1.02. Why mSupply?

This brief paper outlines the main areas of functionality that mSupply covers, along with something of the approach and ethos of Sustainable Solutions.

People

- Our aims are to serve developing countries with solutions that provide real benefit.
- That means that we are driven by a desire to serve, rather than by profit.
- That said, we are a profitable company with no debt and a commitment to stay in business for as long as we are needed.
- We have a balanced mix of expatriate and Nepali staff who work on mSupply.

Experience

- We've been doing mSupply since 1998, and full-time as Sustainable Solutions since 2001. In that time we've done hundreds of days of trainings, converted hundreds of thousands of records from other systems to mSupply, and installed mSupply in hundreds of locations.
- Our experience in Nepal as a developing country, and in the many other developing countries that we've worked in, gives us a unique perspective and understanding of the challenges and opportunities involved in working in similar environments.
- We're committed for the long term. We know that a decision to install mSupply is a big one. We're planning to be here decades from now.

Ease-of-use

- There is always a balance between features and usability, and while we know we don’t always get it right, we try to make sure we don’t add features that aren’t really needed, and we make sure that features only needed by one client don’t clutter up the interface for everyone.
- mSupply is very easy to install- 10 minutes and a whole department is up and running.
- mSupply uses an easy-to-use graphical interface that makes adding Purchase Orders, Patient Prescriptions, Tenders, etc a breeze!
- The system is also made with high usage warehouses and busy pharmacy departments in mind. When fine-tuned, the system automates item purchases, receipts and sales for the warehouse administrator and also provides features such as abbreviated directions entry for quick prescribing of medicines.

Stability & Reliability

- The initial mSupply server installations in 2002 have run since then without ever crashing.
- We have more than ten years of experience in keeping mSupply installations running in developing countries, so we know what it takes to make a reliable system. All multi-user mSupply systems we have installed are still running.
- mSupply includes an automated internet backup system, so backups are automatically transferred to a remote secure site.

- Server backups are automatic with configurable frequency.
- mSupply keeps a log of every action you make, and if there is a power failure then the log can be used to restore all unsaved data on the server.

Security

- We do not know of any instances of a security breach of an mSupply server
- There is a full password protected login and permissions system, allowing each user's access to functions to be controlled and recorded.
- A user log records all significant user interactions, allowing an audit of which user performed which actions.

Local or Cloud or Both!

- mSupply can run in many different ways, depending on whether you want to run a local or cloud-based service:
    - Local server with client connecting over your local network
    - Cloud based server with clients connecting via a special application or a web browser (e.g. Citrix)
    - If you have several sites and want to manage them centrally, but the internet does not support a cloud-based service, then mSupply also supports running individual servers at mulitple locations that then synchronise their data back to a central server when communications are available.

mSupply mobile

- On Sept 2nd 2013 we officially released mSupply mobile. It allows you to run a small medical store using a tablet computer (iPad or Android or Windows). An internet connection is required, but users in developing countries are successfully using mSupply mobile over an EDGE (2g) mobile network.

As of mid 2016, the internet connection does not need to be there all the time! See Mobile (Android) user guide - new, featuring offline operation

- mSupply mobile can give stock visibility and automated replenishment for hundreds or thousands of stores connected to a single server, which may be hosted on your premises or be cloud-based.

Scalable

- The same data file can grow from being used in a single-user system to having hundreds of concurrent users with millions of transactions.

Customisation

- Many mSupply users have unique needs requiring some customisation of the standard mSupply software. mSupply allows customised versions that can still be easily upgraded as new releases are made. Often customisation is done at no extra cost if the client has a current up-to-date contract.

Specially designed for pharmaceuticals

- mSupply is built from the ground up to handle batches and expiry dates.
- There are multiple ways of classifying medicines, and mSupply supports ATC coding, WHO's EDL[1)] categories and the user's own custom categories.
- Many of the reports are specific to the needs of pharmaceutical distribution

Reporting

- The in-built reports have been developed since the beginning in response to user requests.
- Users can easily create their own custom reports and save them for use again. Saved reports are available from a menu in the custom report window.
- Items, Names, and transactions all have lots of spare fields that users can use to store custom data, and then use those fields in reports.
- mSupply dashboard allows managers in remote locations to log on with a web browser and view reports.

Mistake tolerance

- mSupply provides easy merging of duplicate items.
- Easy adjustment of inventory errors (but with a full audit trail!)
- Most fields allow entry by name or code, and allow partial entry of as much of the name or code as the user knows.
- Easily find transactions you've entered, by number, by customer/supplier name, by a list of recent transactions or by a custom search.
- If the user's hardware is powerful enough, fuzzy find searches allow finding data even if the search terms are incorrectly entered.

Backorders

- Items that you are unable to supply to customers are put onto backorder. A report of all backordered items is easily generated. When the stock for the backorder becomes available a customer invoice is automatically created awaiting your confirmation.

Web interface for customers

- mSupply allows customers to remotely log in via a web browser and place orders, view order status, stock status and transaction history. This system is in daily use.

Customer stock history / indent ordering

- mSupply supports a unique system of centralised supply where the distribution point submits current stock on hand figures, and mSupply calculate a rational quantity to supply, knowing the historic stock on hand, the ordering cycle, and the amount supplied during the previous cycle.
- mSupply also supports the simpler imprest system where the amount given to customers is based on a fixed level of stock, as is commonly done when supplying wards in hospitals.

Quantification

- mSupply uses a powerful ordering system that allows accurate real-time analysis of how much stock should be ordered, based on historic consumption, order lead time, the ordering frequency, desired “buffer” stock levels and current stock levels. Unmet demand from customers, backorders, and stock on order are also taken into account.
- This system has proven reliable, and requires little user intervention, unlike systems that require you to set minimum and maximum stock levels. mSupply still allows minimum stock to be set if really needed.

Procurement

- mSupply handles purchase orders in multiple currencies, and allows split deliveries.
- The goods receipt module allows full or partial receipt of each purchase order plus addition of stock not ordered.
- Ad hoc quotes from suppliers can also be handled.
- The quantification, tender management and purchase order systems all tie together so data flows from one to the other without requiring re-entry.

Tender management

- The Tender Management module provides detailed production and management of tenders including using mSupply data to determine quantification, printing invitation letters, comparing tender submissions and automatically producing Purchase Orders for the winning tender supplier.
- The Remote Tender Management Module provides posting of tenders by suppliers to https://tenders.msupply.org.nz secure web site. You download and automatically import completed tenders to mSupply for easy comparison of supplier responses, choosing the winning supplier and creation of purchase orders.
- Supplier Registration functionality is planned to be developed as part of the Tender management module.

Dispensing

- mSupply integrates well into hospital pharmacies, providing easy breakdown of bulk packs for dispensing.
- Prescribers are recorded, and prescriber reports allow analysis of prescribing trends and costs.
- Drug interactions are handled, as is repeat dispensing.
- Patient history is recorded and easily accessible.

- Customisable abbreviations allow rapid entry of patient instructions on to printed labels.
- Medicine labels are produced using specialist label printers. Busy sites using mSupply produce hundreds of thousands of labels per year.

Multiple sites from one server

- mSupply is able to handle multiple virtual stores within a single data file. A common use for this is a hospital, where several stores may be present, but each needs to run independently.
- Stores can run in either dispensary or store mode, so one server can handle both a hospital pharmacy and a warehouse store simultaneously.
- Using Citrix and a DSL internet connection you can run a whole country's medical distribution system from a single server, greatly reducing infrastructure requirements while dramatically improving availability and reliability.

Stock control

- Because mSupply tracks each batch separately, full FEFO [2)] can be maintained for every item.
- There is a full audit trail for each stock line.
- Each stock line has a record of warehouse location, enabling easy warehouse management
- If stock lines have the same batch number, expiry and pack size, they can be split and combined.
- Stock lines can be re-packed to different pack sizes for convenience. Warehouses will find it easier to handle cartons with a pack size of, say, 12,000 tablets while dispensaries will be dispensing individual tablets, and so will want a pack size of 1.

Warehouse management

- Full Location management
  - mSupply allows volume based calculations of available storage, that is especially critical for cold chain items.
  - Volume information is used to provide either reports or a graphical depiction of how full each section of the warehouse is.
  - Alerts are given when placing purchase orders if there will not be enough space to hold the incoming goods.
- Basic bar-coding functionality is planned to be developed soon.

Vaccines monitoring

- mSupply allows recording of VVM[3)] status for batches, and allows sorting available stock by VVM status rather than by expiry.

Mobile communications

- mSupply integrates with Frontline SMS to provide an interface for using SMS messaging to submit information such as stock levels and goods receipt confirmations to mSupply.

Hospital Information System

- A simple hospital information system has been developed as part of mSupply. It is designed to provide a basic service to record critical data:
  - Recording a hospital's wards and beds.
  - Recording inpatient admissions (admitting a patient, assigning them to a ward and bed).
  - Recordng ICD[4)] 10 disease codes for each patient admission. You can assign multiple disease codes, and prioritise them (primary, secondary, etc..).
  - Moving patients to different wards/beds.
  - Recording discharge data (patient status at time of discharge)
  - Reporting on bed occupancy rates as a whole and by ward, and other useful statistics e.g. average length of stay, ICD10 statistics.
- The mSupply HIS is a cost effective alternative to large commercial installations.

Product / Medicine Registration

- mSupply's Registration module allows mSupply to manage registration of suppliers and their products on a per brand, dose, and form basis.
- mSupply will record and track the status of supplier's registrations and stores the documentation for easy retrieval.

No data lock-in

- All data in mSupply can be exported as industry-standard XML or as an SQL dump, allowing use by other systems as needed.
- A public API has been developed, allowing any system to retrieve and submit information from/to mSupply.

Cross-platform

- mSupply is available for Windows and Macintosh.
- We recommend Windows servers, but client computers can be either Windows or Macintosh.

Interaction with other systems

- mSupply can either query other systems or provide data in real time via XML web services and other industry standard connectors.
- mSupply provides automated seamless integration with Moneyworks accounting software and general export files which can be easily customisable for import to other systems.

All of these features combine to make a very powerful medical inventory supply chain management system which has been tried and tested in dozens of locations around the world. We believe it has a unique set of features that no other product offers for managing medical supplies in developing countries

For full information, visit http://www.msupply.org.nz A demo version is available here

The user guide is available here

The home page for the documentation wiki is here

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1)
Essential Drug List

2)
First Expiry, First Out

3)
Vaccine vial monitor

4)
International Classification of Diseases

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