14E-210. At this step, however, the location and status should be finalized, and the books should go directly to the shelf in the divisional library. No secondary check-in should be performed for this stream of books.

VI. Organizational Recommendations

Depending on the degree to which MIT adopts R2's recommendations, significant staffing shifts will be needed, as new workloads and processes are defined and prioritized. We offer the following additional suggestions on staffing in support of our previous recommendations. We recognize, however, that some initiatives (e.g., a robust article delivery service) will require substantial investment—and that funding constraints may govern the extent and pace of these changes.

Merge Processing and Circulation Units into New "Access Support" Units in each Divisional Library: Implied throughout this report, R2 believes that the Processing Units should be maintained, perhaps under a new name, and that currently open positions be filled. We are impressed with what the processing units have accomplished in terms of training, cross-training, inter-library standardization, and information sharing. The Processing Web Site is testament to the comprehensive documentation and shared practice that's already in place. The Processing Committee has created the precedent and the will to communicate across units, to solve shared problems in a consistent way, and to continue to seek more efficient ways of doing things.

There seem to be natural affinities with the Circulation Units, as recognized in the recent merger of the two Committees. The problem-solving and information-sharing approach can be extended and reinforced, and doubtless new ideas will emerge from the pairing. As is already the case in some situations, Circulation staff and processing staff often perform tasks traditionally assigned to the other. These merged work groups could be called Access Support Units, thereby solving the misrepresentation and diminished status inspired by the "Processing Unit" label. Organizationally, larger units offer greater flexibility in the face of major projects. In future, once the big moves and legacy maintenance is accomplished, staff in these units can provide more extensive user services and training, community outreach, article delivery, and digitization of locally produced content.

Maintain Staffing Levels in the Processing Units: Stripping down the onsite collections and bringing the new definitions of LSA and HD to bear will require vigorous and flexible processing support in the divisional libraries for some time to come. In the short term, even more print-related work will be necessary, as more material is moved offsite and rearranged.

Continue to Centralize the Acquisition, Cataloging and Access Maintenance for Mainstream E-Resources: Collection Managers and selectors are in need of additional support for non-print, non-mainstream collection development initiatives, like identifying non-Elsevier Proceedings, scoping relevant blogs, and generally adapting to Web and Library 2.0. It makes good sense to centralize the acquisition, cataloging and access

maintenance for mainstream electronic resources. It also makes sense that discipline specific support for non-print resources can best be provided by those most familiar with the existing collections, faculty, staff and patrons. In future, we think, the library must increasingly point to resources rather than own them, particularly those that reside on the Web. Without commercial management support (as exists for books and journals), resource identification, promotion, descriptive, and training tasks will increasingly fall to the support staff in the divisional libraries.

If the monographs workflow is to be streamlined per the ideas we offer, staff hours will be released, but they will be primarily Selector, ALS, CAMS, and ALS/Preservation Student hours. Since these are "central" hours, it will be convenient to dedicate them to eResource maintenance and problem solving, or whatever other centrally managed initiatives are underway.

If e-only decisions are made for those journals that are available electronically, a small number of hours (per the Print Journals Duplicates Cost Estimate) will be released across the system. Until these changes are implemented, it is difficult to predict particulars.

Review Legacy Projects: A careful review of the extensive lists of pending or deferred "projects" may be a worthwhile accompaniment to the evaluation of R2's recommendations. Many of the legacy projects may be assigned a different priority in light of changes in direction. Each project must be considered, and officially abandoned or finally accomplished, if aging print assets are to be managed responsibly. Some of these projects are likely prerequisites to the massive shifting we recommend.

Maintain Staffing Levels in Central Technical Services; Gradually Shift Emphasis to E-Resources, Scanning, Article Delivery, More Frequent Print Delivery and Web-based New Resource Lists: If we understand correctly, management of e-resources could still benefit from additional support, and we believe centralized management makes sense. The changes we suggest, especially the reduction of onsite collections, all rest on an assumption of rapid, convenient delivery of remote content to users, whether digitally or physically. The existing infrastructure (staff, systems, and logistical support) will require expansion. Management will need to define service standards and enforce them. Night and weekend coverage will be needed. More scanning equipment will be needed, as will trained staff to operate it. In short, the resources required will be enormous, if an acceptable level of service is to be achieved. But it may prove a cost-effective alternative to building new library space. Finally, development of Web-based new titles lists, along with associated services such as RSS feeds, will benefit from a single design and central infrastructure and staffing.

VII. Benefits and Costs

For the purposes of the following estimates, R2 assumes that MIT will implement all or nearly all of our recommendations. We recognize that to be unlikely, and have tried to provide enough detail so that these numbers and projected outcomes can be adjusted to coincide with those recommendations MIT does decide to pursue.

Reduced Workloads (Annual):

- Eliminates distribution of 20,000+ YBP slips
- Reduce number of firm orders created by 1,500 (due to expanded AP)
- Eliminate item-by-item searches:
  - In OPAC/OCLC   7,700
  - In GOBI: 7,700
- Eliminate 12,000 WorldCat downloads and overlays of brief records
- Eliminates copy cataloging for 12,000+ titles
- Eliminates physical processing for 12,000 titles
- Eliminates returns to vendor or 400+ titles
- Eliminates receipt of 10-12,000 journal issues; check-in of 15-17,000
- Eliminates receipt/check-in for 2,300 serials/proceedings volumes
- Eliminates 5,000 routine claims
- Reduces time in shelving and shifting
- Reduces print volumes in storage by [unknown number]
- Reduced location and status maintenance for discretionary moves
- Eliminates check-in in divisional libraries for 12,000 monographs
- Relieves selectors of item-by-item storage decisions
- Relieves selectors of title-by-title selection decisions for mainstream monographs
- Eliminates delays in identifying items for storage

Improved Service

- Receipt to shelf in one day for 12,000 monograph units; eliminate potential 10-12-week delay due to review shelves and "wall." (The 12,000 assumes 11,300 shelf-ready titles from YBP and 700 (of 1,000) from L&C.
- Reduced need for rush cataloging & processing
- 24-hour delivery of print material from LSA and HD
- Reduces delays from movement back and forth of screen prints for holding maintenance
- Article delivery for all print journals & serials without digital equivalent
- Increased space for users in divisional libraries

Costs and Offsets: One-Time

- Reorganizing LSA to include only titles without digital equivalents
- Establish scanning and article delivery systems and processes
- Reduce divisional library onsite collections
- Define, test, and refine cataloging specifications with YBP
- Define processing specifications with YBP

Costs and Offsets: Ongoing

- YBP Cataloging (Prov+) and physical processing (12,000 @ $5): $60,000 (offset somewhat by reduced WorldCat download charges)
- Twice/day delivery from HD
- Staffing for Article Delivery service

VIII. Implementation

As the length of this report attests, R2 seeks to provide the broadest possible range of recommendations. We expect that some of them will challenge existing practices and even values. We fully understand that MIT must evaluate them, and decide which can benefit your organization. Some will be ignored or discarded, others modified to better fit your environment. But we urge careful consideration of them, because we know they can create new capacity within your operations, even as they push you beyond your organizational comfort zone.

We estimate, conservatively, that implementation of most of these recommendations represents 12-18 months of concerted effort. It will be important to think about how to sequence them, and to accommodate dependencies and communication with participants inside and outside the Libraries.

In the following chart, we've listed 43 recommendations, indicating for each whether we think it should be addressed in the first or second phase of implementation. Primary recommendations are those "low hanging fruit" that seem most obvious, may already be underway, or may provide the biggest/most immediate benefits in terms of freeing capacity. In some cases, they are required first steps, upon which others hinge. Secondary recommendations will be somewhat more difficult, either logistically or culturally but may offer even greater workflow advantages. We like this model because it can serve as a brainstorming/prioritizing rubric, and can suggest first, second and even third steps in a staged implementation.

	Page	Recommendation	Primary	Secondary
		Strategic Recommendations		
1	11	Develop a Libraries-Wide Strategy for Managing Print Resources	•	
2	12	Redefine the Roles of LSA and HD	•	
3	14	Reduce Onsite Collections tp "The Fewest and The Newest"; Much Smaller, Well-Inventoried Collections	•	
4	15	Make Digital Collections, Article Delivery, Rapid Print Delivery, and Web-Based New Resource Lists Central Elements of User Service	•	
5	16	Don't Allow Onsite Collections to Grow		•
		Journals and Serials		
	18	**Reduce the Incoming Volume**		
6	18	Implement e-only for some/most of the 2,000 titles in dual format	•	
7	18	Implement e-only for major serials and Proceedings	•	

8	18	Continue to reduce print reference and replace with e-reference	•	
9	18	Retain the Commitments database to Monitor availability of newly electronic titles	•	
	19	**Reduce the Number of Print Volumes Retained**		
10	19	Adopt a much more proactive approach to cooperative last-copy archiving		•
11	19	Withdraw and discard print backfiles unless MIT has last-copy responsibility		•
12	19	Consider discard of backfile runs also held by Harvard		•
13	19	**Selectively Reduce Maintenance Steps**		
14	19	Stop check-in and routine claiming of titles that won't be bound	•	
15	20	Reduce routine claims—limit claiming to known problems titles	•	
16	20	Reduce the effort to locate missing issues; decide to bind incomplete more often	•	
17	20	Allow holdings maintenance in processing units	•	
18	20	Reconsider binding policies to reduce binding		
	21	**Reorganize Print Holdings for Future Use**		
19	21	Reserve LSA for print journals and serials without digital equivalents		•
20	21	Build a full-scale scanning and article delivery system in LSA		•
21	21	Increase HD and LSA deliveries to twice daily		•
		Monographs		
22	28	Use the approval plan as vigorously as possible	•	
23	28	Eliminate approval returns		•
24	29	Eliminate receipt of paper slips from YBP	•	
25	29	Require YBP-type orders to be selected electronically in GOBI	•	
26	29	Eliminate paper audit trails in MonoAcq		•
27	30	Stop acquiring reference books in print		•
28	30	Stop acquiring monographs that have an electronic surrogate		•
29	30	Reduce the number of special locations		•
30	31	Reduce the number of discretionary moves		•
31	31	Adopt rules-based management of aging print Monographs	•	

		Monographs (continued)		
32	32	Fully centralize the gifts workflow and send immediately to HD	•	
33	33	Eliminate non-critical marks, stamps, labels	•	
34	34	Place all barcodes on the front cover, top left corner	•	
35	34	Expand local record maintenance authority	•	
36	35	Use YBP Provisional Plus Service	•	
37	35	Outsource shelf-prep to YBP for firm and approval streams		•
38	36	Eliminate check-in of YBP monographs in the divisional libraries		•
		Organizational Recommendations		
39	37	Merge processing and circulation units into new Access Support Units in each divisional library	•	
40	37	Maintain staffing levels in Processing Units	•	
41	37	Continue to centralize the acquisition, cataloging, and access maintenance for mainstream e-resources	•	
42	37	Review legacy projects: abandon or prioritize	•	
43	38	Maintain staffing levels in Central TS; gradually shift emphasis to eResources, scanning, article delivery, more frequent print delivery & Web-based New Resource lists.		•

IX. Conclusion

Again, our charge was to analyze print workflows in light of profession-wide best practices, and in the context of MIT's unique environment and culture. In particular, we were asked to answer three fundamental questions:

1. Can MIT reduce the time spent managing print collections?

   Not yet. A long term strategic vision must be developed, which should minimize and direct the acquisition, shifting and storage of print resources. Once established, this vision is likely to inspire a spike in the physical movement of material, requiring a large amount of technical and manual staff support within the divisional libraries.

   In terms of monographs workflows in particular; yes, we think it's possible to reduce time spent by eliminating various traditional practices, by further reducing the flow of gifts, by reducing selector discretion at the item level, and by outsourcing copy cataloging and shelf-prep for mainstream English Language Monographs.

   In terms of print journals and serials; a marginal reduction if possible in short term if a significant number of eligible titles move to e-only and maintenance tasks are selectively reduced. And in the long run; yes, after new storage strategies have been implemented, and as fewer volumes are acquired and retained.

   In terms of Government Documents; we think not, except as the volume of print is reduced by the GPO, or again, if a local decision is made to reduce the number of documents acquired. In our experience it is unusual for a single FTE to manage a 53% depository.

   Finally, to some degree, it is simply a choice. MIT can decide to reduce time on print if the administration is willing to mandate action, and tolerate low-level consequences and some degree of risk.

2. Would increased standardization across libraries reduce costs?

   Yes, but not in terms of "processing" per se. R2 believes that the only standardization that will yield significant savings will be at the administrative/policy level. For example, if all new titles were centrally and systematically compiled into a rich, categorized, user friendly, interface or feed for patrons and selectors, all new titles locations, and most division specific "marketing" efforts could be eliminated.

3. Is the current division of tasks between Collection Services and the divisional libraries efficient and effective?

Yes. We suggest a few minor shifts in terms of record maintenance, electronic selection in GOBI, and gifts management, etc. For the most part, however, it would be impractical and/or impossible to centralize the core responsibilities of the Processing Units currently performed within the divisional libraries.

Recommendations from outsiders can have enormous value, but naturally they have limitations. Our observations and ideas are based on only a few days' immersion in MIT's processes, systems, and culture. We're certain that we've mistaken some of what we heard and saw, and that our recommendations will need scrutiny by those of you closest to the situation.

We look forward to discussing this report in more detail, once you've had time to read it. We thank the staff at MIT for participating in this process. Although there is a great deal of opportunity for improvement, the MIT Libraries have been built on a strong foundation, through the efforts of many dedicated people. Our recommendations seek to build on that foundation, and accelerate MIT's creation of its next generation of library services.