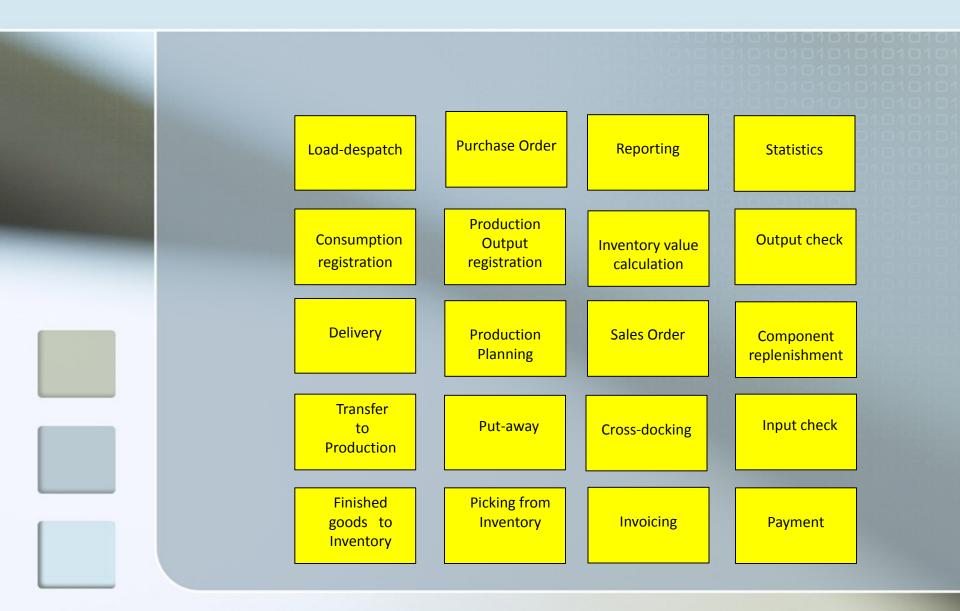


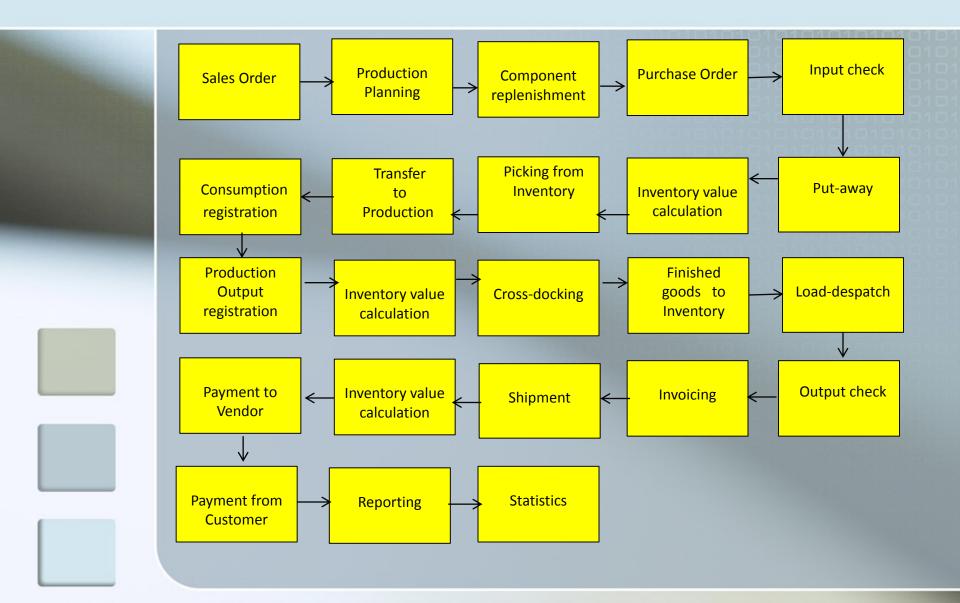
ERP Project Activities

Skorkovský, ESF MU, Department of Business Economics , version 20120919

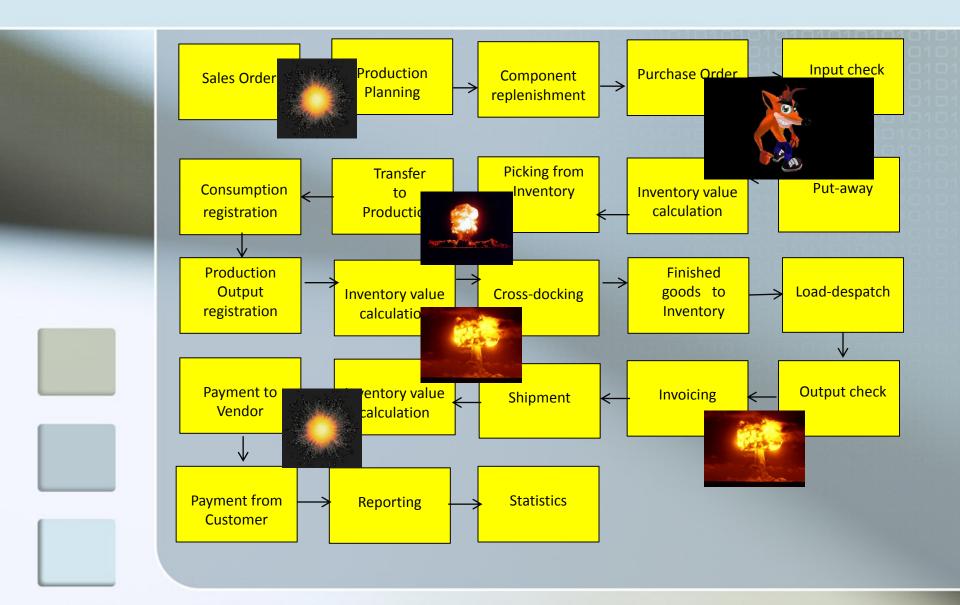
Your main task (not organised set of processes)



Your main task (organised set of processes)

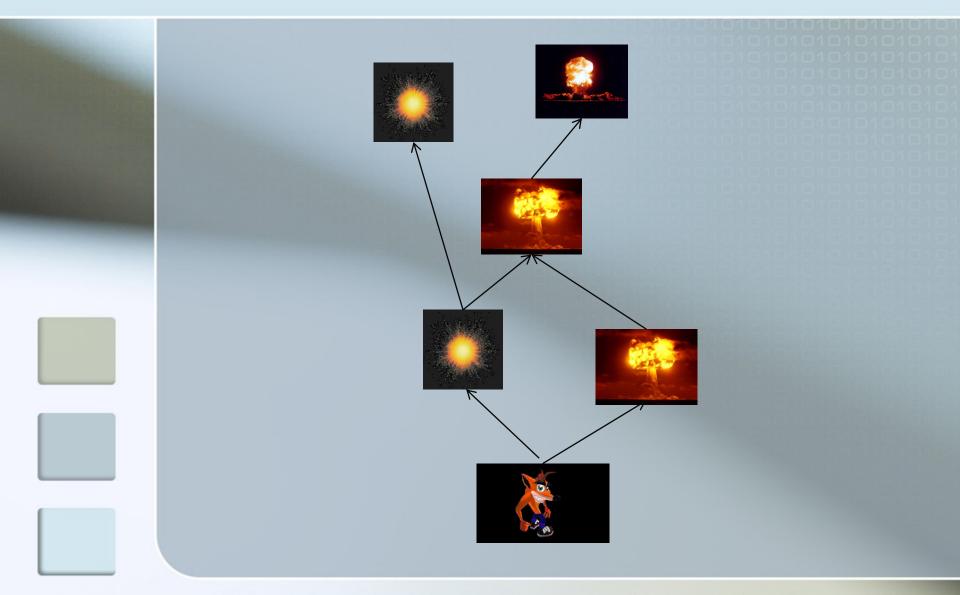


Your main task (possible problems, bottlenecks,..)



Your main task

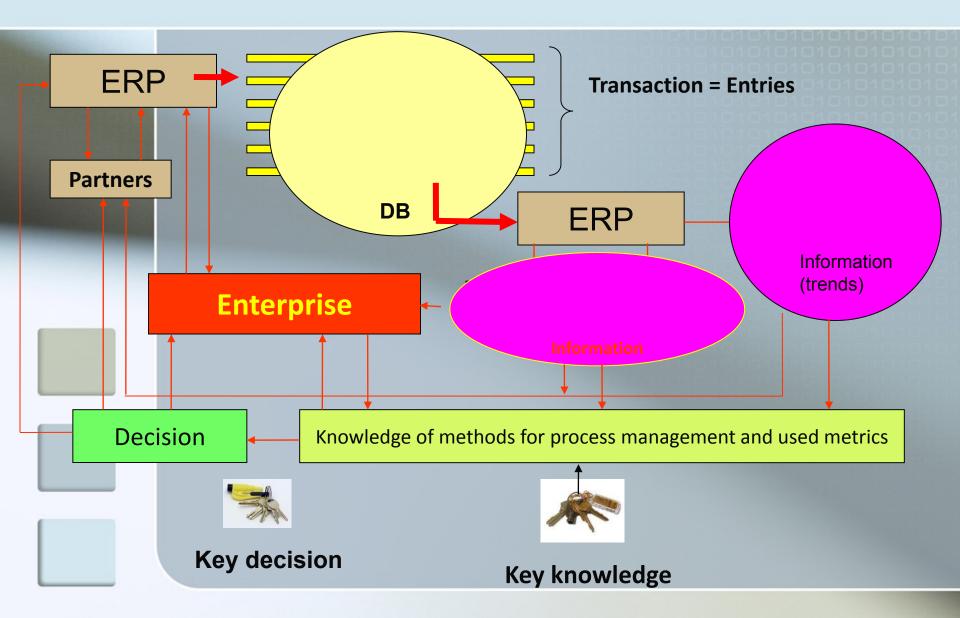
(Search - HOW ??? Measure impacts –HOW ??? and Destroy – HOW ???)

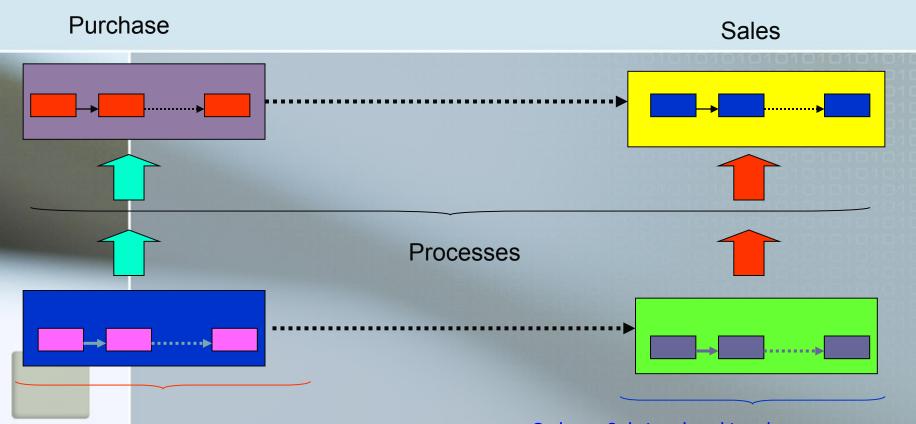


Methods (not sorted so far)

- Theory of Constraints
- Critical Chain
- Ishikawa Fishbone Diagram
- Pareto Analysis
- OLAP (On-Line Analytic Processing)
- Kepner Tregoe method
- MaxMax and MaxMin (Hurwitz)
- SWOT
- ERP Statistics and reporting
- Balanced Scorecard
- And many, many more.....

Simplified diagram of ERP usage



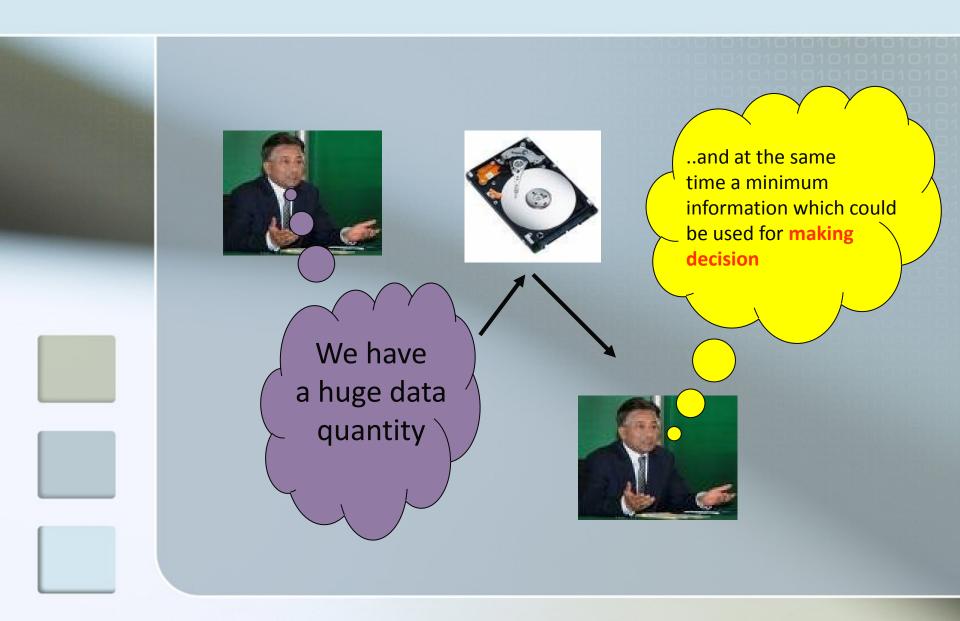


ERP

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

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

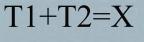
Main problem (one of many)



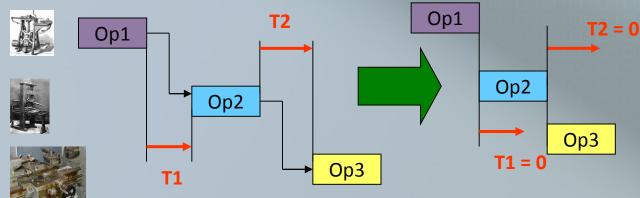
Main problem II (need of reliable data)

Wee need finite capacity scheduling (APS)









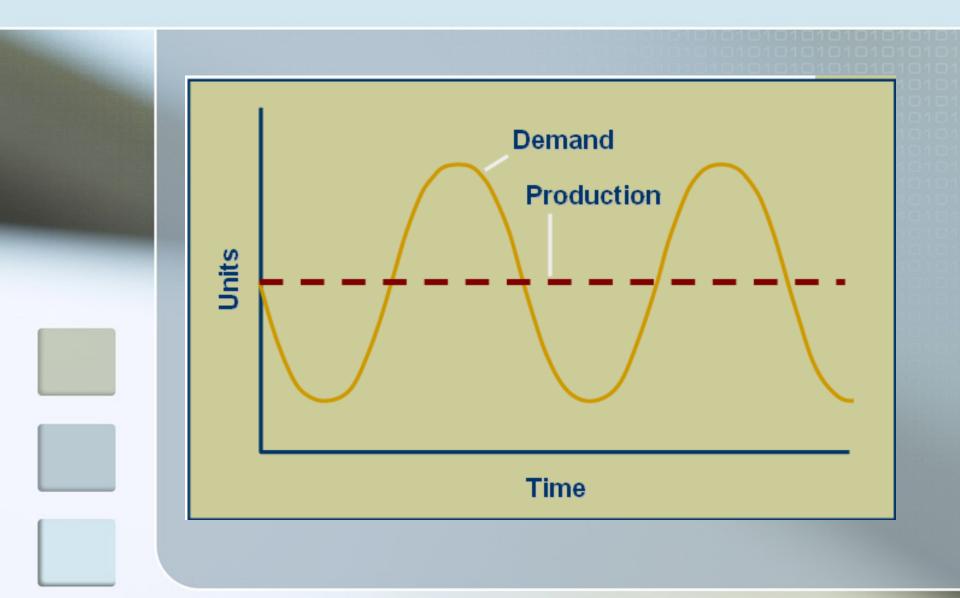
Why we cannot manage it ?



Unclear priorities, bad = SOP,...

(SOP = Standard Operation Procedures)

Level production

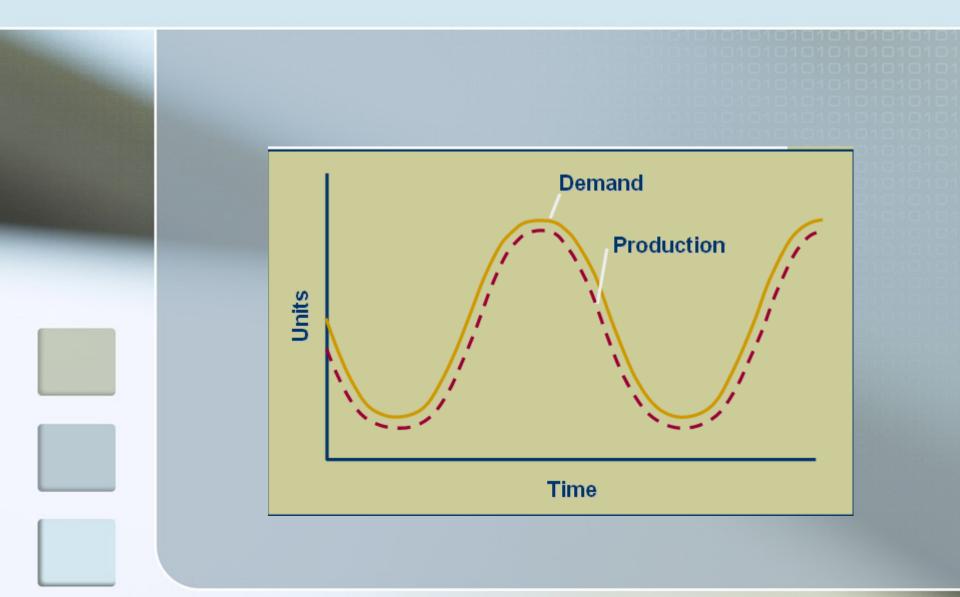


Level production strategy

| Period | Sales Forecast (kg) | Production plan (kg) | Inventory (kg) |
|--|------------------------|-------------------------|----------------|
| Spring | 80 000,00 | 100 000,00 | 20 000,00 |
| Summer | 50 000,00 | 100 000,00 | 70 000,00 |
| Fall | 120 000,00 | 100 000,00 | 50 000,00 |
| Winter | 150 000,00 | 100 000,00 | 0,00 |
| | | 400 000,00 | 140 000,00 |
| Hiring cost/worker Firing cost/worker | | 00,00 | |
| Production cost/kg | | 2,00 | |
| Inventory carrying cost /kg | | 0,50 | |
| Production cost/kg/worker/quarter | 10 | 00,00 | |
| Beginning work force (workers) | 1 | 00,00 | |

Cost of Level Production Strategy (400,000 X \$2.00) + (140,00 X \$.50) = \$870,000

Chase demand



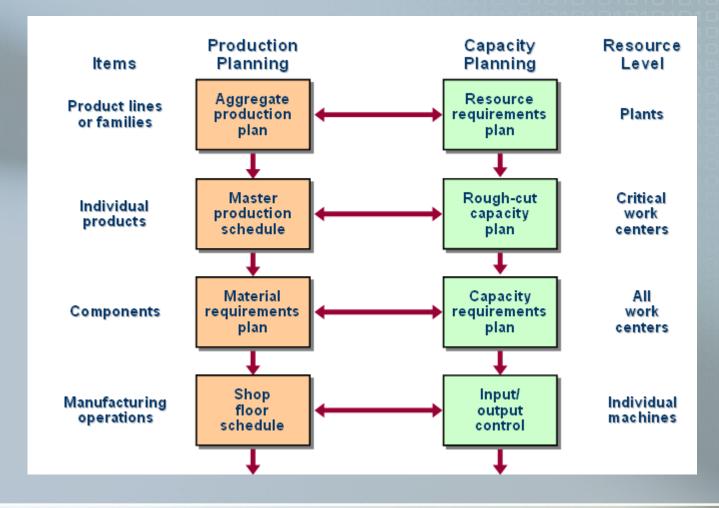
Chase demand strategy

| Period | Sales Forecast (kg) | Workers needed | Workers hired | Workers fired |
|--------|---------------------|----------------|---------------|---------------|
| Spring | 80 000,00 | 80,00 | 0,00 | 20 |
| Summer | 50 000,00 | 50,00 | 0,00 | 30 |
| Fall | 120 000,00 | 120,00 | 70,00 | |
| Winter | 150 000,00 | 150,00 | 30,00 | 101010101 |
| | | | 100,00 | 50,00 |

Cost of Chase Demand Strategy (400,000 X \$2.00) + (100 x \$100) + (50 x \$500) = \$835,000

Aggregate planning

Planning involves decision hierarchy...



A simple business case....(example)

- 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

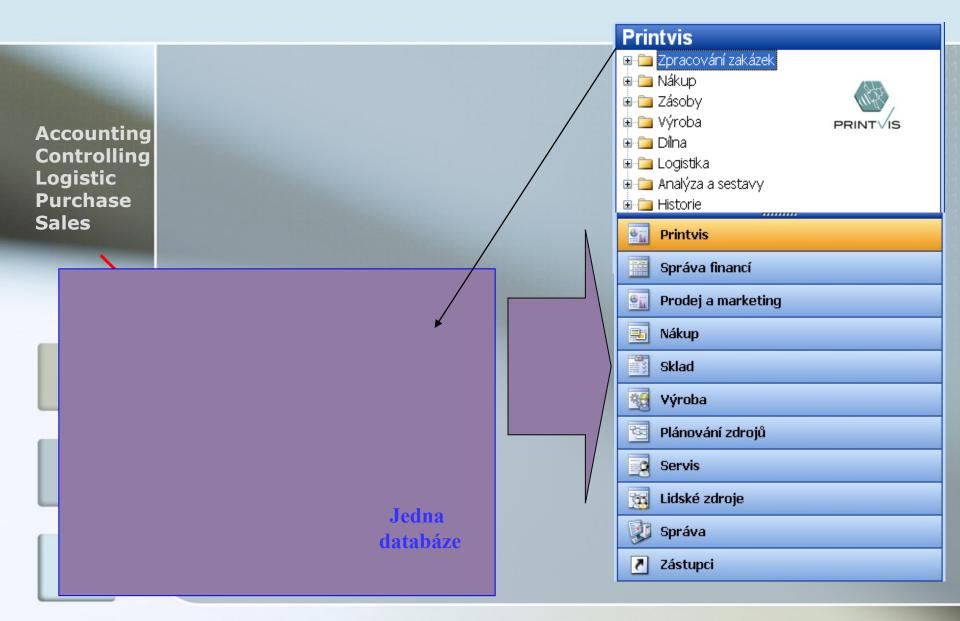




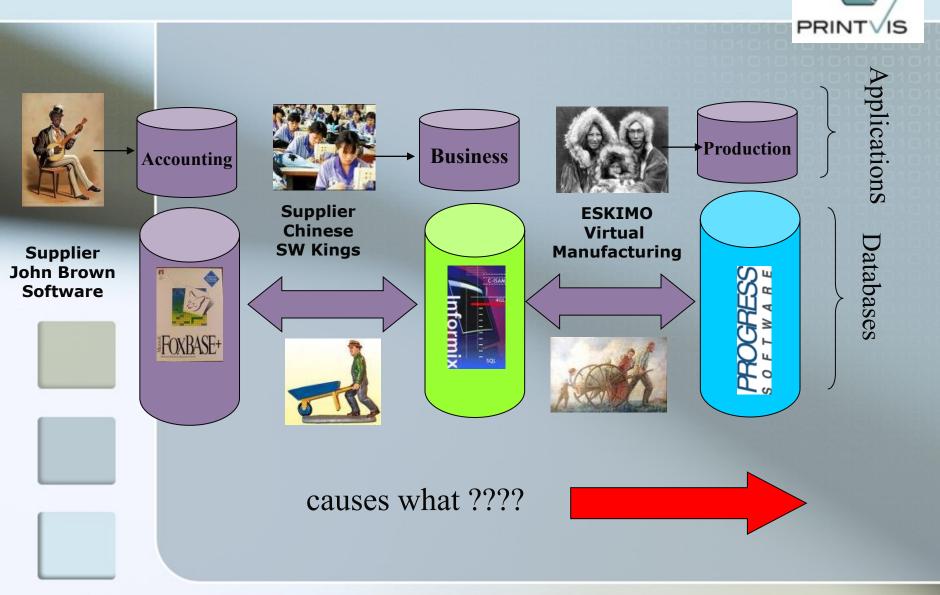
- by 3 different programmers from 3 different companies
- MS Office



Solution fully integrated to standard ERP package



Actual situation (example)



Effects

difficult upgrades of applications
difficult communication between different applications
reduplicated data (redundant)
non actual data->bad decisions
etc.



A simple business case (printing industry)....example

Competitive market could requires for instance :

- fast reaction to quotes
- variable quotes and their immediate costing (calculation)
- shortening of delivery times
- shortening lead times and flow times
- reduction of inventory values (paper, colors)->higher liquidity
- quality improvement ->8D reports should be used
- 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 (why ?????)
 - reason of unexpected costs

- Competitive market also requires :
 - Modern and efficient SW tools to control these processes :
 - **prepress:** desktop publishing, computer to plate, ...
 - purchase of material (paper, colors,..)
 - imposition (how to put locate texts on the paper)
 - printing using different technologies (sheets, rotary press,..)
 - production planning and shop floor control
 - finishing operations such as
 - cutting
 - gathering
- special printing operations

- stitching
- flexible invoicing
- on-line accounting and so on and so on

Printing machine



Bottlenecks (TOC) – Threats (SWOT) :

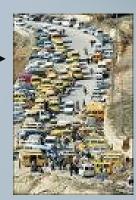
- obsolete information system, which requires all time some changes, patches,...
- all parts of information system form an heterogeneous is IT tools heterogeneous hydra :finance management, costing, production, inventory, HR,... ,which never provides user with real picture of the business
- inaccurate 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...

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 —





- 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 (or any other base on chosen branch)
 - 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

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

One database only

Other standard ERP modules : Service Management Human Resources Business Analytics.. Accounting Logistics Purchase and Payables Sales and Receivables Standard production CRM



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

| | | 01 | 10101010 |
|--|---|--|------------------|
| and the second se | 🖬 Order 20050 James Dailey Ltd Case Card | | |
| Cold Cold Cold Party | General Invoicing Shipment Foreign Trade Info Other | All | Order |
| | Sell-To No. 💌 20000 💽 🌽 ID 80 | 🖉 🚺 Quote no | <u> </u> |
| | Sell-to Name James Dailey Ltd. | Search Order No | 11.01.04 🔳 |
| | Sell-To Address 153 Thomas Drive | | Show de 📃 🚞 |
| | Sell-To Postal Code/City . GB-CV6 1GY 💽 Coventry | Salesperson 505 | Sonny Salesman |
| | Sell-To Phone Fax | Customer Estimator | |
| State of the local division of the local div | Sell-To Contact Mr. James Dailey 💽 | Order Coordinator NVS | |
| | Your Reference | Responsible 🔲 NVS 💽 | NVS Superuser |
| | Old order number | Status Code ORDER 💽 | Order confirmati |
| | Order Type | Deadline 12.01.04 💽 | Next Status |
| | Product Group 400 T Brochures | Rejection Code | PLAN |
| | Job Name test imposition | Eco-label | Change Status |
| | | | |
| | J., V., A., Type R., Group Job Quan Pa Code | C., C. F., B. Paper Job Name External Descrip | tion |
| | ▶ 1 1 ✔ Order 400 4 1.000 32 A5 | 4 4 223 test impositi 1.000 brochures | |
| | | | |
| | | | ~ |
| | | | > |
| | Job New ⊻er. ► New Job ► Order ► | Milestones Job Items Print | / / 🗉 🗀 |
| | Job | | |
| | | | 100 |

Another form of printing application **PRINT** integrated to

ERP Navision (imposition and colours)

| Contraction of the | 299 - Technical specifications for: sheet / pieces / imposition | |
|--------------------|--|-----|
| | Sheet No I of Paper Item No. 223 Paper Item No. 223 Job Item No I of Quantity I 000 1000 Satin Princess Colors Front . 4 Varnish Front . Paper Quality I 15,00 Different Colors 4 Karnish Back . | |
| | Sheet Format code Width | 4 |
| | Printing met Work and Turn Pages in Sh 32 Reverse Pla | 29 |
| | Scrap | ĕda |

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

- Iocal market analysis (SWOT, GAP Analysis, BPM, BSC, Pareto, Ishikawa Fish Bone diagram, TOC, CC....)
- expectation of repetitive sales promising market segment ->CRM application (pains and benefits)
- analysis of the competitors-> CRM
- possible co-operation with other PRINT experts abroad (sales of services)



Project entries..

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

Project entries..

- 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..

- "Kick-Off" meeting
 - when, who, what and why (Kicling
 - PWP presentation



- invitation, graphic design
 selling invitation and follow-up
 Kick-Off
- mapping of interests, business strategy modification and resource planning

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

be show to students later)

Gantt

| | Projected Trillestones | |
|--------------------------------|---|----------|
| Date | 5/1/2006 Actual | |
| Week | September October November December January February March April 1 2 3 4 1 2 3 <t< th=""><th>May Hour</th></t<> | May Hour |
| lanning/ Irganization | | 60 |
| Research | 100 Hours | 50 |
| | 100 Hours | |
| Prainstorming | 70 Hours | 70 |
| andem Bike est | 4 Hours | 4 |
| est Fixture lesign & Manuf. | 120 Hours | 105 |
| nd Semester Nanning | 10 Hours 10 Hours 10 Hours | 10 |
| est Fixture esting | 60 Hours | 77 |
| rame Material | 20 Hours | 12 |
| election | 20 Hours 20 | 15 |
| | 15 Hours T | |
| rame Design | 10 Hours | 68 |
| Parts Acquired | 25 Hours | 25 |
| faterials/ equipment | 10 Hours 20 Hours | 20 |
| Prototype Construction | 60 Hours 😾 | 400 |
| airing Design & | 50 Hours ★ | 191 |
| Prototype esting | 100 Hours | 15 |
| inal Vehicle onstruction | 50 Hours 🖈 | 80 |
| Vebsite | 28 Hours 20 1 | 28 |
| undraising | | 33 |
| Presentation 1 | 33 Hours 40 Hours 🔶 | 60 |
| | <u>80 Hours</u> | * |
| ompetition | | |
| resentation 2 | 100 Hours | 15 |
| DE | 15 Hours | 15 |
| ravel Time | 60 Hours | 60 |
| inal Report | 40 Hours | 42 |
| | 42 Hours | |
| | | 145 |

Project entries...

- 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..)

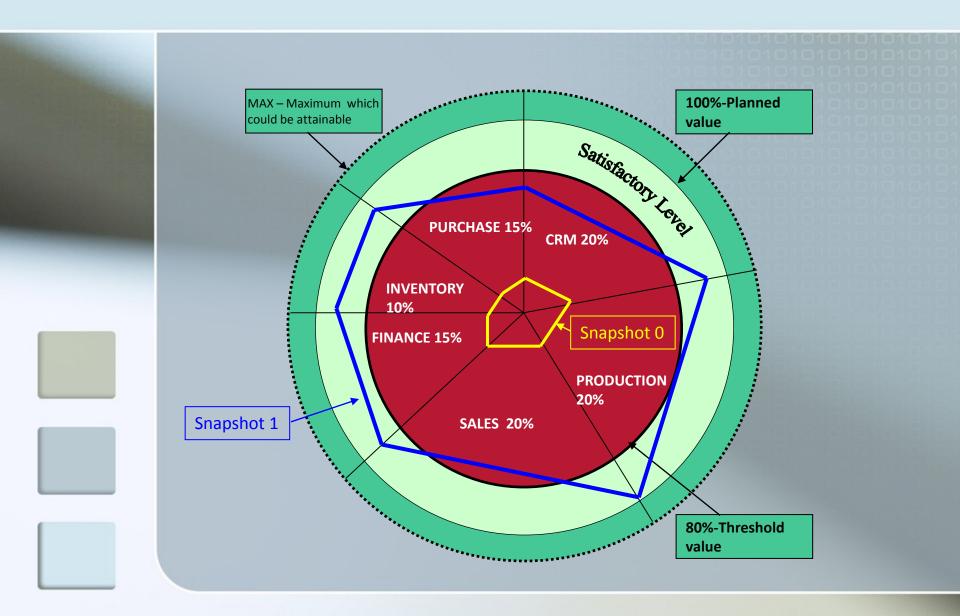
training with real data in the ERP system
 stock taking and transfer of balances on accounts

- 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 2x, Scotland 1x, Germany 2x, Prague 1x, 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,

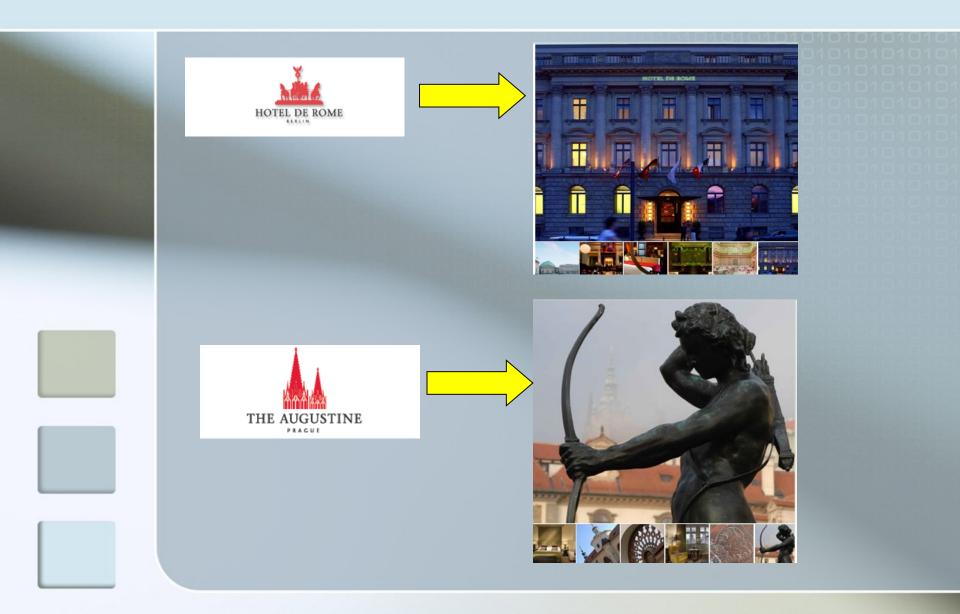
languages, references- testimonial abroad, ..)

- 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

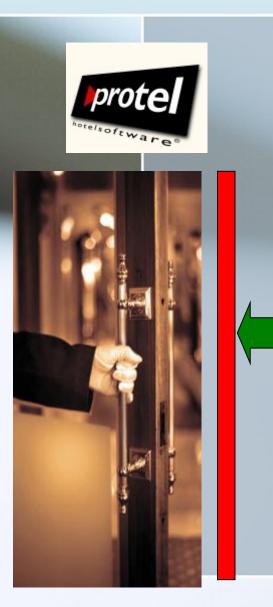
Another possible project...



Another possible project



Basic Concept (survey)







rok 2005

Základ daně

50

10

242

Daň na výstupu

10

47

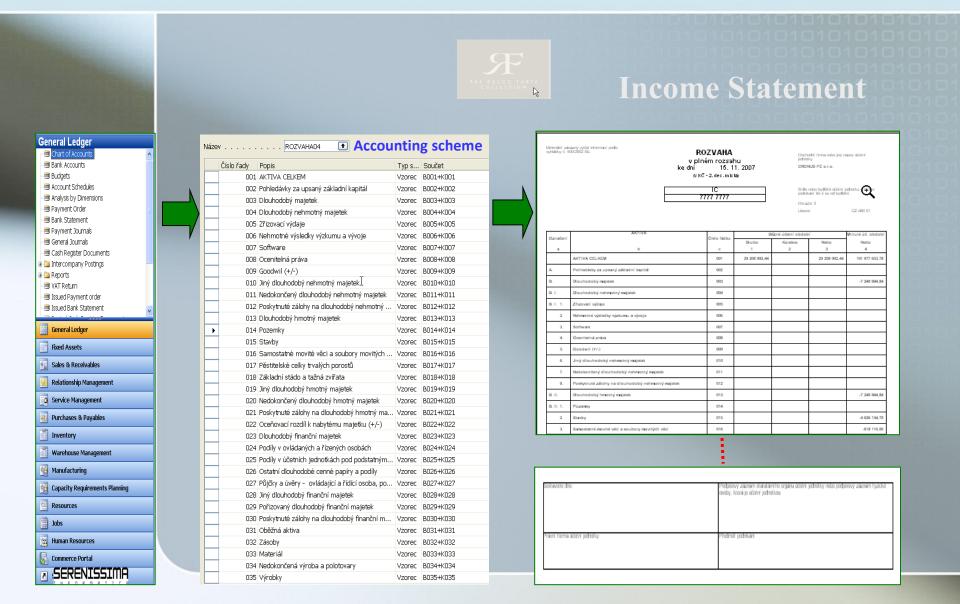
Translation of text strings used for communication Protel<->Dynamics NAV to Czech language (necessary knowledge of terminology and language)

| T H E | | FORTE ON R | | 1 | |
|---|----------------|------------------|------------|------|--|
| | | | | | |
| 1 a a a a a a a a a a a a a a a a a a a | | | е. •Ш.• | ABBI | |
| | (Czec | 84 ch st | | gs | |
| COLUMN TO A | Real (200) 2.5 | | 14.55 | T. | |

| | В | С | D | E |
|----|-------|---------------|---|--|
| 45 | 57002 | Option String | Period,Fiscal Year | Období,Fiskální rok |
| 46 | 57002 | Field Name | Accrued/Deferred Amount Type | Typ částky na časovém rozlišení |
| | | | ,Accrued Income,Accrued Charge,Deferred | ,Příjmy příštích období,Výdaje příštích období,Náklady |
| 47 | 57002 | Option String | Charge, Deferred Revenue | příštích období, Výnosy příštích období |
| 48 | 57002 | Field Name | Changed Original Data | Původní data změněna |
| 49 | 57002 | Field Name | Journal Template Name | Název šablony deníku |
| 50 | 57002 | Field Name | Document Type | Typ dokladu |
| 51 | 57002 | Option String | ,Order,Invoice,Credit Memo | ,Objednávka,Faktura,Dobropis |
| 52 | 57002 | Field Name | Journal Batch Name | Název listu deníku |
| 53 | 57002 | Field Name | Line No. | Číslo řádku |
| 54 | 57002 | Field Name | G/L Entry No. | Číslo věcné položky |
| 55 | 57002 | Field Name | Processed Flag | Číslo věcné položky |
| 56 | 57002 | Field Name | Deferred Posting | Odložené zaúčtování |
| 57 | 57002 | Field Name | To be Deferred | Zahrnout do příštích období |
| 58 | 57002 | Field Name | Document No. | Čís.dokladu |
| 59 | 57002 | Field Name | Line No. | Číslo řádku |
| 50 | 57002 | Field Name | Account No. | Číslo účtu |
| 61 | 57002 | Field Name | Account Description | Název účtu |
| 62 | 57002 | Field Name | Balance Account No. | Název rozvahového účtu |
| 53 | 57002 | Field Name | Balance Account Description | Rozvahový účet - popis |
| 64 | 57002 | Field Name | Amount | Částka |
| 65 | 57002 | Table | Accr/Def Amount Journal Header | Hlavička deníku pro částky na časovém rozlišení |
| 56 | 57002 | Text Constant | No journal line data found ! | V řádku deníku nebyla nalezena žádná data ! |
| 57 | 57002 | Text Constant | Date in Closed Period | Datum v uzavřeném období |
| 58 | 57002 | Text Constant | Initial Date not in Actual Fiscal Year | Počáteční datum nespadá do stávajícího fiskálního roku |
| 69 | 57002 | Text Constant | Final Data < Initial Data | Konečné datum < Počáteční datum |
| 70 | 57002 | Text Constant | Journal Amount Missing | V deníku chybí částka |
| | | | - | Tento typ není povolený pro opožděné zaúčtování Odložené |
| 71 | 57002 | Text Constant | Type Not allowed with Def. Amount Delayed Posting | částky |
| | | | - | Zaúčtování Odložené částky na časové rpzlišení není |
| 72 | 57002 | Text Constant | Def.Posting not allowed with Journaling Period = Period | povoleno pokud se perioda zápisu = Období |
| | | | | Typ účtu %1 není platný účtování Odložené částky na |
| 73 | 57002 | Text Constant | Account Type %1 not valid for Deferred | časové rozlišení |
| 74 | | Field Name | Section Type | Typ sekce |
| 75 | 57003 | Option String | ,Sale,Purchase,G/L Ledger | ,Prodej,Nákup,Hlavní kniha |

Balance sheet (generation using accounting schemes –

will be introduced to students)

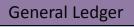


Uniform System of Accounts

| No. | Name | ▼ Income/Balance | Account Type | ▼ Mappin | g 🔻 count synte 🔻 | Analytic | | Czech description |
|---------|--|----------------------|--------------|----------|-------------------|----------|-------|--|
| | | | | | | | | 101 |
| 02/000 | I STRINT WIN | parameter and ex- | | | | 120 | LUVUL | el e koltarem |
| 0047500 | Other Debtors - Insurance Advances Premium Payment | Balance Sheet | Posting | | 381 | 100 | Nákla | dy příštích období - pojištění zaměstnanců |
| 0067700 | Prepaid rent | Balance Sheet | Posting | | 381 | 200 | Nákla | dy příštích období - nájemné |
| 0069000 | Prepaid Insurance | Balance Sheet | Posting | | 381 | 300 | Nákla | dy příštích období - pojištění budovy a odpovědnos |
| 0069500 | Prepaid Licences & Permits | Balance Sheet | Posting | | 381 | 310 | Nákla | dy příštích období-licence a povolení |
| 0070000 | Prepaid Maintenance Contracts | Balance Sheet | Posting | | 381 | 400 | Nákla | dy příštích období - provozní náklady |
| 0070300 | Prepaid Sales & Marketing | Balance Sheet | Posting | | 381 | 500 | Nákla | dy příštích období-Sales& Marketing |
| 0070350 | Prepaid - Property taxes | Balance Sheet | Posting | | 381 | 600 | Nákla | dy přístích období - daň z nemovitosti |
| 0141000 | Financing Costs | Balance Sheet | Posting | | 381 | 700 | Nákla | dy příštích období - náklady na financování |
| 0141100 | Brand | Balance Sheet | Posting | | 381 | 800 | Nákla | dy příštích období-rebranding |
| 0155000 | Pre Opening Cost | Balance Sheet | Posting | | 381 | 900 | Nákla | dy na zprovoznění hotelu |
| 0250010 | GRNI-Stores | Balance Sheet | Posting | | 383 | 100 | Výdaj | e příštích období- stock |
| 0250050 | GRNI Non Stores | Balance Sheet | Posting | | 383 | 200 | Výdaj | e příštích období- non-stock |
| 0249000 | Deferred Income | Balance Sheet | Posting | | 384 | 100 | Výnos | y příštích období |
| 0249100 | Deferred Income Other | Balance Sheet | Posting | | 384 | 200 | Výnos | y příštích období - jiné |
| 0249500 | Deferred Income - Subscription | Balance Sheet | Posting | | 384 | 300 | Výnos | y příštích období |
| 0021000 | Guestledger (Accrued Income) | Balance Sheet | Posting | | 385 | 100 | Příjm | y příštích období - nevyfakturované tržby |
| 0048500 | Accrued Income - other | Balance Sheet | Posting | | 385 | 200 | Příjm | y příštích období - ostatní |

Accrued Revenues (revenues generated in the future periods)

Income (still not created)





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.

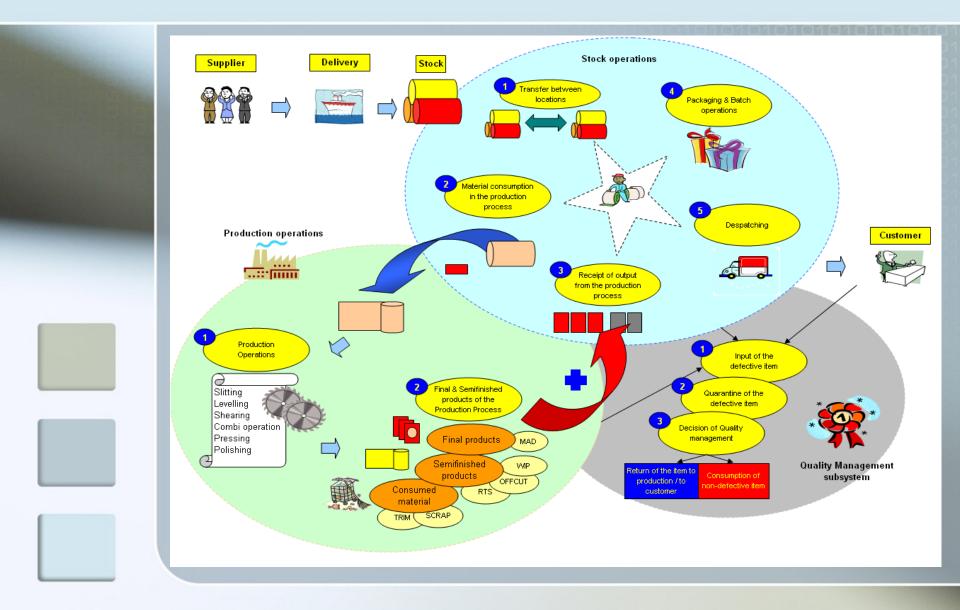
In other words Accrued Costs happens when You receive an Invoice for Services after the Service was provided.

The same can happens also for revenues.

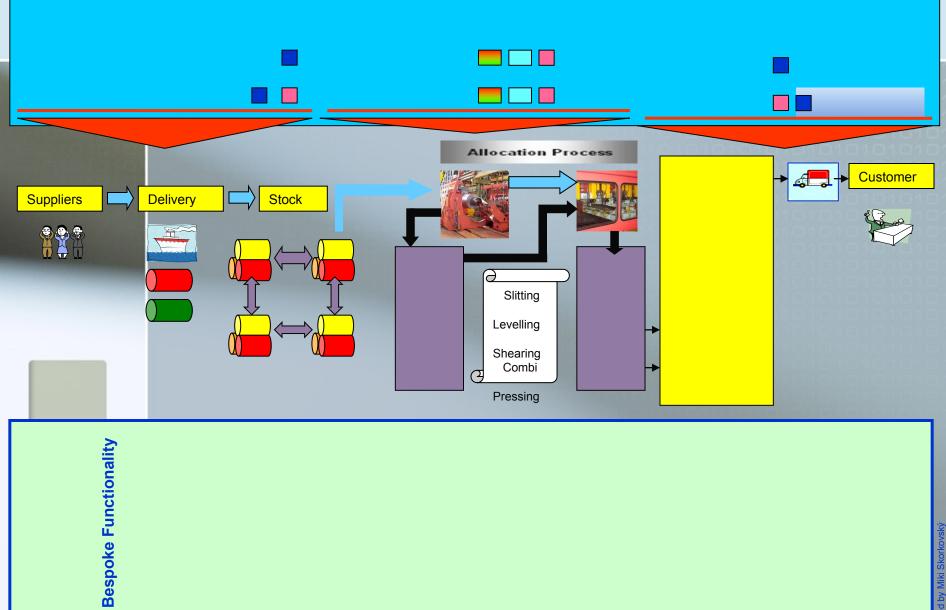
I hope this explanation can be clear enough.

Regards.

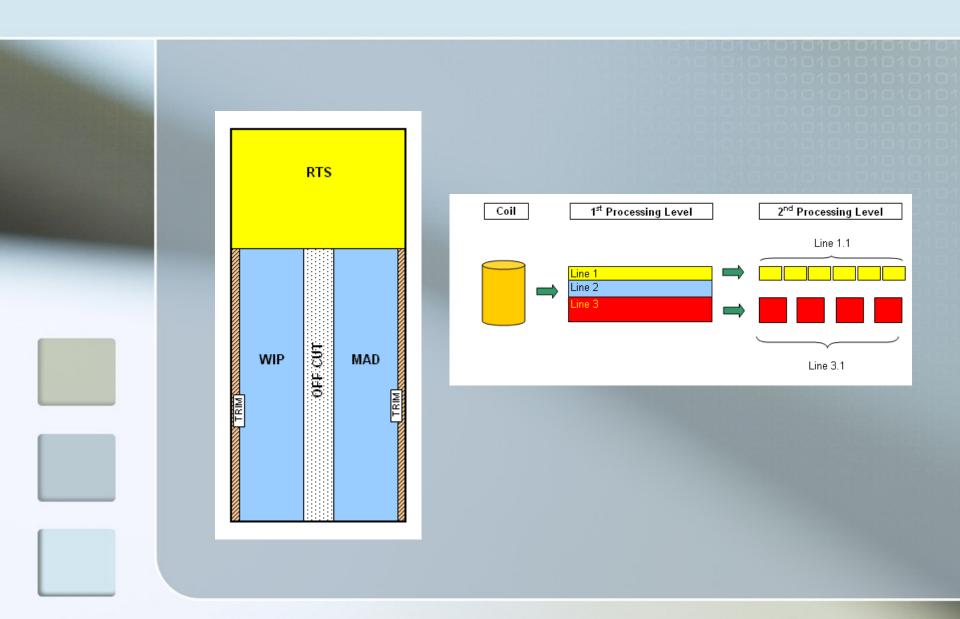
Another possible project –Automotive, Appliances, packaging industry







Slitting and levelling of the steel



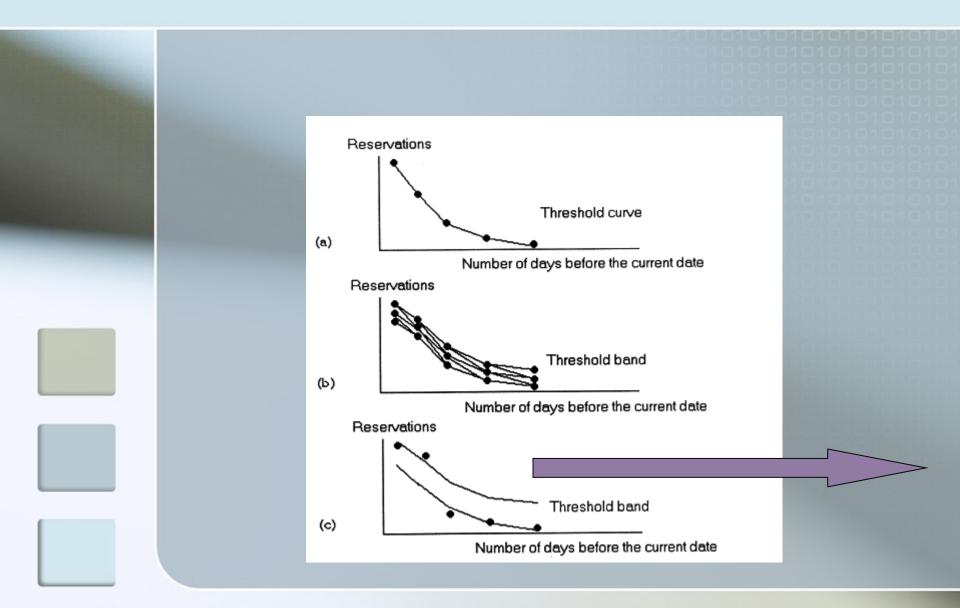
Knowledge of methods, which are necessary for project management and process management

- Theory of Constraint (will be introduced-72 slides)-seminar work!!!!
 - Critical chain methodology
 - Thinking tools
 - Throughput Accounting ->go to wikipedia
- Balanced Scorecard (will be introduced)
- SWOT a Gap Analysis
- MS Office (Word, Power Point 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

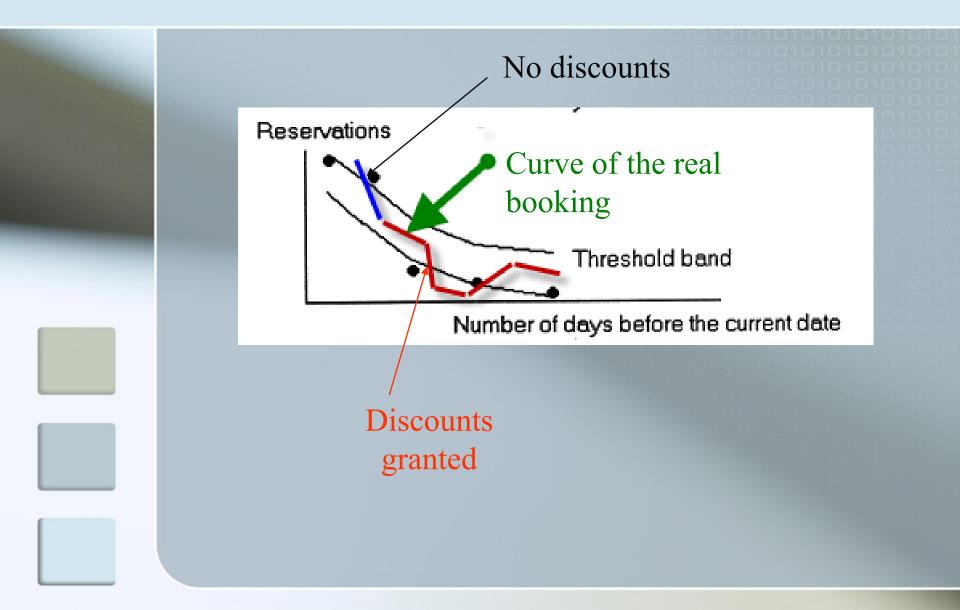
Knowledge of methods, which are necessary for project management and process management

- 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. Thres Hold method— see next slide

Threshold curves (booking)



Threshold curves (booking)



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

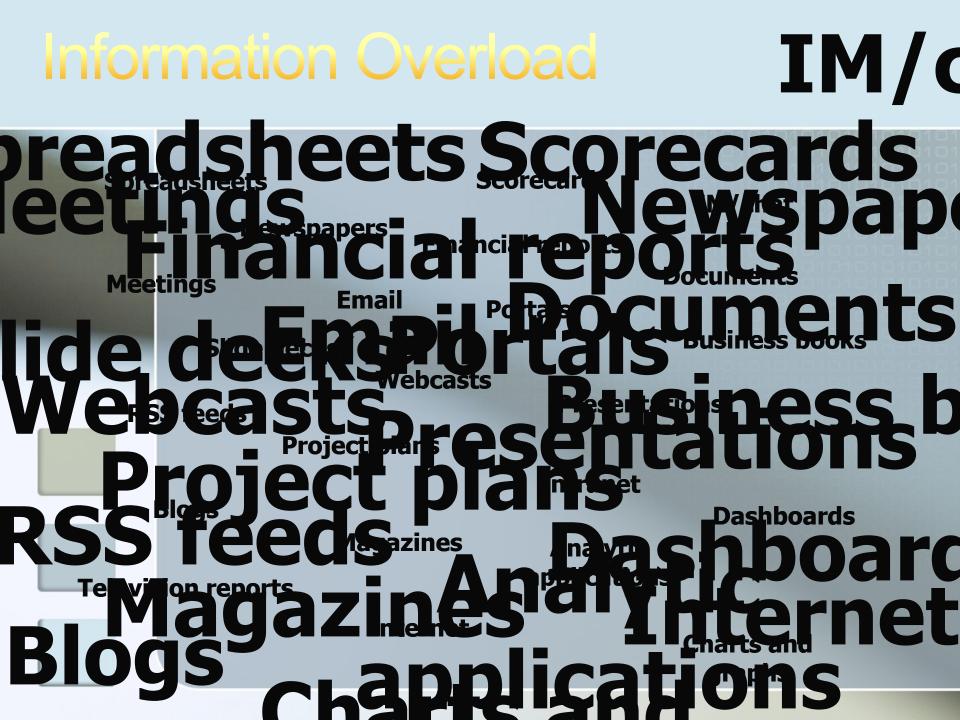
- Legal aspects of contracts
- Cost management
- Foreign languages
- Basic knowledge of IT architecture will be introduced
- Methods used for project management
- Business Analytics

Will be shown later

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

Business Analytics – some reason why to discuss





What Users Need



CEO

"I need to know that the people in my organization have the right goals in place to understand and execute on the strategic initiatives of the company."



VP, Operations

"I need better visibility into my cost of operations so I can target specific cost reduction opportunities that won't have a negative impact."



CFO



"I need better visibility into our pipeline performance so I can focus on deals that help me grow business with my most profitable customers."

"I need to improve our analytics capabilities so we can understand our current business performance and do a better job of planning for the future."



Sales Rep

"I need to have the right demographic information so I can better target my opportunity prospecting."



Customer Support Rep

"I need better access to information to make better decisions on cross-sell and up-sell opportunities."

Source: "Creating the Office of Strategy Management" by Robert Kaplan and David P. Norton, Harvard Business School, April 2005

 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....

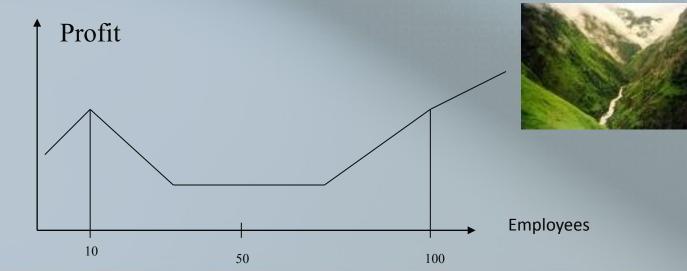






Those guys are responsible for performing all day-to-day functions of their business

- 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"



- 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





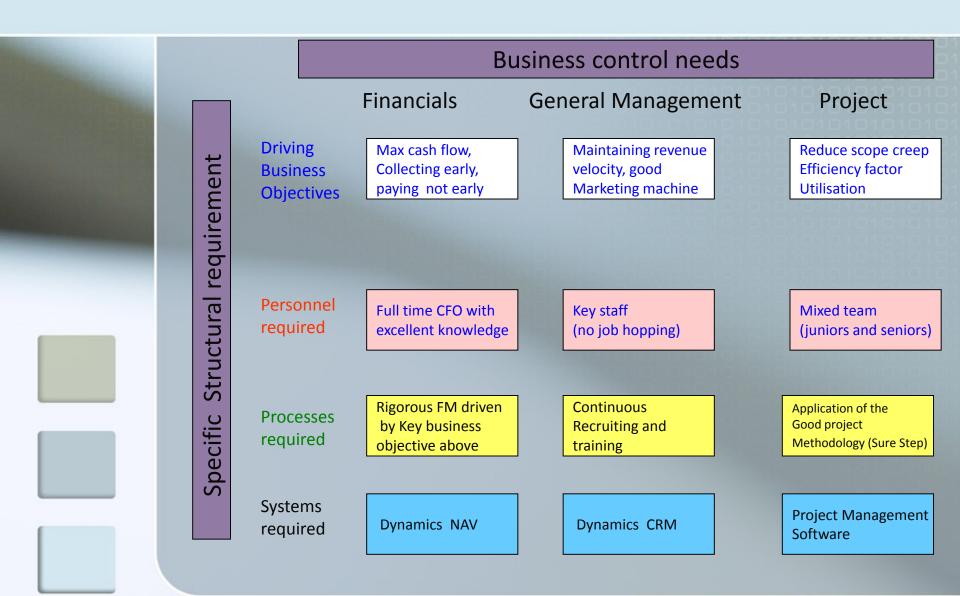


Third key

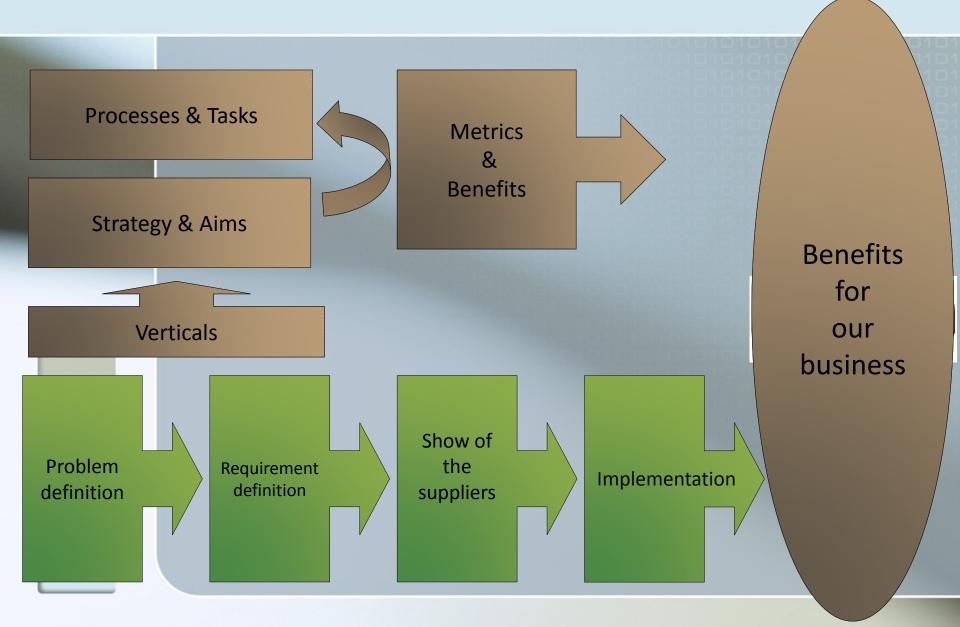
- Financial management control and cash flow is the king
- Invoice quickly and pay consistently (but not early !!!)
- To maintaining Cash- to-Cash cycle as short as possible
- Fourth key
 - Software package handling all aspects of financial customer relationship and project management
- Cash-to-Cash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







Do we know or we are only hoping?





Thanks for Your Attention

Will be placed on IS.MUNI.CZ in the study materials

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