## ERP Project Activities

Skorkovský, ESF MU, KPH

## Purchase

Sales


Quotes->Net change calculation->
->Order->Vendor batch tracking e->
->Input Quality check->Receive, Put-away->
->Invoícing

Orders->Sub-Load and Load->
->Batch tracking
->Output Quality check->Picking ->Shipment
-> Invoicing -> Applying payments

## Main problem



## Main problem II

Wee need finite capacity scheduling

$\mathrm{T} 1+\mathrm{T} 2=\mathrm{X}$
Opt=Min(X)


## Why we cannot manage it ?



Unclear priorities, bad $=$ SOP,$\ldots$
$(\mathrm{SOP}=$ Standard Operation Procedures $)$

## Level production



## Level production strategy



| Period | Sales Forecast (kg) | Production plan (kg) | Inventory (kg) |
| :---: | :---: | :---: | :---: |
| Spring | 80 000,00 | 100000,00 | 20000,00 |
| Summer | 50000,00 | 100000,00 | 70000,00 |
| Fall | 120000,00 | 100000,00 | 50 000,00 |
| Winter | 150000,00 | 100 000,00 | 0,00 |
|  |  | 400000,00 | 140 000,00 |
| Hiring cost/worker | 100,00 |  |  |
| Firing cost/worker | 500,00 |  |  |
| Production cost/kg | 2,00 |  |  |
| Inventory carrying cost / kg | 0,50 |  |  |
| Production cost/kg/worker/quarter | 1000,00 |  |  |
| Beginning work force (workers) | 100,00 |  | $\downarrow$ |
|  | Cost of Level Production Strategy $(400,000 \times \$ 2.00)+(140,00 \times \$ .50)=\$ 870,000$ |  |  |

## Chase demand



## Chase demand strategy

| Period | Sales Forecast (kg) | Workers needed | Workers hired | Workers fired |
| :--- | ---: | ---: | ---: | ---: |
| Spring | 80000,00 | 80,00 | 0,00 |  |
| Summer | 50000,00 | 50,00 | 0,00 | 20 |
| Fall | 120000,00 | 120,00 | 70,00 |  |
| Winter | 150000,00 | 150,00 | 30,00 |  |
|  |  |  | 100,00 |  |

## Cost of Chase Demand Strategy <br> $(400,000 \times \$ 2.00)+(100 \times \$ 100)+(50 \times \$ 500)=\$ 835,000$

## Aggregate planning

## Planning involves decision hierarchy...



## A simple business case....

Printing Company in Upper Lower Corner village somewhere in backwoods has a small problem :
They use for managing printing procedures :

- a very basic economic system Sunshine written by Six grade student (a son of the owner) - written in Pascal
- another different systems for quotes calculation, logistics, production planning and control written in :
- v obsolete FOX PRO

- by 3 different programmers from 3 different companies
- MS Office


## A simple business case....

Competitive market requires :

- fast reaction to quotes
- variable quotes and their immediate costing (calculation)
- shortening of delivery times
- shortening lead times
- reduction of inventory values (paper)
- quality improvement
- processes driven by flexible workflow
- exact evaluation of finished jobs (production orders) in order to know real costs
- feed backs to external and internal signals such as :
- reasons of quotes dismissals
- reason of unexpected costs


## A simple business case....

- Competitive market requires :
- Modern and efficient SW tools to control these processes :
- prepress: desktop publishing, computer to plate, ...
- purchase of material (paper, colors,..)
- imposition
- printing using different technologies (sheets, rotary press,..)
- production planning and shop floor control
- finishing operations such as
- cutting
- gathering
- stitching
- flexible invoicing
- on-line accounting and so on and so on


## Printing machine

## 



## A simple business case....

Bottlenecks (TOC) - Threats (SWOT) :

- obsolete information system, which requires all time some changes, patches,...
- all parts of information system form an heterogeneous is IT tools heterogeneous hydra (finance management, costing, production, inventory, HR,... , which never provides user with real picture of the business
- inaccurate data from one application is inherited by another one, so the picture of the business always late
- Costing depends on human failing factors

■ one author of every single subsystem

- these authors never meet each other to coordinate their efforts...


## A simple business case....

## Bottlenecks (TOC) - Threats (SWOT) :

- internet auctions favour competitors which are cheaper and faster
- the size of paper and colour purchase orders are based on inexact assessment of purchasers (if we have a lot of orders, types of papers, various machines and so on, the optimum assignment of the purchase batches sizes is beyond ability of human being with paper and pencil)

Gaza gate


## A simple business case....

Messiah arrives and says : "I have for you this:"

- modern and flexible and standard ERP system
- background of IT company with tradition and experience
- background of global IT vendor

On the other hand an arriving messiah did not offer:

- the knowledge of printing industry
- printing application fully integrated with standard ERP
- Arriving applicant must :
- understand processes in printing industry
- be able to write printing application using development tools (languages) of standard ERP system
- implement the solution
- OR instead of these three blue marked points to find already existing vertical solution for printing industry, which is used all over the globe


## A simple business case....

## Finding a vertical is right!

- Let say, that we have found a foreign company with Print SOLUTION, which was implemented 100 -times and in different languages



## A simple business case....

- Live Meeting:
- application setup
- basic functions and a „sweet points"

- business case workflow (all the stages)
- Customer is happy and awaits consequential actions
- Vendor signs a contract about localisation and selling in pre-determined geographical area



## A simple main form of printing application PRINT integrated to ERP Navision



## Another form of printing application PRINT integrated to

## ERP Navision (imposition and colours)



## A simple business case....

Some reasons which persuaded ERP vendor to sign a contract with vendor of vertical solution PRINT:

- local market analysis (SWOT,GAP Analysis)
- expectation of repetitive sales - promising market segment
■ analysis of the competitors
- possible co-operation with other PRINT experts abroad (sales of services)



## Project entries..

## - Activities

- acquire necessary printing industry knowledge
- introduction training provided by supplier of PRINT application (vertical solution)
- team building
- budget (costs „business plan"- revenues)
- language localization ENG->CZE
- modification ERP and a Print for Czech conditions (market specifications and legislation)
- cope with inner application


## Project entries..

## - Activities

- translation of marketing material (fact sheet) and its printing in compliance with predefined templates
- creation of PWP presentation for selling
- prospect prediction - segments of market

■ naming of benefits „selling against"

- presentation to chosen prospects and reaction to questions- use of feedbacks to improve knowledge of printing industry
- Print price list generation


## Project entries..

## - Activities

„Kick-Off" meeting
when, who, what and why (Kicl

- PWP presentation

■invitation, graphic design

- selling invitation and follow-up
- Kick-Off

■ mapping of interests, business strategy modification and resource planning

## Proiect entries...(will be part of Critical Chain theory, which will

be show to students later)

## ■ Gantt



## Project entries...

## - Activities

- contract signature with pilot customer
- System implementation (only some important activities are mentioned here.. )
- feasibility study, analysis, target solution draft ......
- introduction training
- system customization
- tests of introduced modifications
- data transfers and setup of technological „master data"
- generation and selling licences and HW tools such as servers, ...
- change management


## Project entries...

## - Activities

System implementation (only some important activities are mentioned here.. )

- training with real data in the ERP system
- stock taking and transfer of balances on accounts
$\square$ sharp start
■ support and surveillance


Necessary knowledge for project management

## Project successful ?

(from Snapshot 0 ->Snapshot 1)


## Another possible project.

- Hotel chain Rocco Forte *****
- Where? (Great Britain $2 x$, Scotland $1 x$, Germany $2 x$, Prague $1 x$, Rome, Florence, CH, Russia ....)
- SW choice (chosen company for delivery standard accounting package of ERP and cooperation with author of hotel vertical solution : Serenissima Informatica, Padova)
- Choice of local partner (cz ms Dynamics NAV partner x : requirements -> stability, knowledge of international business, languages, references- testimonial abroad, ..)
- Milano (server farm for all hotels)
- All hotels using same chart of account (USoA=Uniform System of Accounts) - simple consolidation (IFRS)


## - Choice of hotel SW and accounting SW

## Another possible project...



## Another possible project



## Basic Concept (survey)



## Translation of text strings used for communication Protel<->Dynamics NAV to Czech language (necessary knowledge of terminology and language)



## Balance sheet (generation using accounting schemes -

## will be introduced to students )

## ROZVAHA04

Accounting scheme
Číslo řady $P$

## 001 AKTIVA CELKEM <br> 002 Pohledávky za upsaný základní kapitál

 003 Dlouhodoby majetek004 Dlouhodoby nehmotny majetek
005 Zřizovaci wýdaje
006 Nehmotné wýsledky yizzumu a wývoje 007 Software
008 Ocenitelná práva
009 Goodwil (+/-)
010 Jiny dlouhodobý nehmotný majetek $]$
011 Nedokončený dlouhodobý nehmotnýy majetzk
012 Poskytnuté zálohy na dlouhodobý nehmotný.
013 Dlouhodoby hmotny majetek
014 Pozemky
015 Stavby
016 Samostatné movité věci a soubory movity̌ch . 017 Péstitelské celky trvalych porostů 018 Základní stádo a tažná zyir̃ata 019 Jiný dlouhodobý hmotný majetek 020 Nedokončeny y dlouhodobý hmotný majetek 021 Poskytnuté zálohy na dlouhodobý hmotný ma 022 Oceñovaci rozdil k nabytému majetku (+/-) 023 Dlouhodoby finanční majetek
024 Podily v ovládaných a ruízených osobách 025 Podily v úcuetních jednotkách pod podstathým. 026 Ostathí dlouhodobé cenné papiry a podily 027 Půj.ǰky a úveřry - ovládajicí a rííicíc osoba, po... 028 Jiny dlouhodobý finanční majetek
029 Porizovaný dlouhodobý finančnín majetek 030 Poskytnuté zálohy na dlouhodobý finanční $m$ 031 Oběžná aktiva
032 Zásoby
033 Materiá
034 Nedokončená výroba a polotovary
035 Vyrobky

Typ s... Součet Vzorec B001+K001 Vzorec B002+K002 Vzorec B003+K003 Vzorec B004+K004 Vzorec B005+K005 Vzorec B006+K006 Vzorec B007+K007 Vzorec B008+K008 Vzorec B009+K009 Vzorec B010+K010 Vzorec B011+K011 Vzorec B012+K012 Vzorec B013+K013 Vzorec B014+K014 Vzorec B015+K015 Vzorec B016+K016 Vzorec B017+K017 Vzorec B018+K018 Vzorec B019+K019 VZorec B020+K020 Vzorec B021+K021 Vzorec B022+K022 Vzorec B023+K023 Vzorec B024+K024 Vzorec B025+K025 Vzorec B026+K026 Vzorec B027+K027 Vzorec B028+K028 Vzorec B029+K029 Vzorec B030+K030 Vzorec B031+K031 Vzorec B032+K032 Vzorec B033+K033 Vzorec B034+K034 Vzorec B035+K035


## Uniform System of Accounts

| No. | Name | $\checkmark$ - Income\|Balance | $\checkmark$ Account Type | $\checkmark$ Mapping | $\checkmark$ count syme ${ }^{-1}$ | Ceech description |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| 0047500 | OtherDebitors- -nsurance Advances Premium Payment | Balance Sheet | Posting |  | 381 | 100 Náklady pisistich obdobil-pojittenizaméstnanciu |
| 0067700 | Prepaid rent | Balance Sheet | Posting |  | 381 | 200 Náklay piisitich obdobi-najjemné |
| 0069000 | Prepaid hsurance | Balance Sheet | Posting |  | 381 | 300 Náklady pisistich obdobi-pojisteníbudowa ad |
| 0069500 | Prepaid Licences Q Permits | Balance Sheet | Posting |  | 381 | 310 Náklay pisistich období-licence a povoleni |
| 0070000 | Prepaid Maintenance Contrats | Balance Sheet | Posting |  | 381 | 400 Náklady pisistich obdobi-provazin inklady |
| 0070300 | PrepaidSales \& Marketing | Balance Sheet | Posting |  | 381 | 500 Náklaty piistich obdobii-Salesß Marketing |
| 0070350 | Prepaid-Propertytaxes | Balance Sheet | Posting |  | 381 | 600 Náklady pistsich období-daiz nemovitosti |
| 0141000 | FinancingCosts | BalanceSheet | Posting |  | 381 | 700 Náklady pisistich obdobi- náklady a ifinancovàí |
| 0141100 | Brand | Balance Sheet | Posting |  | 381 | 800 Náklady piristich obdobi-rebranding |
| 0155000 | Pre Opening Cost | BalanceSheet | Posting |  | 381 | 900 Náklady na zprovezneñíhotelu |
| 025010 | GRN\|-Stores | Balance Sheet | Posting |  | 383 | 100 V'ddje p pistisich obdobi- stock |
| 0250050 | GRN NonStores | Balance Sheet | Posting |  | 383 | 200 V'daje piisticich obdobi- non-stock |
| 024900 | Deferred Income | Balance Sheet | Posting |  | 384 | 100 V'inosypisistich období |
| 0249100 | Deferred Income Other | Balance Sheet | Posting |  | 384 | 200 V'nosy pisistich obdobi'-jiné |
| 0249500 | Deferred Income.Subscription | Balance Sheet | Posting |  | 384 | 300 Vinosypisistich období |
| 0021000 | Guestledger(Accrued Income) | Balance Sheet | Posting |  | 385 | 100 Prijmy piristich obdobi- neywaluruované triby |
| 0048500 | Accrued Income-other | BalanceSheet | Posting |  | 385 | 200 Prijuy piisitch obdobi- ostatní |

Accrued Revenues (revenues generated in the future periods) Income (still not created

## General Ledger

## Accrued and Deferrals...(one of many helping letters)

## Ciao amico,

For Deferred Costs (In italian "Risconti") it mean when You receive an Invoice for Service;
Service provided partially in one Fiscal Year, and Partially for the following Fiscal Year. Es. : In November You receive an Invoice for IT Service provided from November 2007 until June 2008.
You have to charge 2 Months for 2007 and 6 Months for 2008 Fiscal Year.
In other words Deferred Costs happens when You receive in advance an Invoice for Services provided in the future.
It's possible to have the same also for Revenues

The opposite is called Accrued (In Italian Ratei).
Es. : In May 2008 You receive an invoice for Services provided from November 2007 until May 2008.
Normally You have to charge in advance, Cost for Services for November and December 2007
without any Invoice, and You balance this Cost with special Accounts.
This happens very often in Hotel management because, for management control, they have to produce every month Profit \& loss report. It's more or less like a Year close done on every Month.
In other words Accrued Costs happens when You receive an Invoice for Services after the Service was provided.
The same can happens also for revenues.
I hope this explanation can be clear enough.
Regards.

## Another possible project -Automotive, Appliances,

 packaging industry


## Slitting and levelling of the steel



Knowledge of methods, which are necessary for project management and process management

- Theory of Constraint (will be introduced-72 slides)
- Critical chain methodology
- Thinking tools
- Throughput accounting
- Balanced Scorecard (will be introduced)
- SWOT a Gap Analysis
- MS Office (Word, Powerpoint a Excel)
- ERP system and its logic (will be introduced- 28 hours)
- Logistics
- Finance Management and Controlling
- Production Management (MRP,MRP-II, JIT and DBR)
- Market analysis

Knowledge of methods, which are necessary for project management and process management

- Yield Management - YM (billing different rates for same service to different customers in order to reach maximum revenue)
- Knowledge of the condition necessary pro use of YM tool :
- relatively high \% of the fixed costs to complete company costs
- predictable demand
- ephemeral product (passing, fleeting,
- selling before service is provided
- Some Yield management methods
- e.g. Threshold method- see next slide


## Threshold curves (booking)



## Threshold curves (booking)



Knowledge of methods, which are necessary for project management and process management

- Legal aspects of contacts
- Cost management
- Foreign languages
- Basic knowledge of IT architecture will be introduced
- Methods used for project management
- Business Analytics

- Methods supporting decision making
- Risk management
- Basics of marketing


## Business Analytics - some reason why to discuss


The data is not all in the ERP
The tools are rigid and hard to learn
The tools don't reflect how we work today

- They don't span the continuum of needs


## Simplified diagram of ERP usage





## Managing Through the profit valley

- Initially, most partners business are run by one or two founders, who manage every part of the business : sales and marketing, project management, service delivery management, accounting, sub-load and load, collection, HR and many many more....


Those guys are responsible for performing all day-to-day functions of their business

## Managing Through the profit valley

- As their business grows over 10 employees, it is impossible to perform all their role properly.
- Cash flow becomes erratic (chaos)
- Projects go offside,
- Filling pipeline is a struggle
- Revenue stays still strong but profitability drops
- Company is trapped in the „Profit Valley"




## Managing Through the profit valley

■ How to escape the profit valley?
■ How to avoid it?

- First key
- Maintain revenue velocity and the momentum of the new customer adds. You cannot afford to take the foot of the gas if you want to climb out of the valley
- The portfolio of the customers must be some smaller and some larger
- Second key
- Maintain high level of service quality to avoid discounting and efficiency factor
- Sure Step methodology of project Management
- Help desk
- Right tools and right people


## Managing Through the profit valley

- Third key
- Financial management control and cash flow is the king
- Invoice quickly and pay consistently (but not early !!!)
- To maintaining Cash- to-cash cycle as short as possible
- Fourth key
- Software package handling all aspects of financial customer relationship and project management


## Managing Through the profit valley




Thanks for Your Attention
Will be placed on IS.MUNI.CZ in the tuition materials (studijní materiály)

If everyone pulls at the different end of the rope, than your project results will be a mess... (see rule 99 \%)

