

All-inclusive modular information system for pharmaceutical companies



e-Stock Management (eST) ... a module to track the movement of product samples and promotional materials throughout the product life cycle, i.e. the product journey from the supplier via a medical representative, an intermediary, all the way to the client, product consumption and disposal. The module offers material and movement evaluation per each subject and material involved. The module is GDP (Good Distribution Practice) validated. [Page 4](#)



e-Performance Management (ePM) ... a module to track cycle, quarterly, biannual and annual employee performance reviews. Comprehensive administration of training programs and educational activities. A tool to monitor feedback provided by subordinates on their superiors. [Page 5](#)



e-Congress Reporting (eCR) ... a module to manage congresses, comprising a complete approval workflow and full control of the event records. It contains all the necessary cost items monitored within the client non-monetary income and later reported to NCZI (National Health Information Center), tax office and EFPIA (European Federation of Pharmaceutical Industries and Associations). The module generates invites and letters with non-monetary income statements for each client. [Page 3](#)



e-Calendar Tool (eCT) ... an all-embracing tool for planning, record keeping and approval of any time-bound activities. Each activity may be set with exact rules of viewing, usage, repetition, exclusion and color. It supports approval workflow. Ideal for attendance system and business trip / meeting scheduling. [Page 6](#)



e-Configuration Management (eCM) ... a module to track all entrusted tools, devices and office supplies, such as laptops, mobile phones, beamers, fixed line extensions, entry cards, flash discs, modems, office printers, home printers, cartridges, IP addresses, LAN sockets, servers, offices, stop tracks, etc. [Page 7](#)



e-Sales and Planning (eSP) ... a module to fully sum, monitor and evaluate sales. All activities related to sale planning are delegated to relevant sales department subjects and the subsequent roundup and consolidation at the controlling department supported by a full-scale math and reporting features. [Page 8](#)



e-Operational Expenditures (ePX) ... a module for a full-scale monitoring of operating expenses. It secures the import of cost positions from production and accounting systems. It comprehensively evaluates and plans operating expenditures according to an adjustable proposal and structure, which is in full competence of controlling department. [Page 10](#)



e-Sales Reporting (eSR) ... comprehensive management of both product and entity base. Synchronization from corporate resources. Supplementing and important business features and providing of the structure to other systems such as Master Data Management. Registers: Pharmacies, Chains, Hospitals, Polyclinics, Pharmacy Owners, Distributors, and Customer numbers. Full product catalog with all features and dependencies. Allows you to model a time promo agenda. [Page 12](#)



e-Sales Finance (eSF) ... this module track budgets, strategic plans, COGS, direct sales, direct marketing, royalties to overall profitability. Comprehensive management over scheduling with the ability to assign scenarios to different managers and assign products to scheduling managers according to the product lines they are currently assigned. Workflow that allows complete control over the scenario with time and process locks. Entry via MS Excel and same reporting directly into MS-Excel. [Page 9](#)



e-Commercial Activities (eCA) ... an agenda of business proposals (both price and discount) across a range of segments for all targeted entities. With the ability to precisely define volume, time, and product for each business proposal. Controlled and configurable approval workflow on different segments for different managers. Complete backup and historization of every change on key records. Agendas for trade discounts, special pricing, discount schemes and current price lists are comprehensively managed in this way. [Page 13](#)



e-Chain Management (eCH) ... a module for tracking the full range of sales per specific pharmacy chain with complex mathematics and detailed scoring by product and specific chain on a monthly, quarterly, and annual basis. With the inclusion of sophisticated filters, it is a powerful tool in negotiating and building relationships with pharmacy chains. [Page 11](#)



e-Document Registration (eDR) ... a module to Document Registration. Registration and filing of documents and later replenishment with historical records and archiving. Records dedicated and accessible to owners with clear filtering. Agenda is perfect for keeping track of invoices and contracts. [Page 14](#)



e-Material Management (eMM) ... a module that tracks the inventory of distributed materials, whether they are books, gift items, various media, office supplies, or other gifts. The system ensures compliance with the legal requirement not to exceed the value of gifts to a single entity within a one-year period. [Page 15](#)



e-Prescription Control (ePC) ... A module for verifying prescriptions received from clients in image or PDF format. The application uses OCR to verify them by reading all relevant data from the prescription, entering it into the database, and then checking for duplicates and attempting to redistribute them. If a duplicate is found, it triggers an alert to the responsible departments. [Page 16](#)

For more than a decade we have been developing and maintaining modular, multilingual solutions for back office in pharmaceutical companies. This set of web applications called eSystems is appropriately combined and complemented with fieldwork tools. We mainly focus on the administration of the processes unique for the Czech and Slovak environment. This software is fully integrated and implemented into Group information systems and we can integrate any kind of data bridge presented by our client. Using stable and well-established technologies such as ASP.NET and MS-SQL Server, forms a solid foundation for technological sustainability of our solution in long run.

System expandability and openness

This system is not a monolithic, “box” system. It can be expanded into several processes using customer core data. Gradually adding new basic catalogues (such as customers, products, clients or pharmacies), the application platform may automate almost all processes within a pharmaceutical company. This open strategy may be manifested by the ecosystem application we have successfully developed for a reputable group of pharmaceutical companies. Gradual addition of core data and processes opens real perspective for development of the so-called Enterprise system, where individual departments may mutually provide services on one platform only and thus significantly economize on the work of their colleagues. This is greatly demonstrated by the already mentioned application where the departments of controlling, marketing, IT and human resources maintain core data in their competence comfortably and thus contribute to the smooth operation of multiple, critical and interconnected processes within the whole company.

Database expandability

A database is practically custom-made, structurally unlimited by and independent on any authorities in other companies, which opens unlimited space for further modelling and adjustments to new customer processes. High relational integrity applied in the database protects data from being accidentally deleted if used in any process or context, which creates conditions for further expansion of core data, and their successful and failure-free usage within new processes.

Application expandability

Sophisticated application Engine used to run the web application may be used for unlimited scale of applications. Each department has its own web application to maintain their own core data and processes, which has proven to be very effective. Each department has a specifically set accessibility for operators, and the application monitors all the necessary movements of their processes. Individual web applications may be merged into one common portal. All these module web applications use a common database storage location and thus form a useful ecosystem, which effectively combines and harmonizes the activities at many departments.

Interconnect ability

We can develop any import or export bridge to all systems in the client environment infrastructure.

Individual modules may also be implemented separately. There is no need to purchase all the system to solve partial processes or needs.

e-Congress Reporting



Transparency

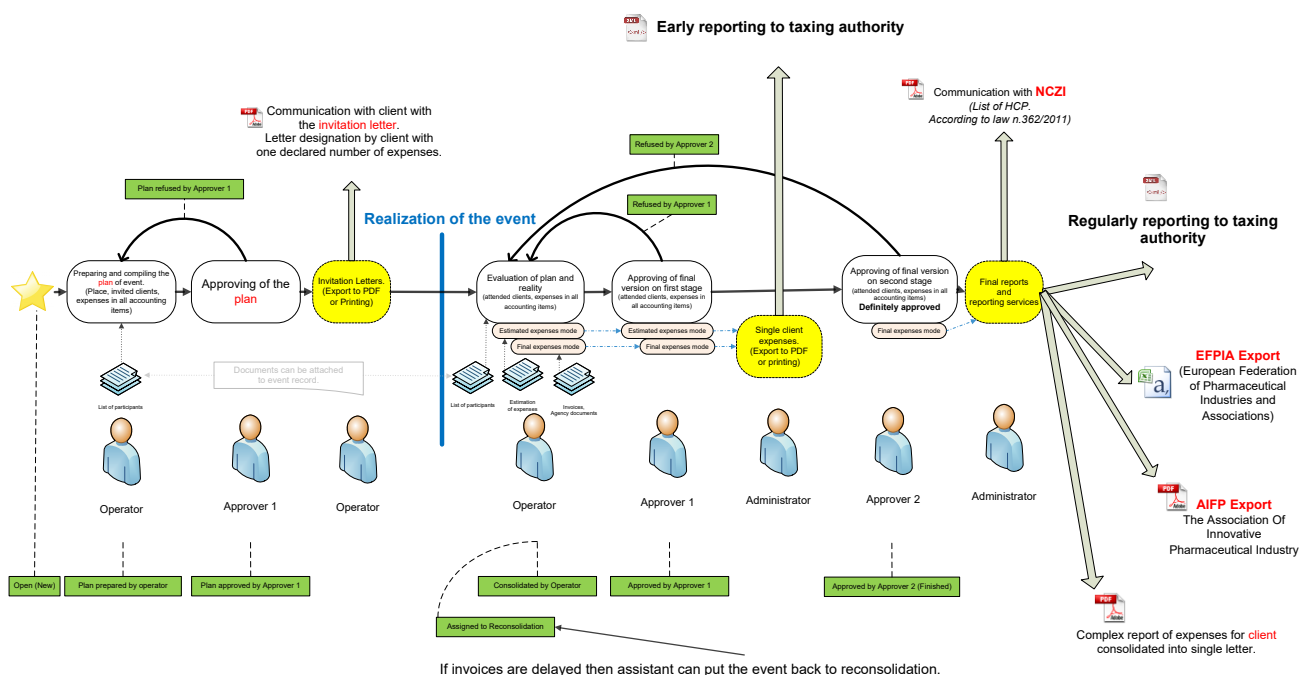
is a huge topic moving the world of Slovak and Czech pharmaceutical companies.

Our module called eCR (eCongress reporting) is an all-embracing solution for reporting of in-kind donations. This application enables precise record keeping of the donation provided accompanied by a custom-made modular Workflow. This covers the assistant, several levels of approvers as well as the process owner. Furthermore, the module generates and archives unified invites in PDF form, as specified in the selected record.

The application contains all the necessary information and data on the events involving in-kind donations. Congresses, roundtables, workshops as well as brunches are fully monitored and included in the reporting process to all relevant authorities.

- NCZI (National Health Information Center)
- Tax office
- EFPIA (European Federation of Pharmaceutical Industries and Associations)

The outputs come in unified formats as specified by clients (PDF, XML, CSV). Based on client's special request, the output can be delivered in practically any form or contents. The application tracks changes in relevant legislation (Act no. 362/2011 Coll. on Medicinal Products and Medical Devices), effective since 1 January 2016.



Event Workflow

e-Stock Management



Checking the distribution of product samples and promotional materials in the field

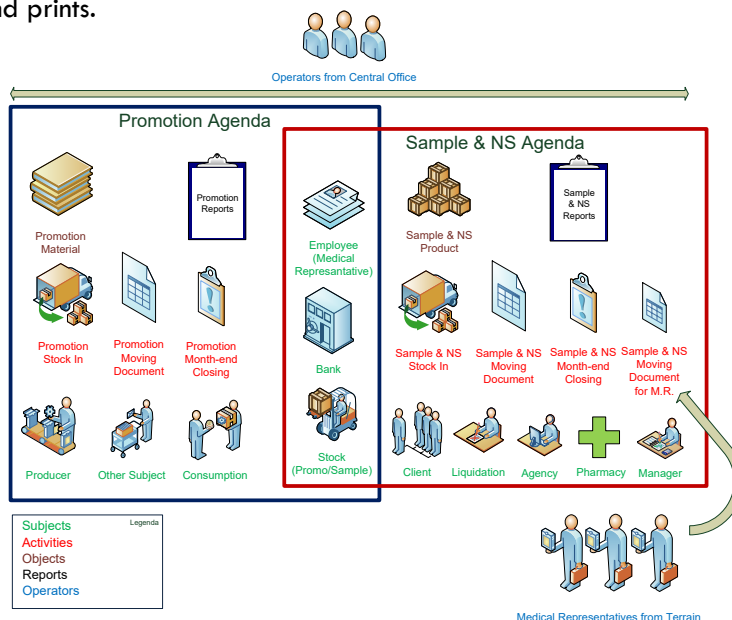
eST is a module to track the movement of promotional items and product samples throughout their life cycle, i.e. the product journey from the supplier via a medical representative, an intermediary, all the way to the client, product consumption and disposal. The system creates material evaluation per subject and movement evaluation with a list of documents with corresponding balance state per subject.

Medical representatives working in the field access the system to see their current number of received, kept and already provided product samples and promotional items. A strict multi-level check of compliance with the Act no. 147/2001 Coll. on Advertising is applied, which stipulates the maximum number of samples allowed per physician – 2 pieces (4 pcs per physician in the Czech Republic). All-inclusive reporting at headquarters enables an immediate check of the level of promotional items and product samples distribution, both in the state of preparation as well as realization. Regular consolidation of stock levels on monthly basis with a cross check based on a subject and product is carried out automatically into the MS-Excel format. The application contains various outputs documenting the life cycle of each product at each subject involved.

The module is GDP (Good Distribution Practice) validated. It contains detailed and sophisticated UML documentation and all the necessary materials for this validation process.

Individual records are kept, monitored and reported separately as follows:

- Product samples:
 - * medicinal products – the first two years after the launch
 - * medical devices, cosmetics and food supplements
- Promotional items and prints.



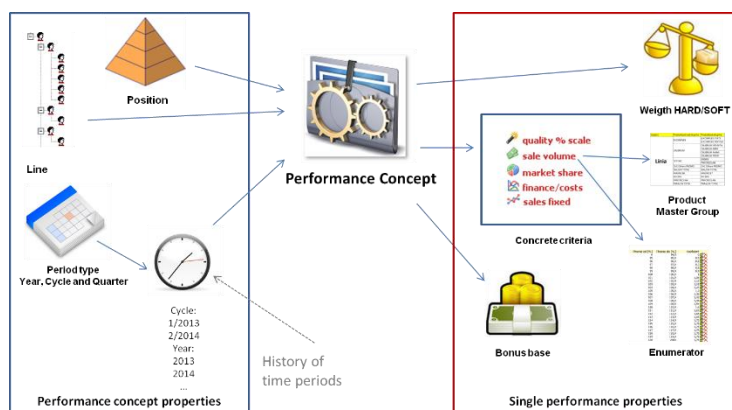
e-Performance Management



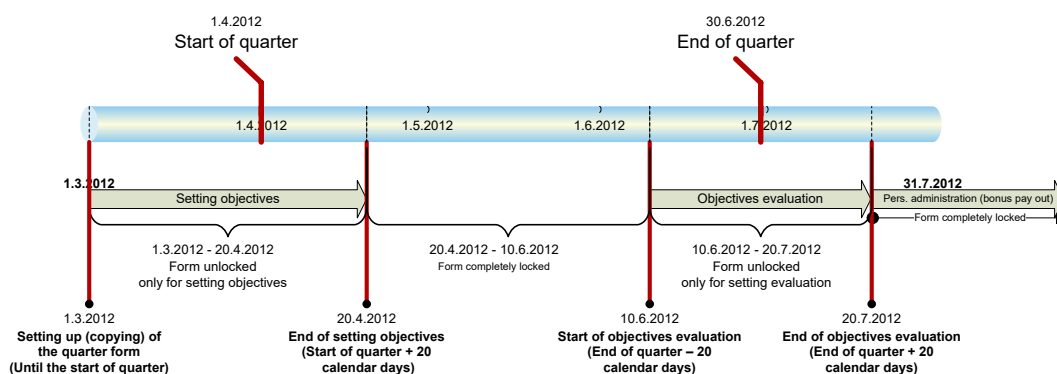
Comprehensive employee performance review

ePM is a module to process cycle, quarterly, biannual and annual employee performance reviews.

This module offers a sophisticated method of evaluation, which is unified for a particular group of employees and is in full responsibility of the sales promotion department or another department. The method of evaluation clearly states which performance criteria and objectives are relevant for a particular review of a particular employee. The module comprises an import mechanism to receive data from external sources. The system applies time locks to make the form available only at the time of performance review. The module offers all-inclusive and very modular reporting for the needs of payroll department and any other balance sheets for the needs of other support departments. The review as such is carried out according to a controlled Workflow between the reviewed person and the reviewer. ePM may come in a combination with comprehensive administration of training and educational activities, and a feedback tracking tool.



Quarter 2/2012



Adjustable method of evaluation unified for a specific group of medical representatives and evaluation time

e-Calendar Tool



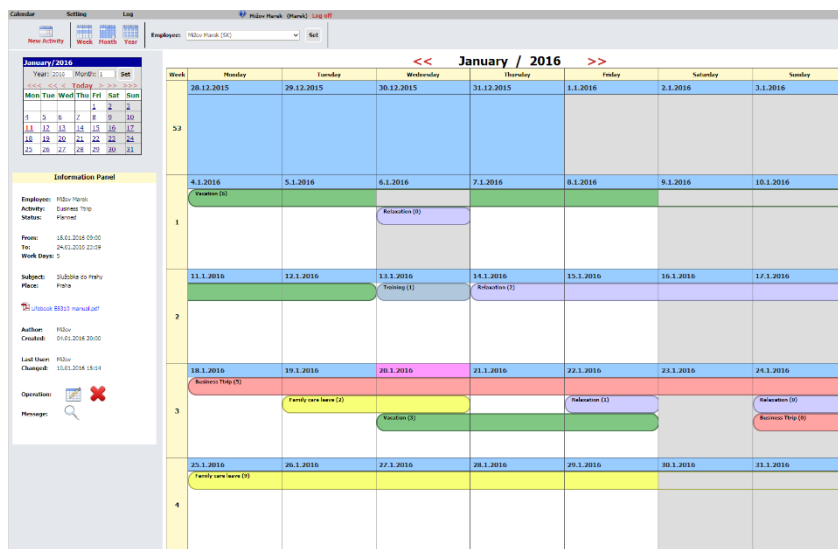
eCT is an all-embracing tool for planning, record keeping and approval of any time-bound activities

Each business has a need for planning time-bound activities of various nature. Classical generally available office planning tools do not enable the implementation of more complex business rules, not to mention comprising an approval workflow. Our calendar is fully adjustable to customer needs, allowing the character of each activity to be set. The process owner may set any or all the following:

- limiting the activity within a specific time frame (e.g.: once a week, 2x a month, 20x a year, etc.)
- activity may be sensitive to workdays only (i.e. If the activity lasts for more than 2 weeks, only 10 working days are included in the process and statistics.)
- an activity of the same kind can(not) run more times in parallel, at one moment
- an activity excludes all other activities
- an activity can(not) be set backwards in time
- activity time sensitivity (diurnal, semidiurnal, hour/minute)
- a time-bound activity can(not) be continually connected with another activity (e.g.: Sick Day cannot be prolonged with a leave of absence)
- an activity color within calendar diagrams

The agreed Workflow may be implemented in all kinds of activities. It keeps the record of the person who launches the activity as well as of the people who reject or approve it, and all this on multiple levels. At the end of year or month detailed statistics may be created informing the employees who participated in the activity and how much time they spent on it. We have successfully implemented the attendance sheet in our calendar, which records off-the-job activities, such as leave of absence, sick leave, taking care of an ill family member, home office, etc.

Calendar can be viewed in all common modes (day, week month, year), it is highly user friendly and significantly resembles standard tools familiar to employees.



An example of a simple monthly overview in eCalendar Tool

e-Configuration Management



eCM is a module to monitor all entrusted tools and devices in the whole scope of office supplies provided

Order and quality overview are essential in the management of the office supplies (including tools and devices) provided to employees. Our system covers all tools and devices an employee takes over at the time of hire and automatically issues a take-over protocol. The system further monitors the history of all users of the device and can track any previous users/temporary owners and information on the repairs if any. The process owner may model device's current state (repairs, theft, claim, replacement, etc.) Per each register it is possible to keep the record of annual revaluation and regular checks and repairs. The system provides vast number of lists and overviews, which are fully custom-made. As today, we can keep the record of the following devices in a pre-defined scope of properties:

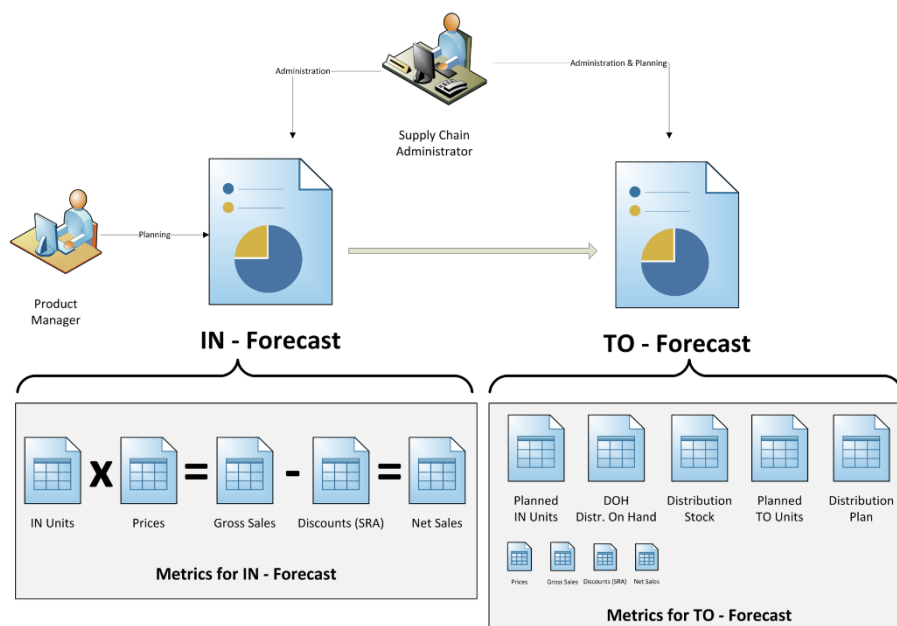
-  notebook
-  office printer
-  home printer
-  server
-  beamer
-  mobile device (phone, modem)
-  cartridge
-  office
-  pbx extension
-  flash discs/drives
-  entry cards
-  Stop Track (a unique device tracking tool)
-  car
-  parking spot
-  parking card
-  LAN socket
-  IP address

e-Sales and Planning



eSP enables tracking, evaluation and full-scale sales math

A complete set of tasks related to the planning of sales, which is delegated to individual sales subjects in charge, subsequent collection and consolidation at the controlling and supply chain department with full sums and report service. Controlling or supply chain department models budgeting and tendencies, and each of these massive data sets (scenarios) has a version of its own. These versions may be mutually data confronted. On monthly basis, current sales figures match forecasts, and thus the current situation overview is always up to date. Individual plans are entered into by product managers with access to their product segment and currently defined scenario only. Subsequent consolidation, reporting and sales figures processing is done by the controlling department using extensive and robust reporting, which features automatic excel tables, web reports with archive and OLAP reporting with a sophisticated usage of cubes in multi-dimensional databases.



Based on client's requirements, any composition of monitored measure units can be made.

- Dots
- Units (IN/TO Market)
- Weight between dots and units
- Prices (Categorization/Performance)
- Gross Sales
- SRA - Discounts (Nominal/Percentage)
- Net sales
- Allocations + Revaluation
- Accruals
- IMS Dots
- Corrections
- Sales plan
- Distribution stock + Distribution on Hand
- Production plan

e-Sales Finance



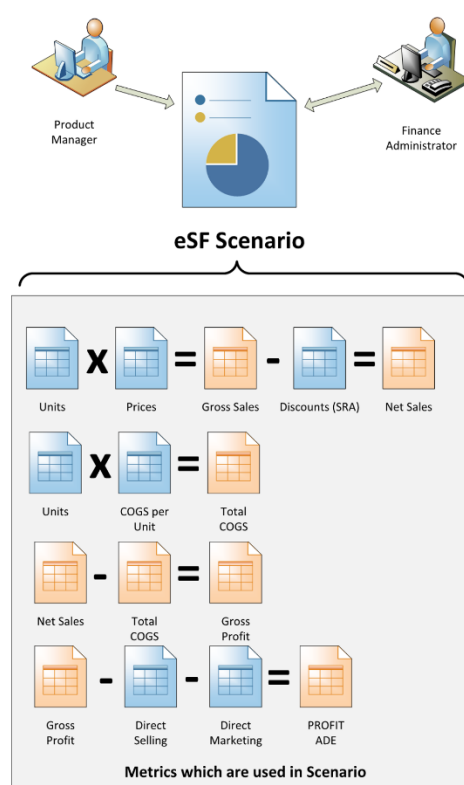
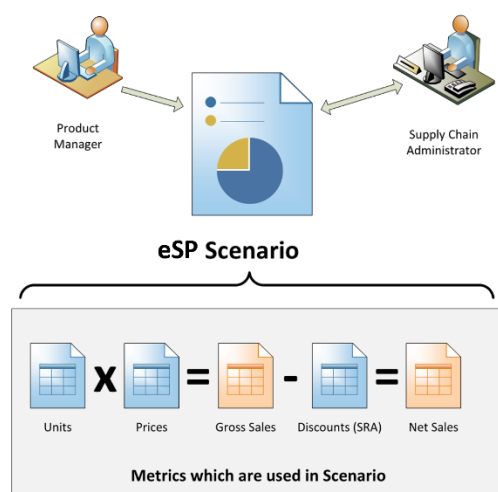
The eSF module is like the eSP module but serves the finance department by the nature of its metrics and scenarios.

This module also includes scenarios in which future developments can be modelled, imports already known sales and cost data into itself and, by overlaying projections, allows better overview and planning of the metrics concerned. Again, there is the ability to selectively make the scenario available to different operators and managers, with the ability to make available only those products that are within the planning manager's purview. The scenarios for this module are financial budget, strategic plan and financial forecast. eSP and eSF Modules work with a series of common metrics (Units, Price, Gross, Discount, NET) and these data can be copied, exchanged, or projected with each other. The eSF module extends this data with additional financial metrics

Based on client's requirements, any composition of monitored measure units can be made.

- Units
- Prices (Categorization/Performance)
- Gross Sales
- SRA - Discounts (Nominal/Percentage)
- Net sales
- Cogs per Unit

- Total Cogs
- Royalties
- Gross profit
- Direct Selling
- Direct marketing
- Profit Ade



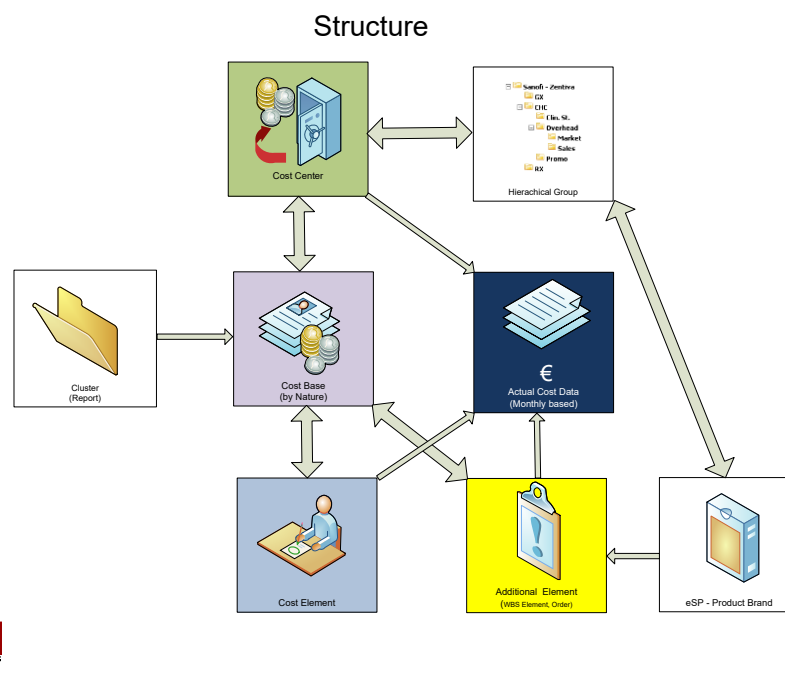
e-Operational Expenditures



ePX imports, evaluates and plans operating expenses based on a freely adjustable structure

From production and accounting systems, the controlling department gains a vast number of cost items and positions, which fall in the category of operating expenditures. The process referred to as Business Intelligence transforms these huge piles of data into information. The ePX module systematically sorts, aggregates and transforms these data into meaningful outputs. The greatest asset of this module is its modularity and controllability. Methodology specialists themselves may model the way the data should be projected. There is no need for developer's intervention or a change request to completely change the aggregated view of cost data based on current needs.

Planning is done on a level of generalization acceptable for company management. Reporting is done on the same level and thus partial overlap of planned and current data is possible here as well. Again, a common combined view reflecting current situation versus plans is created.



Various points of view regarding current cost data

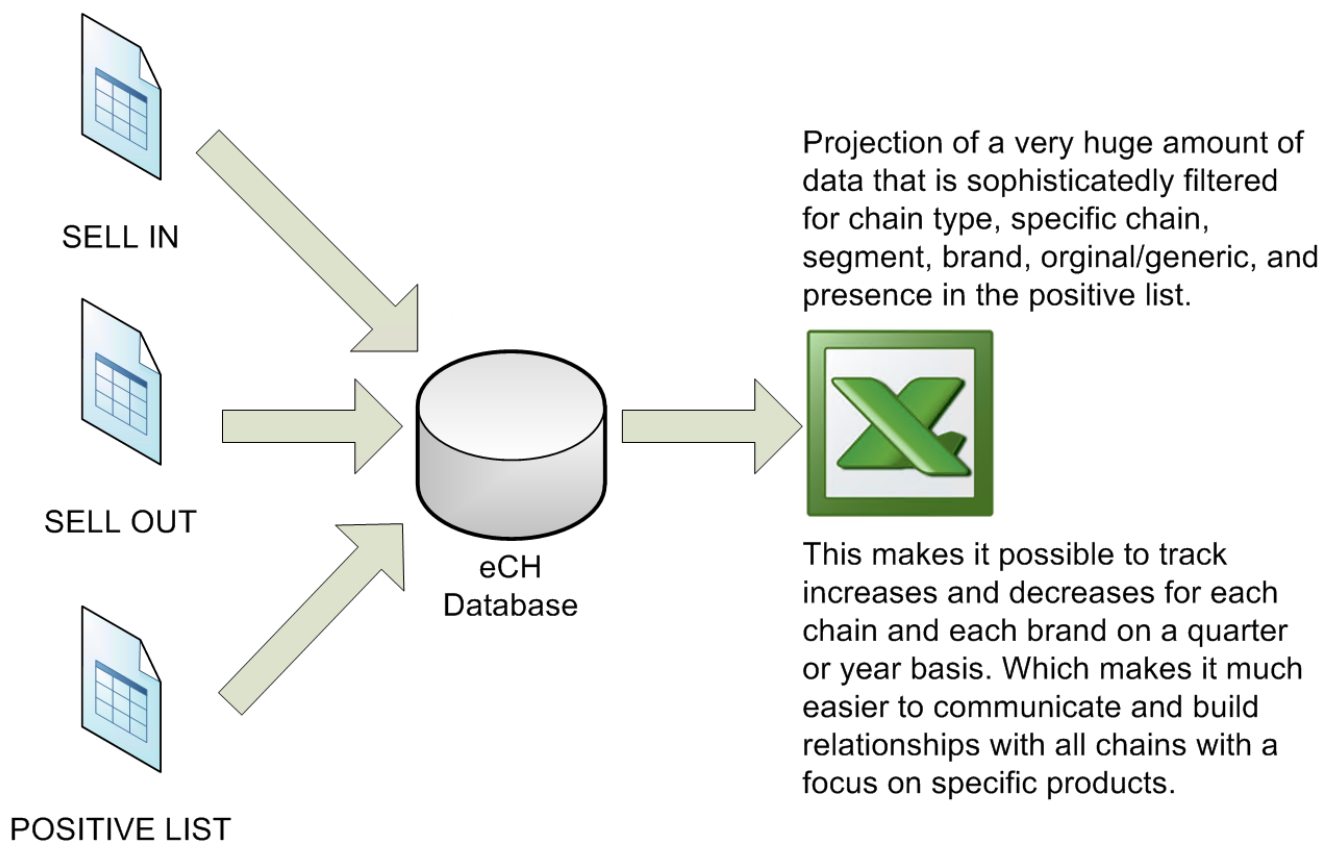
- Blue line is a view through cost centers only, which may be flat (by departments) or hierarchical (a large tree of cost centers where each node can be reported separately) ...
- Orange line is the most sophisticated one. There is a single central element called cost base to which relation to the cost center, cost account and product linkage are modelled. These cost bases are subsequently grouped into reports or clusters, which form the principal and most frequently used output. These clusters form a base for data planning as well.
- Green line is a view purely through individual products.

e-Chain Management



eCH tracks sales and product margins per specific pharmacy chain, evaluating growth and decline.

The large amount of data that comes from distribution company reports on sales to specific chains is combined with pricing and discount information. This massively comprehensive repository serves as the basis for Business Intelligence to produce outputs that help in strategic decision making and negotiation with pharmacy chains that have a strong influence on pharmaceutical sales. Sophisticated aggregation and filtered projection directly into MS-Excel allows us to control the effectiveness of the discounts granted with respect to the sales volume. This allows for better communication and the creation of partnerships with pharmacy chains that are backed by measurable results on a monthly, quarterly and annual basis. The module can specifically differentiate the type of information (SELL IN/SELL OUT) and its presence in the data from each chain and can break down the reporting for each chain based on the presence of this information. The projection also incorporates information about the so-called positive list, which allows to evaluate the effectiveness of product targeting by the pharmaceutical company.

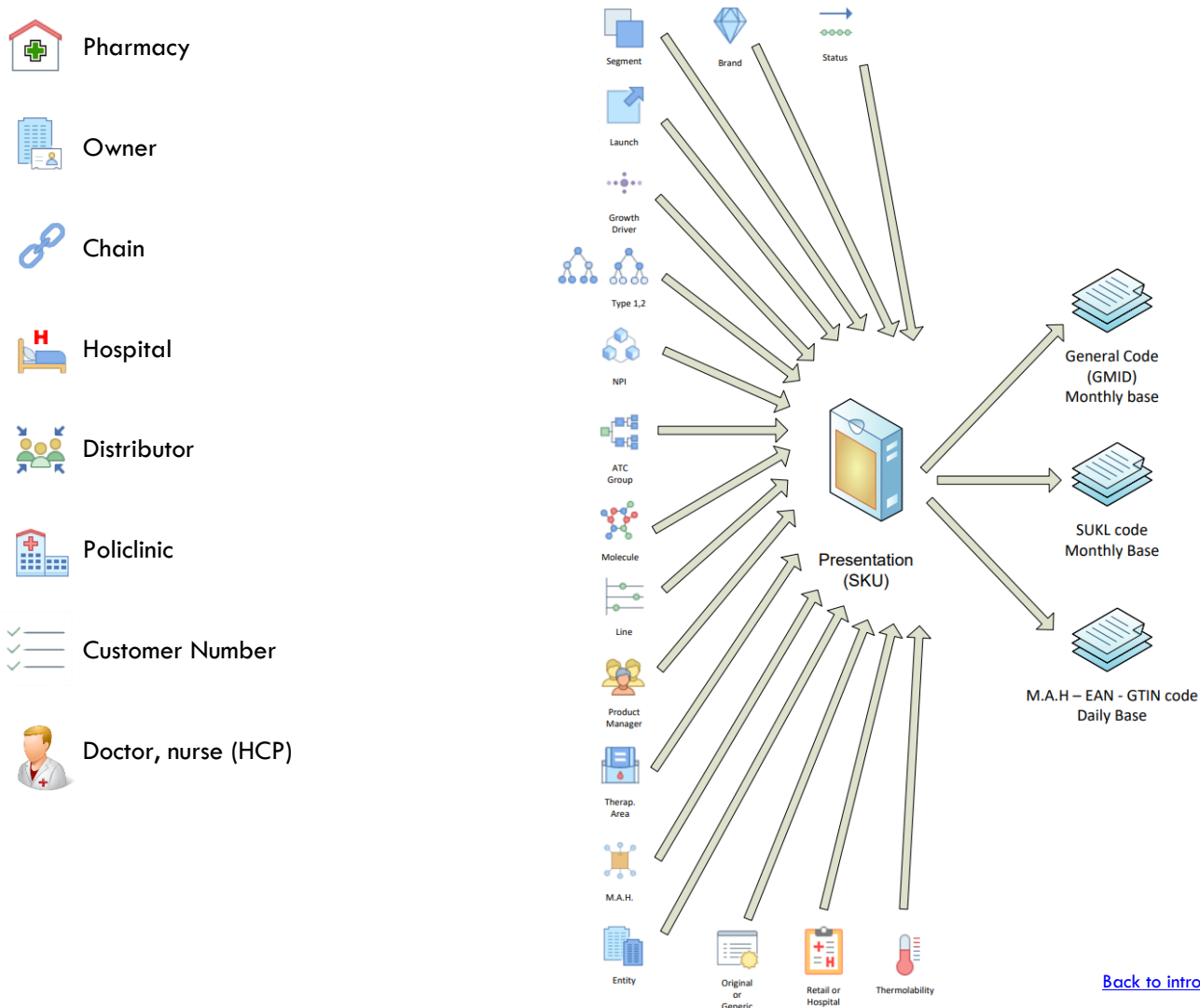


e-Sales Reporting



The eSR is the application base for the product and entity base, creates promotion activities between products and entities, plus it tracks sales daily and helps project the success of these activities.

The subject and product base master data is the basis for any further work in the field of sales management and evaluation and customer targeting. The module provides a comprehensive service for the entire product and subject base with reports, filters, edit forms, exports to CSV and import bridges from corporate systems. Product targeting modelling for individual customers (promotion activities) is handled separately for specific groups such as chains, pharmacies, hospitals or clinics. Each promotion activity can be dimensioned for a specific period independent of standard quarters or cycles. Through the so-called promotional classes, it is possible to logically separate the addressability of products for specific clients, and it is also possible to evaluate the activities based on these classes. We can automate the extraction of sales data from corporate systems. The subsequent projection of this sales data is very open and allows you to view aggregations according to all specific business characteristics that are only maintained in our module, but corporate systems do not include it.

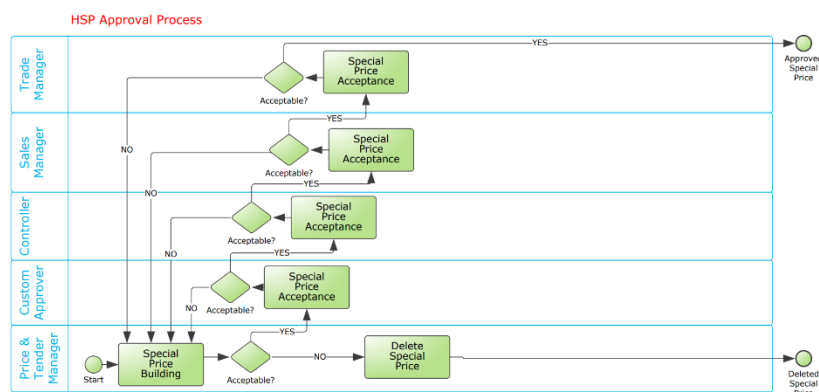
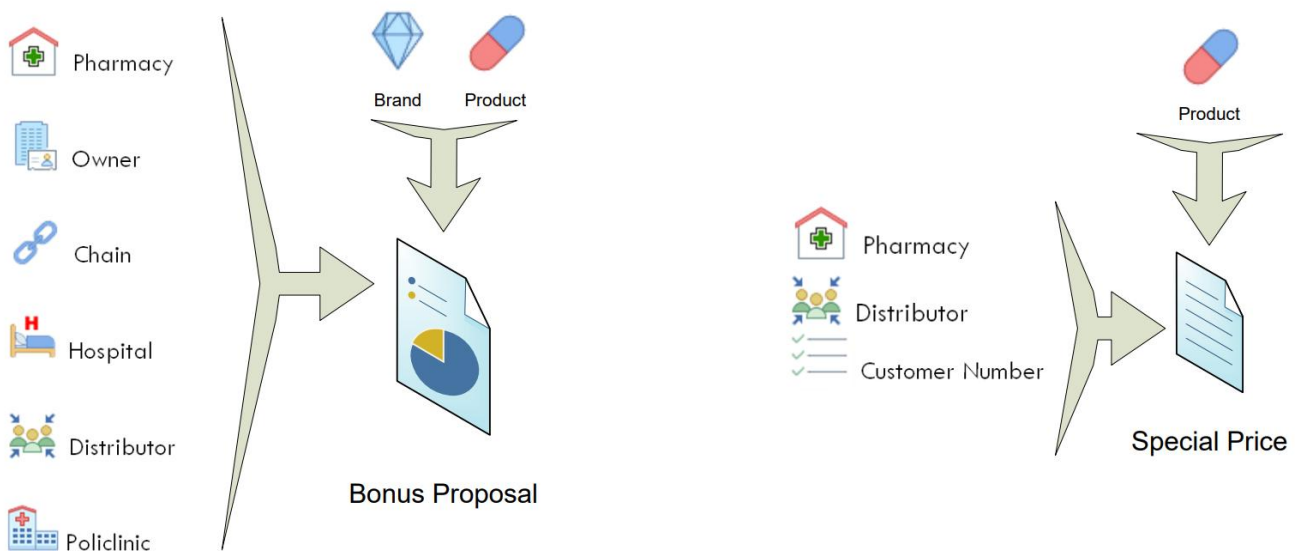


e-Commercial Activities



eCA models discounts and special prices and helps evaluate the success of these activities.

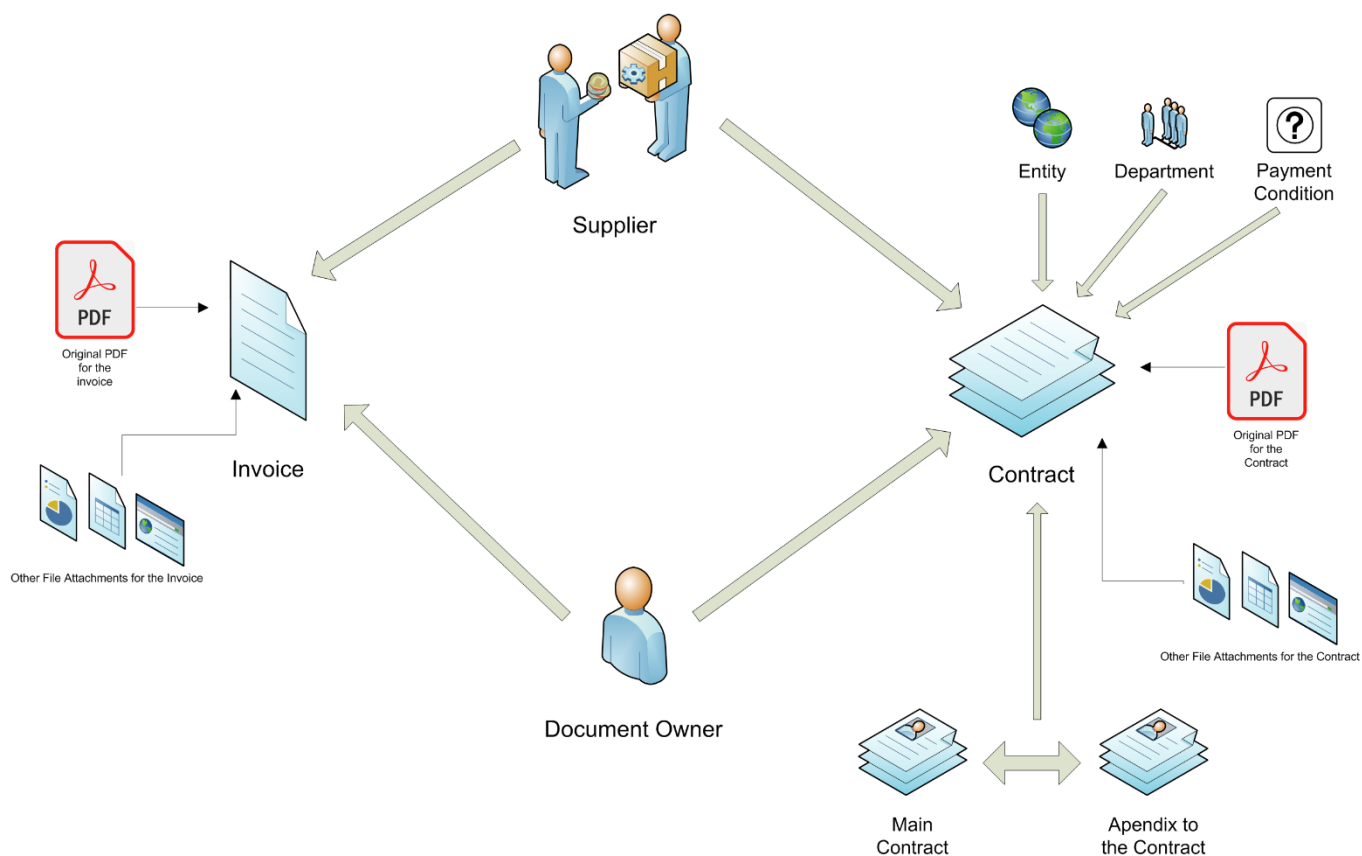
Being flexible in pricing and discount policies is a prerequisite for good customer relations and an important element of staying ahead in a fiercely competitive market. This module leverages the strong master database of products and entities described in the eSR module. The Bonus Proposals Agenda is a sophisticated system that allows different types of entities to be targeted individually but also in combination. It is possible to determine very precisely and specifically which pharmacies, chains, owners, hospitals, clinics, distributors will be offered bonuses and with which specific products they will be targeted. The products or brands are grouped into classes and within these classes there are precisely defined grades, which describe what volumes of purchase price or unit purchases are bonused. The discount for each tier can be expressed as a percentage discount, units, or a reduced price. The second powerful agenda of this module is the special pricing tool. Here, specific pharmacies, specific distributors with specific customer numbers are targeted, and a special product price is determined for this triad of entities for a precise period. Discount schemes, current price lists, lowest prices, and a display of sales for the last two years for the currently selected configuration of products and entities are helpful in creating this special pricing. All eCA module agendas have proposal approval through a modellable Workflow separately for each segment. Historical backup of the proposal after each change is a matter of course.



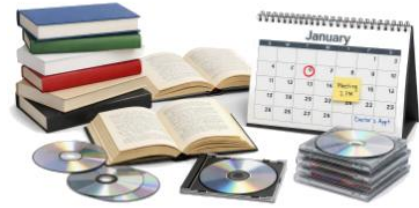
e-Document Registration



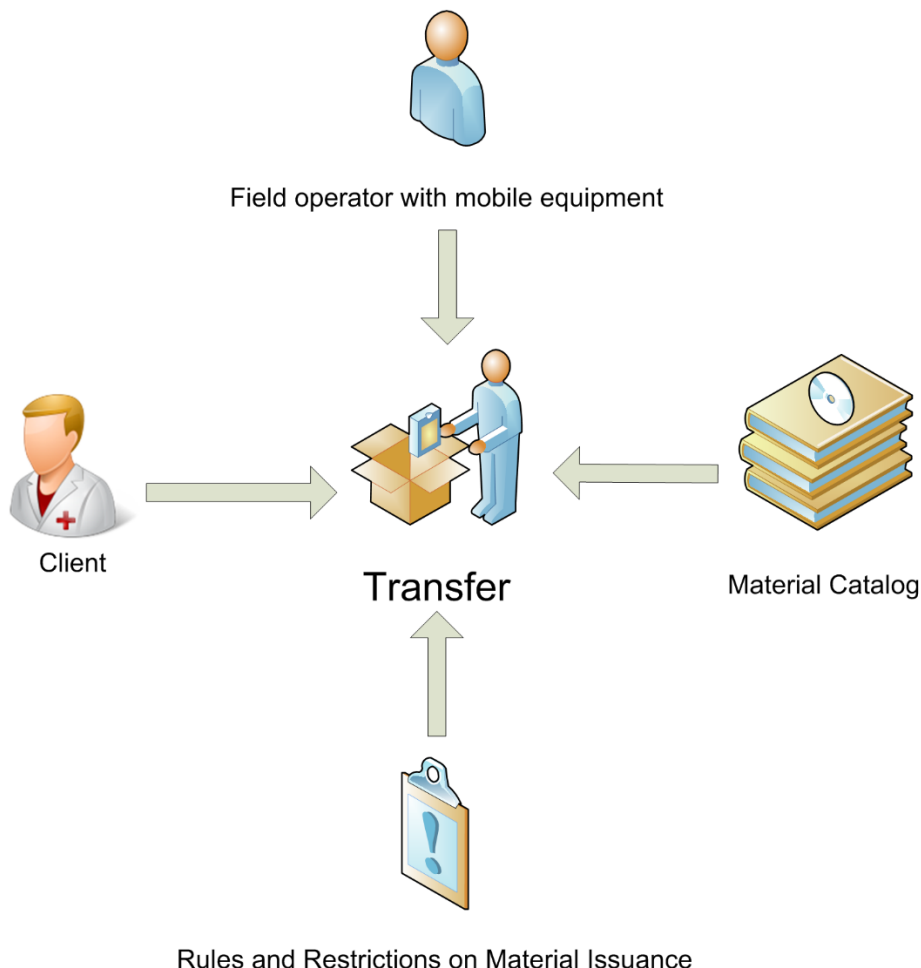
A module for document registration and overall document flow management. Every company needs to record documents in a controlled manner, track their validity and interrelationships, and collect other important administrative information associated with the documents on file. This module is ideally suited for invoice registration, enabling the organization to comply with its legal obligation to keep records of invoices. A series of additional documents can be attached to each document. Documents can be linked to specific attributes such as a registration number, variable symbol, specific client, etc. The module is also successfully used for contract registration. It creates a comprehensive, interconnected structure between contracts and their amendments. Documents are addressed to specific individuals. Each document is assigned to a specific owner, and the system prevents unauthorized persons from accessing sensitive documents. This module can also include a supplier catalog, to which individual administrative documents such as invoices and contracts are then linked. The module features very handy tools for changing the owner or holder of a document if a person leaves the organization or is replaced by another employee.



e-Material Management



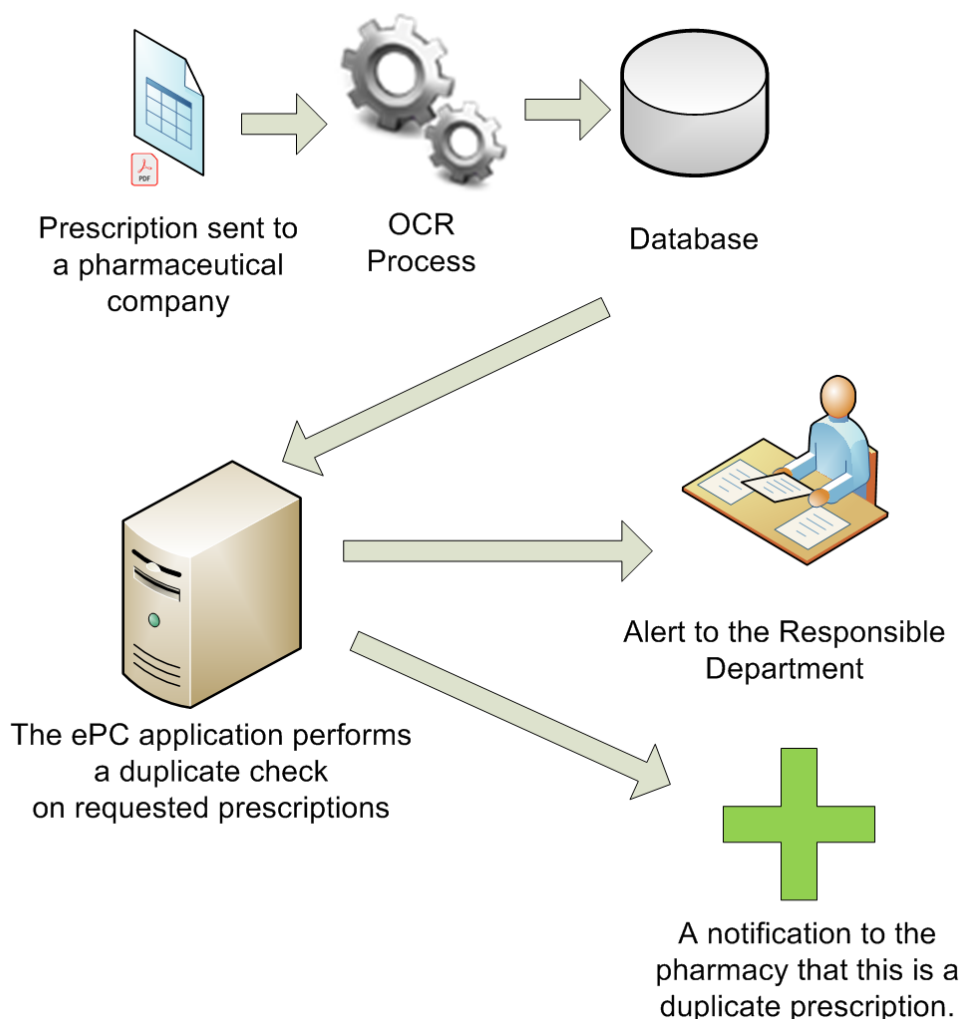
A module that tracks materials issued to individual clients. It contains a detailed catalog of individual materials, whether they are books, gift items, various media, office supplies, or other gifts. The system also assumes that a client database already exists. This could be a catalog from a CRM module or a traditional catalog of doctors or healthcare providers. The module allows for the controlled distribution of individual items to specific clients, with detailed tracking of the value of items a single client has already received, ensuring that the legal limit on the value of gifts within a single calendar year is not exceeded. The application allows for the management of material and client catalogs at headquarters. In the field, mobile devices such as smartphones or tablets can also be used. Every field representative who is about to process a material transfer to a client can check the value of gifts already received by that client during the current calendar year. This eliminates any possibility of exceeding the legally prescribed donation value limit. The system also allows for the distribution of excessively valuable donations among multiple clients. Once again, it offers controlled reporting and clear records of issued materials, as well as a list of clients who have received donations.



e-Prescription Control



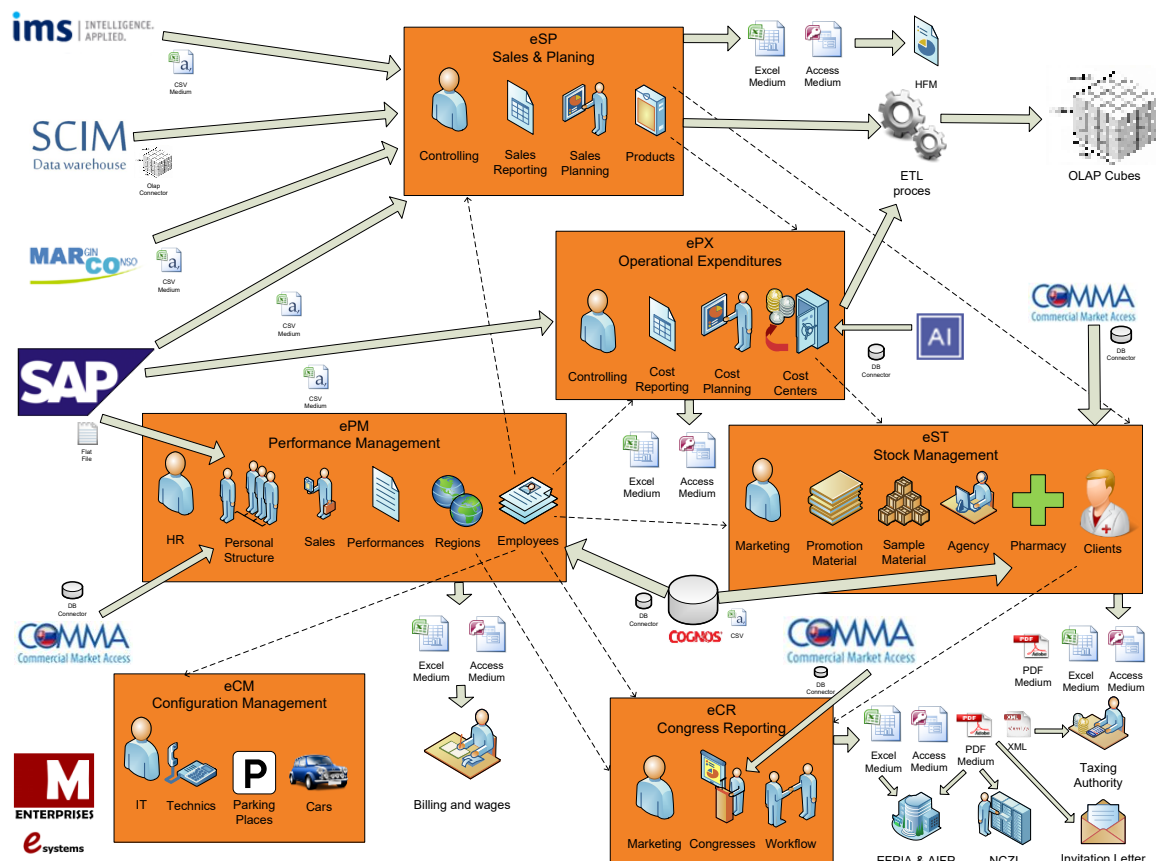
A prescription verification module that prevents the redistribution of medications outside the country of origin. If a pharmacy receives a prescription for a more expensive medication that could be sold at a higher price abroad, the pharmacy sends this prescription to the pharmaceutical company's headquarters and requests confirmation that it may dispense the medication. The pharmaceutical company checks to ensure that this is not a duplicate request, where someone is attempting to obtain the medication to resell it at a higher price abroad. After verifying that it is not duplicate, the pharmaceutical company issues confirmation that the medication may be dispensed to the patient based on the prescription. This module collects prescriptions in image or PDF format that have been sent via email. It then uses OCR technology to read these images and PDF files and enters all relevant data into a database, where the system checks whether this prescription has already been requested by a previous pharmacy. In the event of an attempted duplicate dispensing, the system alerts the responsible department and sends the pharmacy a notification that this is an unauthorized duplicate dispensing.



eSystems as integrated environment

Process integration within eSystems successfully connects and automatizes work of individual departments

Even though we can supply each module separately, all the above-mentioned modules use a single mutually linked database storage location. It means we create the so-called Enterprise system where individual departments provide services to each other mainly via keeping the key, core data, which they have in their competence (employees, products, physicians, pharmacies, clients, sales, costs, technical equipment, etc.) always up to date. This arrangement and interconnection enable creation of various sets of tasks, which use the whole contents of these core data to a full extent. This is a space for sophisticated process automation and control in the whole scope of the needs on the side of company's headquarters as well as the individual medical representatives in the field. eSystems incorporate a time machine feature, i.e. recording of each modification of data done by a user. Therefore, this system meets the most demanding requirements for transparency and retrospective process revision. Despite its complexity, this environment is truly well arranged and user-friendly mainly due to clear separation of individual tasks and the environment created specifically to satisfy the needs of individual user roles. User roles in each application are modelled in the way that only a pre-defined group of people is granted access to application dialogues specifically designated for them. Each module keeps the record of log in and activity of each user who used the module. Some targeted applications and modules are multilingual, which represents one of basic prerequisites for the successful implementation of the system on a global level. Using modern and effective elements in jQuery creates a pleasant and useful environment for work with this robust web application.



Thank you for the attention you paid to this summary of our systems, and we will appreciate any presentation opportunity where we could take you deeper into the world of our efficient and useful modules.

Marek Mižov, Executive Director at M-Enterprises. s.r.o.

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