Inventory Application Service

Service Level Expectations

Service Definition

Service Description
The Inventory Application Service consists of technologies and tools which support the business services used to manage the products acquired through Supply Chain for the university. Inventory Application Service is a flexible, comprehensive inventory management system that enables increased inventory accuracy and customer service levels and, at the same time, reduces carrying costs, labor costs, and inventory write-offs. Services are provided using enterprise resource planning (ERP) tools, along with custom and vendor-supported applications. Collectively, the ERP tools and applications are called M-Pathways, and are accessible via web-based Wolverine Access. Customer and user support is also provided to ensure strategic and optimal use of these tools.

Intended Consumers
- **Customers**: The Supply Chain Management team at the UM Health System provides the financial infrastructure and services essential to being one of the world’s greatest health systems. ITS partners with them to provide the University Health community with robust and secure Inventory Management applications and services that support these business processes. The executive directors in the UM Health System for Materiel Services, Value Analysis, Contracting, and Transactional Purchasing are the key customers who provide oversight for inventory management services provided to the Materiel Services Warehouse, Operating Rooms and Laundry Services.
- **Users**: The Inventory Application Services are used primarily at the UM Health System. Additionally, Dental Stores, part of the Dental School, also uses this service to manage their on-premise supply inventory based on agreements with UM Health System. The services are used primarily by administrative and clinical staff to manage inventory, as well as report and analyze data.

Value Statement
The Inventory Application Service provides a secure environment for conducting Health Systems supply chain business, with appropriate controls to monitor compliance with federal, state and local reporting regulations and requirements. The integrated structure of the enterprise resource systems facilitates data sharing with other University and unit systems, enabling richer analysis and reporting and allows to gain real-time visibility into UMHS inventory to guide swift and accurate decision-making. Customers can strategically track all UMHS demand requirements to maximize their customer service levels. The application services also provide capability to order using Logical Unit of Measures which results in more real-time ordering to offset the shrinking warehouse space versus bulk ordering which would need larger warehouse space.
Management and Governance
The Inventory Application Services are part of the Administrative (Application) Services Portfolio.

<table>
<thead>
<tr>
<th>IT Service Role</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Owner</td>
<td>Judy Aldrich</td>
</tr>
<tr>
<td>Product Manager</td>
<td>Nadeem Zaidi</td>
</tr>
</tbody>
</table>
| Governance            | The Administrative Domain Advisory Committee (ADAC) provides guidance, oversight and strategic thinking on information technology investments that support UM administrative functions. Rowan Miranda is the Financial Domain Steward. ADAC helps prioritize new investments and define approaches to optimize the use of existing administrative IT assets in support of the University’s vision, mission and strategic imperatives. More information is found at: [http://cio.umich.edu/governance/administrative-domain.php](http://cio.umich.edu/governance/administrative-domain.php). In addition, a governance model is being developed to provide a coordinated approach to strategic use of the inventory application across multiple UM Health System (UMHS) units. It will include the following:
  • Define how key partners will interact with ITS including level of Business Systems Analyst support.
  • Partner with ITS to establish and prioritize annual initiatives
  • Establish and enforce data standards for shared data
  • Provide ITS with plans and requirements for additions, deletions, or changes to products, services, and usage levels as early as possible
  • Participate in Service Level Reviews
  • Define who approves, submits and maintains access to inventory
  • Define key metrics (with input from ITS) to be measured by ITS on service quality and performance |

Service Details
Most of the functions and capabilities in the Inventory Application Service are provided via the M-Pathways system. The M-Pathways system provides the opportunity for integration with other systems (internal and external to UM); some of the existing integrations are noted below. ITS provides first-level support for integration with other services or systems but may transferred to an external partner or other University unit as appropriate.
<table>
<thead>
<tr>
<th>Feature or Capability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory Management</td>
<td>This service provides units the capability to manage their inventory in MPathways. Each unit can maintain business-specific inventory attributes like Inventory counts, Par Locations, Inventory Putaway, Replenishment schedules etc. This service includes maintaining warehouse locations to store inventory, and setup data to allow for distribution and replenishment of inventory to meet customer demand.</td>
</tr>
<tr>
<td>Item Management</td>
<td>This feature stores detailed information about supplies in order to support all aspects of inventory management. Information includes product description, cost, vendor, unit pricing, manufacturer attributes, etc.</td>
</tr>
<tr>
<td>Supply Order and Order Acknowledgement</td>
<td>This feature is the upstream supply chain transaction set that allows for the purchase order delivery to the vendor and acknowledgement of orders to the unit receiving the goods. The purchase orders are created for Inventory replenishments as well as to support real time ordering.</td>
</tr>
<tr>
<td>Advance Shipment Notifications and Receiving</td>
<td>This feature gives advance notification of the shipment of goods from the vendor to the ordering unit, and confirms to the inventory unit what goods the ordering unit will receive.</td>
</tr>
<tr>
<td>Inventory Fulfillment</td>
<td>This feature provides capability to satisfy inventory customers demand to acquire the goods from inventory, and maintains the integrity and accuracy of quantity of supplies on hand at the inventory location.</td>
</tr>
<tr>
<td>Cost Accounting</td>
<td>This features generates the appropriate accounting entries to charge customers, decrease asset accounts for the supplies moved, and credits appropriate expense account in order to charge the unit buying the product.</td>
</tr>
<tr>
<td>Inventory Reporting</td>
<td>Reporting features deliver operational and management reporting needed to run a perpetual inventory at a high level of optimization. E.g. Supply Chain Analytics report shows critical information.</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Inventory Data Extracts</th>
<th>ITS provides data extracts that feed alternate reporting databases which combines inventory information from MPathways with other local data for KPIs and analytics.</th>
</tr>
</thead>
</table>

Service Expectations

Service Availability

Service Hours

Inventory Services are available to users:
- Sunday, 7:00 a.m. - 4:00 a.m. Monday
- Monday-Friday, 5:00 a.m. - 4:00 a.m.
- Saturday, 5:00 a.m.- 11:00 p.m.

Planned Maintenance

The planned weekly maintenance window for the M-Pathways Financials and Physical Resource system, which houses the Inventory application, is Saturday 11:00 p.m. to Sunday 7:00 a.m. The service is unavailable to users during this time to allow ITS flexibility in scheduling maintenance, as needed, to update or patch the system.

When it is necessary to bring the system down for planned maintenance during regular hours of operation, ITS will work with key customers to ensure minimal disruption to the business. ITS will then update the Service Status Page at: http://status.its.umich.edu/ with information on any outage.

ITS will coordinate and communicate planned outages of greater than a day, at least two weeks ahead of the outage. Scheduled maintenance that runs beyond the defined maintenance window will be classified as an unplanned outage and will be treated as a critical incident.

Application code migrations generally occur between 4:00 a.m. and 6:00 a.m. each Tuesday. The service is unavailable to users during this time, as the system may be unstable.

Emergency Maintenance

Emergency maintenance can occur during normal hours the service is available. In the event of emergency maintenance that requires an unscheduled outage, ITS will communicate to users and customers by posting outage information on the Wolverine Access Gateway at http://wolverineaccess.umich.edu. Status of the outage and estimated time to restore services is included in each update.
The ITS Service Status Page is also updated with unscheduled outage information as it becomes available and can be found at: http://status.its.umich.edu/

Restarting of hardware components are done when necessary to restore service performance to normal levels. Restarts that impact user access will be done, when possible, during periods of low usage, such as lunch hours

Service Support

Requesting Support
User requests for support regarding ITS services are processed through the ITS Service Center. To contact the Service Center:

- Submit a Service Request Online (login required)
- Call 734-764-HELP (764-4357)
- Email 4HELP@umich.edu

Support Hours
ITS Service Center Hours are:
Monday–Friday: 7:00 a.m.– 6:00 p.m.
Sunday: 1:00 p.m.– 5:00 p.m. (e-mail only)

For UMHS users, requests for support outside of Service Center hours should be directed to ITS Operations (763-4000). Operations will handle system-related issues and will refer business process and application issues to the ITS Inventory team. Call-back response will be within 60 minutes. ITS will maintain a call-back staff schedule to ensure support is available when needed. There will be on-call pager support only when agreed in advance by UMHS and ITS.

Types of Support
U-M staff members request can obtain access to the systems that support Inventory services through the OnLine Access Request System (OARS). Unit Liaisons (staff appointed by deans and directors to represent a specific school, college or unit) assist faculty and staff in completing/approving/modifying access requests in OARS. They are also responsible for removing access as appropriate (e.g., staff turnover). For UMHS, there are designated staff who fill this role but are not Unit Liaisons. Information about obtaining access is found at: http://www.mais.umich.edu/access/accessprocess.html.

One level of support is provided for all users. Support includes:

- user and customer service help and consulting
- repairs to services to address disruption and outages, or when supporting system features are not working as designed
- design, development and maintenance of interfaces to and from the enterprise system
● analysis, planning and coding when changes to the technical infrastructure supporting the service is required
● monitor, troubleshoot and execute services that support daily, weekly, monthly and annual business processes and ensure services run effectively
● management of user access to ensure the right people have the right access at the right time
● monitor system infrastructure components to ensure system is running efficiently and securely
● implement incremental improvements that increase the value of the service

User support is provided through the ITS Service Center, information is at: http://its.umich.edu/help.

Consulting and On-Site Support is also offered by ITS. Information is at: http://www.mais.umich.edu/consulting/.

ITS provides on-call or call-back support for critical business processes during non-standard business hours (7:00 a.m. to 6:00 p.m., Monday through Friday). Designation of a process as critical will be agreed upon in advance with the customer or user. During certain business cycles, such as physical inventory counts, additional levels of monitoring can be requested by customers or users.

Self-Service Support
ITS coordinates in-house training that prepares UM staff to use the enterprise resource planning tools that support the inventory application service. ITS partners with subject matter experts in key business offices to provide the business process and third-party application training.

The training and documentation is primarily managed and delivered via My Learning and Information System (My LINC), which is ITS’s Learning Management System and Learning Content Management System for the Financial Application Services. My LINC manages self-service training registration and tracking in conjunction with the Online Access Request System (OARS), which authorized supervisors use to assign system roles to staff who use the Financial Application Services.

My LINC includes:
● registration and tracking of in-house, instructor-led training
● online training courses
● a wide variety of standardized self-service training and support deliverables, including, but not limited to, step-by-step procedures, reference guides and system simulations

The My LINC deliverables may be accessed in My LINC via searching or browsing by category. Time sensitive or new My LINC deliverables are also presented to users via hyperlinks on the home page announcements section of the M-Pathways Financials and Physical Resources System.

For UMHS, training will be developed and maintained by UMHS administrative staff.
## Incidents and Outages

<table>
<thead>
<tr>
<th>Priority</th>
<th>Description</th>
<th>Target to Restore Services</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical</td>
<td>Incidents are classified as critical priority when there is a major, immediate risk to the university's ability to conduct its mission, because of disruption to users' ability to perform a function related to that mission.</td>
<td>4 hours</td>
<td>LUM cycle purchase orders must be sent to vendors for critical stock items. Vendors expect orders to be placed by 8am daily.</td>
</tr>
<tr>
<td>High</td>
<td>Incidents are classified as high priority when there is an elevated risk to the university's ability to conduct its mission, because of disruption to users' ability to perform a function related to that mission.</td>
<td>1 day</td>
<td>If nightly auto-replenishment jobs cannot run, supplies cannot be ordered to restock the warehouse. Supplies are slowed getting to the floor for patient needs.</td>
</tr>
<tr>
<td>Medium</td>
<td>Incidents are classified as medium priority when users' ability to perform a function is impaired, and a risk to the university's ability to conduct its mission is present, but the university can manage around that risk over a short period of time.</td>
<td>5 days</td>
<td>Long-running jobs impairs users to complete tasks quickly.</td>
</tr>
<tr>
<td>Low</td>
<td>Incidents are classified as low priority when users' ability to perform a function is impaired, but there is minimal risk to the university's ability to perform its mission.</td>
<td>10 days</td>
<td>A report is returning wrong results. ITS will investigate the issue and work with users to make the change when resources are available.</td>
</tr>
</tbody>
</table>
Data Retention and Restoration

Backup and Restoration
Backups of databases are done in order to avoid data loss in the event of a disaster or system failure. ITS will ensure that regular backups occur and will take action to ensure that, in the event of a disaster or failure, the time to restore services is minimized.

For the Financials database, which includes the inventory data, a full backup is run once per week on Saturday at 11:30 p.m. with non-disruption of service. The backup includes a flash copy (near-instant snapshot backup) of the database and stored in an alternate data center. ITS captures daily system activity in archive logs and table exports, which are kept 30 days and used for recovery purposes in the event of a disaster or system failure.

The database can be recovered to any point in time within the last 30 days, but exact timings for restore and recovery depend on the amount of data needing to be recovered. The export files can also be used to restore specific tables to the point that the daily export was run.

Data Retention
Inventory data is available in the M-Pathways Financial and Physical Resources system. Data retention guidelines can be found in the Standard Practice Guide at: http://spg.umich.edu/policy/601.08-1.

Although no formal ITS data retention policy exists, ITS retains system data to support the SPG for Department Record Retention for Business and Financial Records http://spg.umich.edu/policy/604.01

The archiving and purging of data usually occurs when tables become so large that they cause system slowness and negatively impact the user experience. ITS has data archive and purge practices and seeks customer guidance and approval for data purges.

Unless otherwise communicated by the business office, ITS retains data files for 60 days which have been submitted by customers for processing or created by the system.

Customer Responsibilities

Roles and Responsibilities
The M-Pathways Financial and Physical Resources system that includes Inventory data, is the authoritative source of financial data for the University. As such, it is important that users adhere to policies that govern the use of data and the ability to make commitments on behalf of the University.

Customers are expected to:
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- collaborate with the Service Owner to develop service lifecycle/strategy;
- provide training for key users in business owner/customer offices;
- establish guidelines and delegate authority for access management to ITS;
- work with advisory groups (ADAC, UMHS Governance) on identification and prioritization of enhancement requests;
- support management of data resources through active data stewardship;
- participate in service improvement projects.

Users are expected to:
- adhere to the UM Standard Practice Guide;
- use strong authentication for system access;
- complete access and compliance training and annually certify responsible use of data;
- take select training before accessing the system;
- report incidents to the ITS Service Desk in a timely manner;
- log service requests with the ITS Service Desk;
- stay current with training updates;
- manage local reports, adhere to naming conventions, and make needed updates during system upgrades;
- manage access (make sure the right people have the right level of access), including removal of access for terminated/transferred employees;
- ensure separation of duties and maintain appropriate departmental levels of approval;
- keep local software up to date with recommended settings for operations and security.

System Requirements
This site provides information about the supported Windows and Macintosh operating systems and browsers for the Web-based administrative applications that ITS manages:
http://www.mais.umich.edu/systeminfo/browser_os.html

While vendors test and certify certain browser/operating systems combinations for their products, these become outdated quickly. ITS will test other, more current combinations and identify workarounds or settings that can be used with the applications. ITS may not be able to resolve all incidents that occur when running the applications on browser/operating system combinations not on the ITS list. Users will then be expected to run the applications and the recommended platforms.

ITS will work directly with the software vendors to influence them to support the latest version of both Apple and Window operating systems and to expand its browser combinations.

Service Performance

Service Metrics & Reporting
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
<th>Expectation</th>
<th>How Measured</th>
<th>How Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Availability</td>
<td>Not currently available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Responsiveness</td>
<td>Not currently available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request Fulfillment</td>
<td>Not currently available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incident Resolution</td>
<td>Number of new incidents created in the prior week, along with incident status.</td>
<td>95% of incidents will be resolved within the target restoration timeframe, although this is not currently being measured.</td>
<td>Business Objects query is run weekly against the ITSM Data Warehouse, which contains Incident information</td>
<td>Status report is sent via email every Monday to management staff in Materiel Services, Transactional Purchasing and UMHS Contracts &amp; Procurement</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>Not currently available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Responses to Missed Service Expectations
The ITS Service Status Page is updated with information on unplanned outages. This sends Service Status Notifications emails to a self-subscribing email group (prodnotify@umich.edu), and in some scenarios it posts service interruption information on the homepage of the Wolverine Access Gateway. Each of these options contain information about the outage (incident), including start time, anticipated end time, services affected and symptoms. After the outage (incident) is resolved, an incident summary and analysis is sent to the same groups. Incidents needing further analysis will be tracked, root cause analysis done, and changes made as required.

When missed service expectations affect a significant number of M-Pathways Financials and Physical Resources System users, different methods of communication may be used to inform users:
- announcements posted on the announcements section of the Wolverine Access - Faculty & Staff page where users log into the system
- announcements posted within the system in the home page announcements section
- targeted emails sent to the specific user roles affected by the issue
ITS will provide missed service level reports to business owners or key customers on request.

Changes and Enhancements
The teams that support the Inventory Application Services communicate frequently with key business partners via email, phone, and in-person meetings. Depending on the degree of change/enhancement and the type/volume of affected users, the following communication methods may be employed:

- Customers may be included in service planning cycles, receive reports on system activity, and participate in system testing for releases.
- End users typically receive emails that describe changes/enhancements at a high level with links to more detailed documentation in My LINC. New and updated documentation is also linked on the home page announcements section within the system. In the case of a significant change like a system upgrade, an Overview of Changes document is delivered with links to all new documentation and the existing documentation that was updated.

Document Review & Approval

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Reviewed by</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Draft (Created by Service Owner)</td>
<td>Nadeem Zaidi</td>
<td>May 1, 2013</td>
</tr>
<tr>
<td>SPO Review</td>
<td>Holly Nielsen</td>
<td>May 23, 2013</td>
</tr>
</tbody>
</table>