

# CRM conceptual background and analytics

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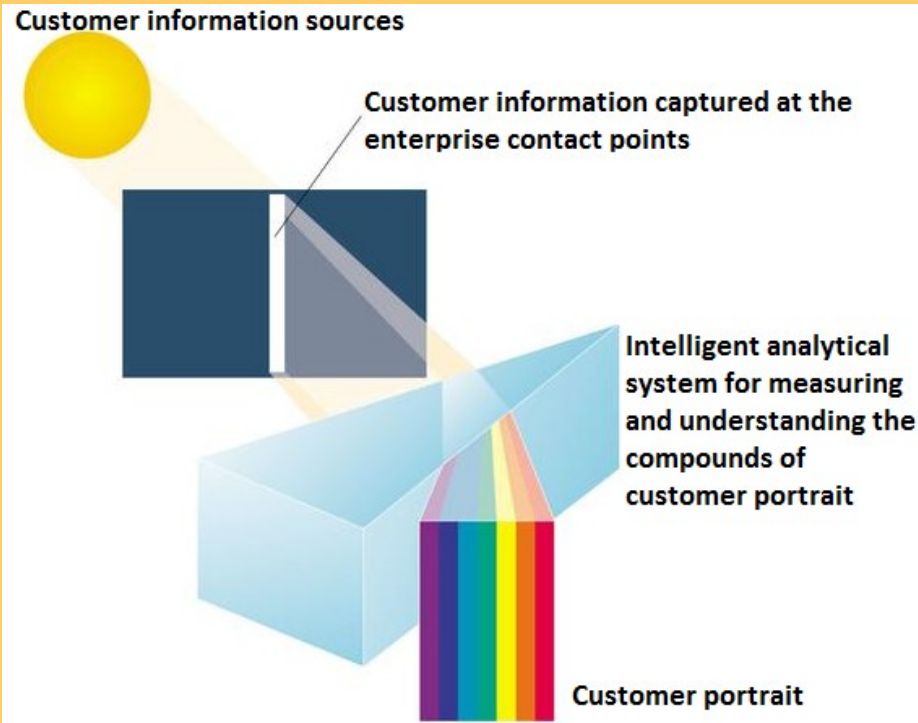
# Customer Relationship Management

Customer relationship management (CRM) is a broadly recognized, widely-implemented strategy for managing and nurturing a company's interactions with clients and sales prospects

The overall goals are:

- to find, attract, and win new clients,
- nurture and retain those the company already has,
- retain former clients back,
- and to reduce the costs of marketing and client service (Pepper, Rodgers, 2004)

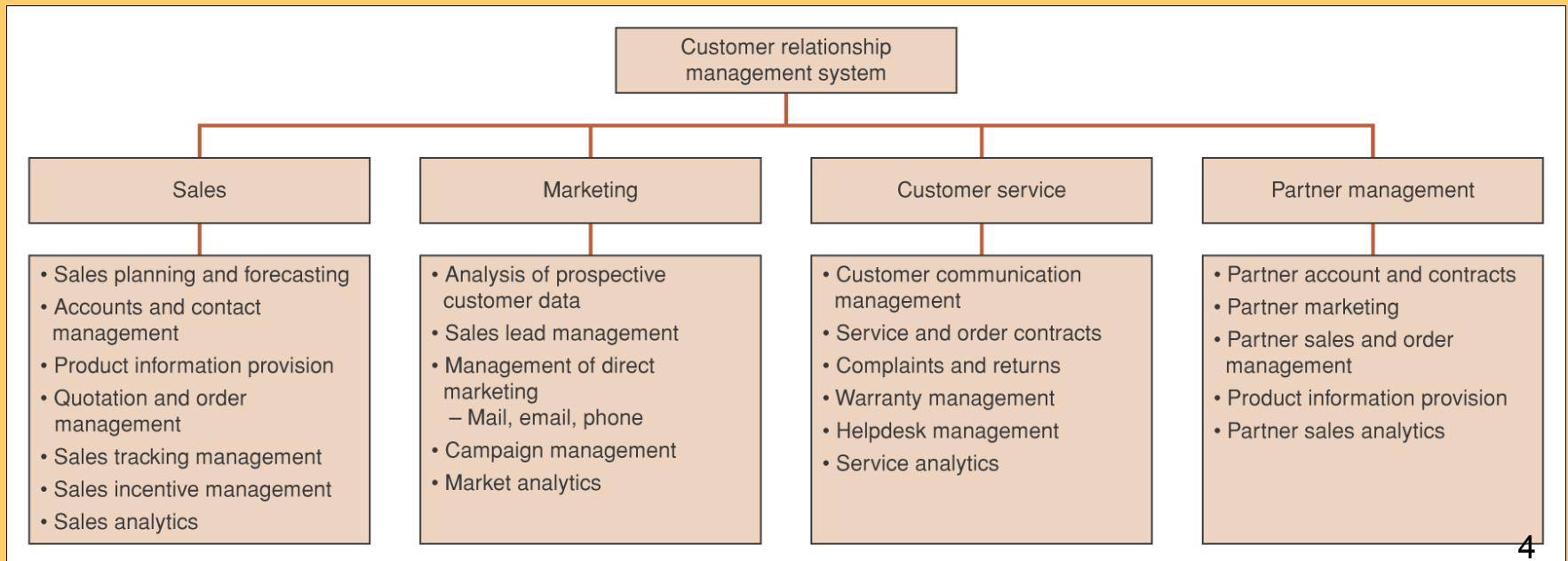
# The spectrogram principle of the customer analysis



The success of the enterprise highly depends on the “prism” as analytical model which can convert “white light” of information to the swath of colours with different brightness: identify compounds of customer portrait by characteristics, their importance and effects to the financial results of the enterprise.

# Components of CRM Systems

- The software producers understand the structure of CRM differently
- You can find CRM, which mean different goals: sales module, communication module, performance of sales personnel, distribution channel analysis, loyalty “point” systems, etc. (what type is Sugar CRM?, MS CRM ?, SAP CRM?)



# Customer Relationship Management (CRM) Systems – general understanding

- Provide information on existing customers, their loyalty and churn
- Identify and target new markets
- Enhance customer's satisfaction
- Manage relationships with partner organizations
- Marketing: cross-selling, upselling, bundling
- Customer service
- Partner relationship management
- Internal marketing (making enterprise attractive for its workers for keeping their knowledge)

# What's hot: Gartner 2012 – did the forecasts come true ?

Table 1. Highest CRM Application Priorities, 2012

Sales	Customer Service	E-Commerce	Marketing
Mobile sales – table/smartphone	Peer-to-peer community	Web storefront	<b>^Digital marketing</b>
<b>^Social CRM sales</b>	<b>^Intelligent agent interface</b>	Search engine optimization (SEO)	Social monitoring and analytics
SaaS sales force automation (SFA)	<b>^Mobile support</b>	<b>^Mobile device storefront</b>	Lead management
Lead management	SaaS customer support system (CSS)	<b>^Social and Facebook commerce (F-commerce)</b>	Loyalty management
Configure, price, quote	Web self-service	Distributed order management	Inbound marketing

# What's hot from Gartner 2012

<b>^Sales content and collaboration</b>	Knowledge management for service resolution	Partner, distributed and field marketing	Predictive analytics
Sales incentive compensation	Feedback management	<b>^Mobile payments</b>	Marketing performance measurement
Forecast and pipeline	<b>^Social sense and respond</b>	Web analytics	<b>^Facebook marketing</b>
Sales training	<b>^Video for customer service</b>	<b>^SaaS and integration as a service (IaaS) for e-commerce</b>	<b>^Mobile marketing apps</b>
<b>^Clienteling</b>	<b>^Voice of the customer</b>	Multichannel inventory	Integrated marketing management
<b>^Voice SFA for sales</b>	Workforce optimization	Product reviews	Campaign management

Cross-CRM technologies: **^master data management (MDM)**, business process management (BPM), **^customer experience management (CEM)**  
**^ = priority**

Source: Gartner (April 2012)

# CRM- is a philosophy of management enterprise resources (4+1 main types).

Traditional parts of enterprise resource capital:

- Financial
- Material
- Human
- Intangible
- **Information**

CRM explores new types of resource capital

- Knowledge & info
- Customer capital, where share of each customer is explored (different approach is market share)



# Customer capital management goals

## Get:

... Profitable customers

## Keep:

... Profitable customers as long as possible  
... Win them back from competitors  
... Convert not-profitable customers to the profitable

## Enhance:

... incentives to get additional products  
.... Positive reference from existing customers to win new  
... Customer service programs

# CRM information needs

CRM goal	Information need	Capability of accounting systems to supply info
Profitable customers	New and old customers Profit per customer	No Profit calculation per unit
Keep profitable customers as long as possible	Communication history	Sales info is available Limited info about reaction to promotions
Win profitable customers back from competitors	Customers of the competitors Who were won back	No
Convert not-profitable customers to the profitable	Expenses per customer Sources for turnover	No
Provide incentives to get additional products	Know individual needs	No
Enhance positive reference	Opinion, referrals, impact	No
Enhance customer service programs	Effectiveness of programs	No

# IDIC model for CRM

*D. Peppers ir M. Rogers (2004)*

## IDIC model

Analytic:

Operational:

Identification

Differentiation

Interaction

Customization

# Application of IDIC model

- Identify customers- explore individual characteristics. Needs variables for identification: tel.no. address, email, psychographic characteristics, preferences, habits
- Differentiate customers- searching for different characteristics which enable segmenting. Definition of similar segments helps to focus attention to best (most profitable) groups, and create scenarios evoking specific behaviors
- Interact with customers- search for tools and technologies for creating perception of the enterprise to its customer in attractive way, get feedback, avoid information distortion due to attitudes (e.g. caused by resistance to spam)
- Customize treatment- maximize profit due to meeting individual needs

# Two tasks for managing CRM

## OPERATIONAL CRM:

How to collect information about relationships

Surveys, registering calls, visual observation, loyalty cards, promotion responses

## ANALYTICAL CRM:

How to evaluate and use information

Evaluation by creating meaningful CRM indicators

Reporting, statistical methods, analytic tools, intellectual computing

# What is indicator?

- Indicator is a common language among managers
- Instead of evaluations “good”, “bad”, the numeric evaluations, rankings, graphical visualizations, etc. could be more effective
- Indicator is a lever which we have to envisage, and use proper impulse of sufficient power to make impact on it.
- Indicator reveals influences which affect enterprise. It is important to notice these influences, to know how they are created, what efforts are needed to make them serve to the enterprise needs.

# Problems of getting right data for analysis

Accounting information is limited, there is need for contact points, where customer information can be recorded (loyalty cards, personalized access points, transaction terminals, call centres, web pages or social networks)

The best descriptive is qualitative data, but it is collected in inconsistent way (surveys), or stated by subjective judgments, or classified by subjectively extracting characteristics of communication

Therefore our challenge is to apply the historical purchase data, utilize information from access points and capture qualitative data consistently

# How to create indicators ?

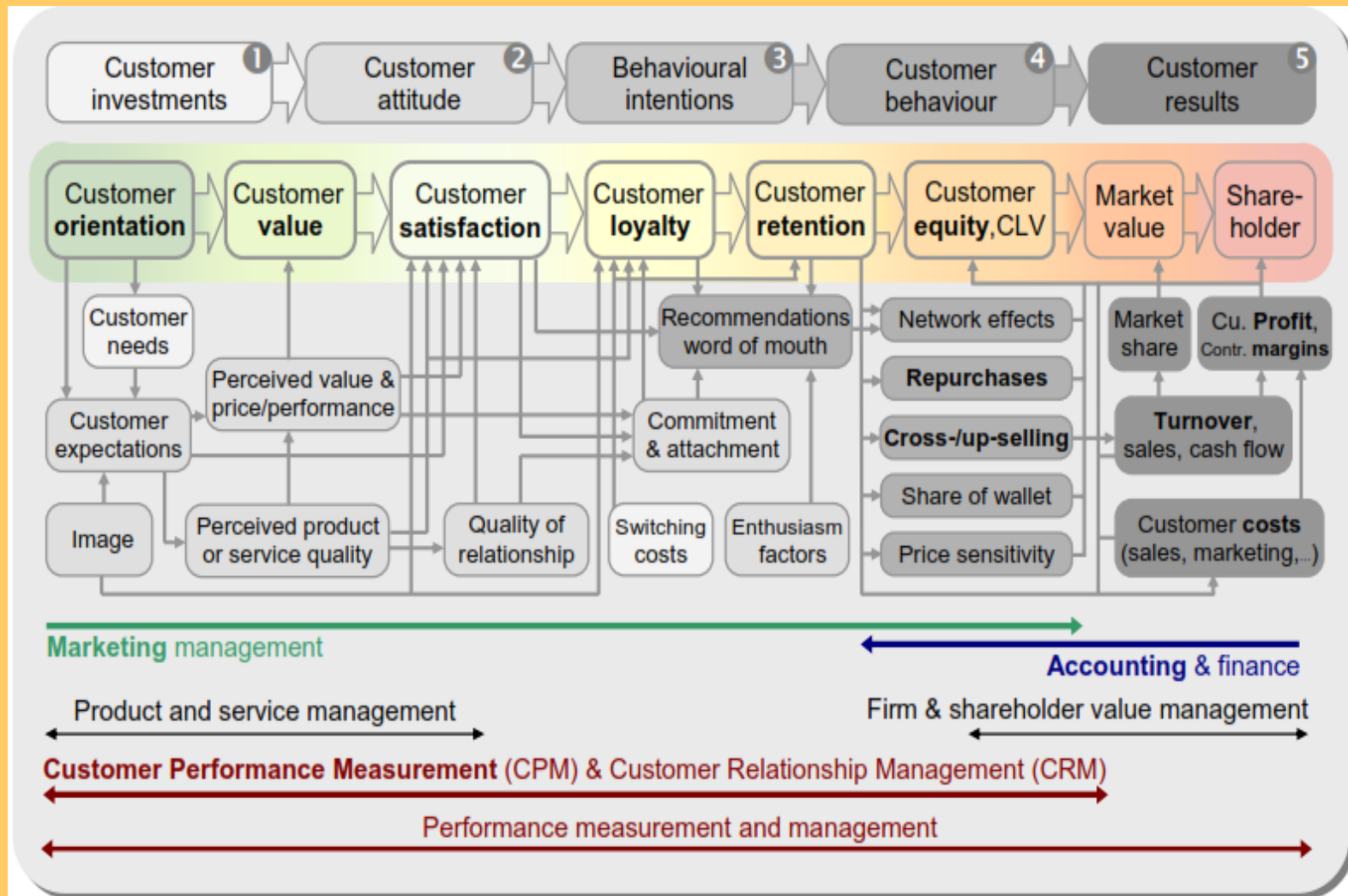
- Traditional commonly understood marketing indicators?
- What is missing? What direction should be followed in order to enhance power of indicators?
- How to understand gap?
- Common rules for creating indicators : absolute (turnover, profit), relational (EBITDA), percental (impact of marketing for “bottom line” in accounting), complex interpretation (RFM), formulas (LTV), ranking (loyalty)
- Analytical report types : summarization, queries, trends, anomalies, extremities.
- Textual, numerical, color, graphical



# Information for evaluation

- CRM evaluation based on accounting information
- Defining loyalty and its relationships to sales
- Using non-financial information
- Balanced scorecards
- Internet technologies based indicators
- Social network analytics

# Gap of the indicators



Source: Zumstein, D.

# How to fill the gaps to final indicator

- Making qualitative indicators. Negative side- hard to transform to measurable
- Creating lead indicators which are going to influence factual results in (lag indicators). Negative side- some relationships between them are missing or misleading
- Proxy indicators try to create intermediate links leading to final values Proxy—Financial—Statistical
- Creating indicators similar to financial philosophy : Return on Customer Investment (ROCI); Return on Relationship (ROR); – similar to ROI (return on investment in finance)
- Longitudinal metrics – involve dynamics
- Refining indicators by learning relationships philosophy

# CRM variable types

- **Simple transactional variables** – purchase value, frequency
- **Derived variables-** CLTV- customer lifetime value
- **Survey-based:** satisfaction, knowledge, preference
- **Event-based:** churn, complaint
- **Expert-evaluation-based:** loyalty
- **Compound variables** – RFM
- **Proxy variables-** compound-weighted-ranking based
- **Models:** Pareto, Whale curve, custom designed models

# Promising variable types

fc

## 1) Profile data

### Address data

- #, Name, address, e-mail, phone, etc.

### Profile data


- *Demographic data* (age, civil & family status, education)
- *Psychographic data* (interests, lifestyle)
- Buying and payment behavior

## 2) Purchase data

- Dates of purchase
- Purchased products
- Purchased volume
- Heavy usage index
- *Frequency*
- *Recency*
- *Monetary*
- $\emptyset$  order value
- Duration of RS


## 3) Customer Performance Indicators (CPIs)

### Customer relationship indicators




- **Customer orientation**
- ➔ Subsection 5.1.5
- *Perceived product/service quality*
- **Customer value**
- ➔ Subsection 5.1.6
- **Customer satisfaction**
- ➔ Subsection 5.1.7
- *Customer attachment/commitment*
- **Customer loyalty**
- ➔ Subsection 5.1.8
- **Customer retention**
- ➔ Subsection 5.1.9
- *Customer Lifetime Cycle*

### Performance indicators for profitability



- *RFM method*
- **Repurchases**
- ➔ Subsection 5.1.10
- **Add-on-selling**
- ➔ Subsection 5.1.11
- **Share of Wallet**
- ➔ Chapter 5.1.12
- *Price sensitivity*
- **Sales or turnover**
- ➔ Subsection 5.1.13
- **Contribution margins**
- ➔ Subsection 5.1.14
- **Customer profits**
- ➔ Subsection 5.1.15
- **Customer equity**
- *or Customer Lifetime Value (CLV)*
- ➔ Subsection 5.1.16

### Customer investment indicators



- *Acquisition costs*
- *Retention costs*
- *Recovery costs*
- *Administration costs*
- *Transaction costs*
- *Communication costs*
- *Service costs*
- *Contact costs*
- *(After) sales costs*
- **Total customer costs**
- *Marketing costs*
- **Return on's:**
  - sales (**ROS**)
  - customer satisfaction - customer (**ROC**)
  - relationship (**ROR**)
  - Marketing (**ROM**)
  - Investment (**ROI**)

## 4) Service data

- General customer requests
- Demands of technical services
- *Number and quality of complaints*
- *Number of returns*

## 5) Contact data

- Date of contact
- *Number, types, channel, intensity, costs of communication*
- Frequency of actions
- Customer adviser

# CRM indicator and metric samples

## **Customer profitability metrics**

- Cross-sell change
- Process and operation cost change
- Credit usage level

## **Change of number of customers and their structure:**

- attrition,
- churn rate,
- Naming groups by character: “vintages”, “cohort”, “VIP”
- satisfaction changes according to survey data

# CRM indicator and metric samples

## **Value of customer**

- Evaluation in monetary terms by assumption that customer is the asset of enterprise
- NPV-net present value
- Potential value (IRR)
- Current and potential value according to survey data
- ROI – return on investment to customer

## **Cycles among purchases:**

- Cycle duration (shorten, lengthen, regularity)
- Buyer trajectory – characteristics accumulated during purchase history

# CRM indicator and metric samples

## **Evaluation of purchase structure:**

- Large purchase buyers
- Petit purchase buyers
- Frequent purchase return makers

## **Grouping, segmenting metrics:**

- Decile analysis (divide by 10% segments)
- Pareto principle
- Whale curve
- Share of customer (e.g. VISA uses share of wallet)
- Share of personal consumption, expenditures
- Customer satisfaction



# CRM indicator and metric samples

## **Life cycle value**

- Most valued customer segment- MVC
- Relationship value
- Relationship duration
- Migration

## **Loyalty metrics**

- Specific behavior: “bought in past and will buy in future”
- Attitude, brand preference
- Tenure functions
- Ranking according loyalty strength

# Loyalty categories –their variety

- Loyalty pyramid expresses levels of loyalties
- **No loyalty**– first level of loyalty when it is simply absent  
The user freely searches for product by changing suppliers, not bonding to them. If he bought during promotion period, the sales of this loyalty group return back to previous level
- **False loyalty:** customer does not feel any difference among products of suppliers, but he has no need to change them –behavior by inertia
- **Hidden loyalty-** customer has preference to some product or supplier but not always keeps buying it
- **Real loyalty-** the customer has clear preference and uses it even when there exists sufficient choice

# Loyalty categories –their variety

## Customer Loyalty - Four Kinds

- Forced - Monopoly –  
Ends With Choice
- Habit - Purchase Without Thought
- Bought - Bribe Offered For Not  
Top Of Mind Choice
- Emotional - Customers Return  
Indefinitely Through  
Emotional Engagement

Engaged customers spend more, generate higher margins and are passionate influencers.

# Compound variables – e.g. RFM

**Variable R** (Recency) show the number of days since the last visit till the date set for analysis

**Variable F** (Frequency) indicator is equal to the number of visits of the customer.

**The M** (Monetary value) is equal to the total value of purchases during all the history of communication.

- CRM task lays in defining **RFM combination matrix** for decisions. E.g. how we treat recent customer who comes often, pays much ? How do we treat if he comes rarely? Do we change opinion if he comes only during holiday time? If we waited for his holidays and he missed – did he chose competitor?

# “Whale curve“ analytic visualization

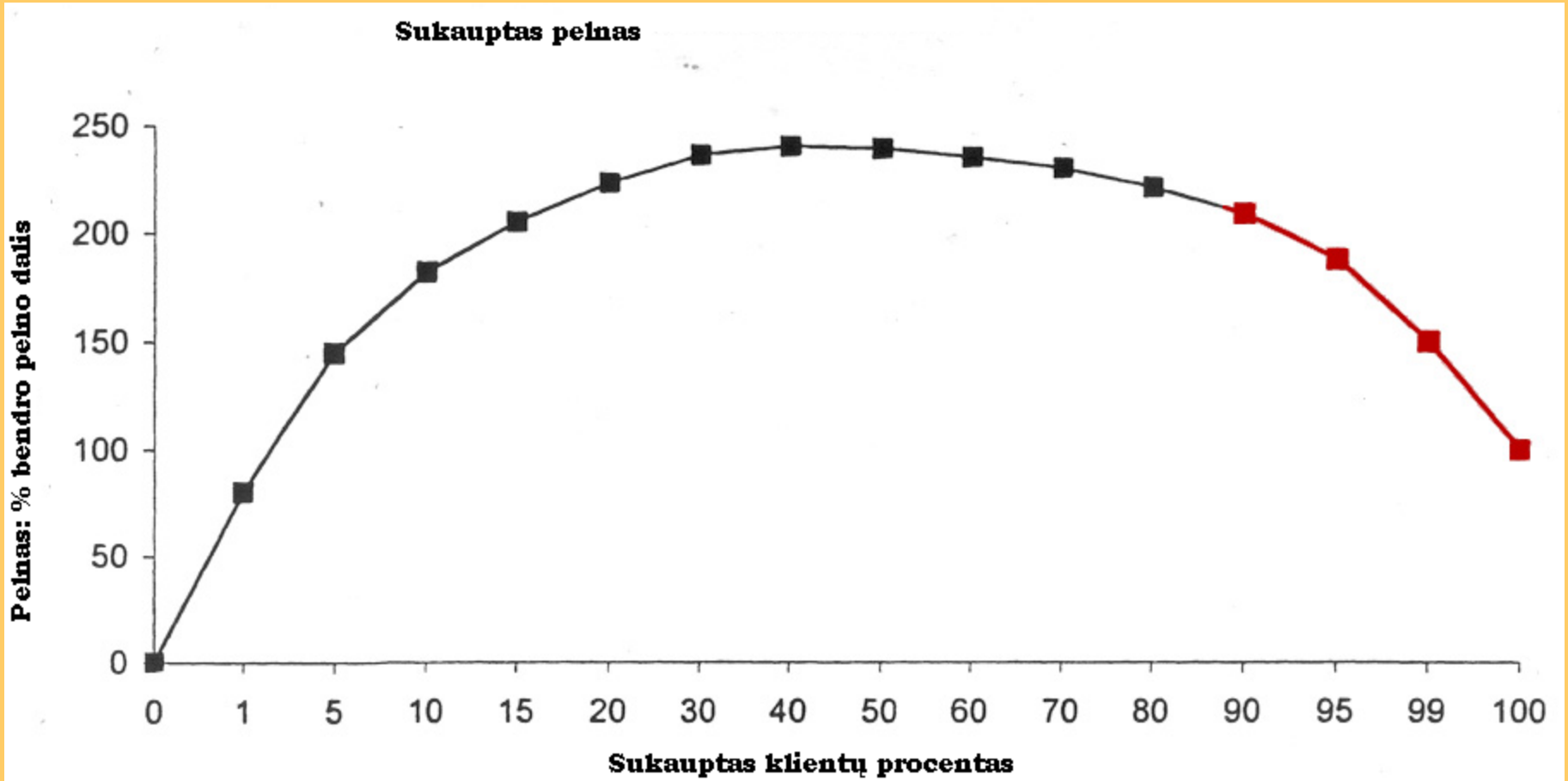
Customers are sorted by descending order of their turnover (or profit) values, in order to compute their cumulative percent values and to plot to Y axis.

In X axis you plot the cumulative percent of the number of customers (e.g. if the enterprise has 10 customers, each of them makes 10% of the enterprise customers, second line will show cumulative of 2 customers which make 20 cumulative percent, etc.

The Whale curve shows what percent of total number of customers in X axis are able to generate their part of the total enterprise turnover (profit) (plotted in % in Y axis).

The final point of curve means total turnover by all customers

“Whale curve” of profit, red line denotes loss



# Using “Whale curve”

Define visually the areas with same growth, split customers to segments accordingly

- Ask questions by analyzing behaviors of segments: what we can do in order to convert “second best” customers to the “best”
- How we can convert customers who bring “loss” to “profitable
- Do we have different rules and personnel for segments?

We can split cumulative curve to “deciles” as well

Pareto “law” is visible in “Whale curve” at 20% in X axis

# CRM for changing customer indicators

- Cross sell- offering additional products, which are compatible to those already bought
- Up-sell- improvements of the product already bought
- Bundling- complex product /service/subscription
- “Churn rate” measurement. No precise methods to define. The goal is to elaborate indicators which could make early prediction of churn
- Mass customization- exploring customer choices, segmenting them and offering as most popular of them as standardized solutions for best-fit segments (improves costing, reduces waste and stock)
- Using strategic games for capturing rules of behavior (e.g. putting advertisements to Second life game)

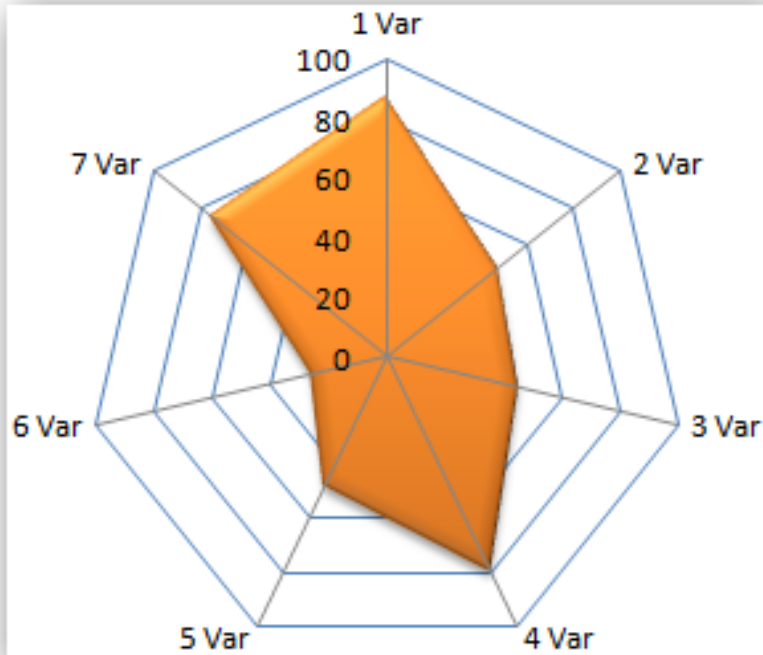


# Proxy – creating cause-effect linked indicators

Indicator	Measure	Weight %.
Average income	Average of present and forecasted income	20
Change of income	Annual change	25
Relationship features	Duration of contract	15
	Tenure of history	
Technologic involvement	System integration	20
	Reporting system	
	Tele-Web	
	Email	
Partnership value	Contact level	10
	Referral	
	Future value	

Top 5 customers	Ranking by „proxy“	Ranking by monetary value	Rank difference
A	1	1	0
B	2	22	+20
C	3	62	+59
D	4	4	0
E	5	3	-2

# Customer portrait



## Analytical aspects:

1 The percentage difference of each characteristics of the customer compared to the best value existing in the customer base of the enterprise.

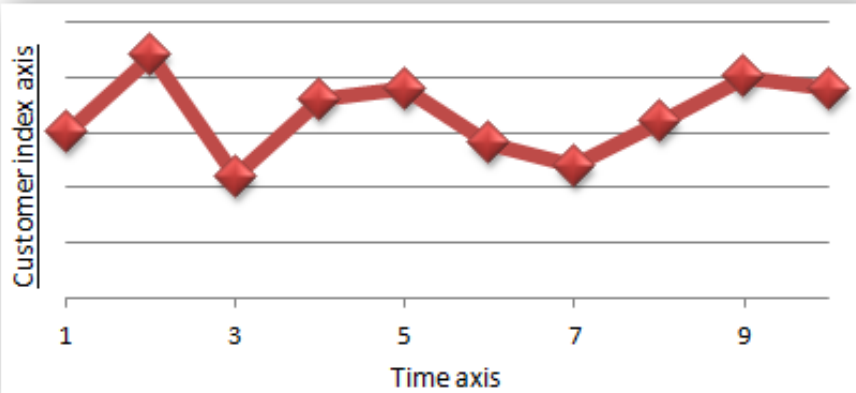
2 customer portrait can be expressed as the area plot of the radar chart.

Bigger normalized percentage values of each variable of the customer portrait form larger area plot, which can show, that the particular customer falls among the best customers of the enterprise.

3 possibility of tracking each customer over time by dynamics of each variable and the compound index as well.

*Source:Kriksciuniene et al 2012*

# Customer index



Customer portrait index is computed as a mean value of all normalized variables included to the customer portrait

If we assume that each variable has different importance we include including weighting of the variables

*Source:Kriksciuniene et al 2012*

# Web-page based indicators

<b>Indicator</b>	<b>Title</b>	<b>Meaning</b>
<b>CPM</b>	<i>Cost per thousand</i>	Thousand shows of banner
<b>CPS</b>	<i>Cost per sale</i>	Cost of one web transaction
<b>CPV</b>	<i>Cost per visitor</i>	Price for one visitor who made click
<b>CTR</b>	<i>Click/through ratio</i>	Ratio between showing and clicking
	<i>Traffic</i>	Number of visitors per time period
	<i>Site reach</i>	Number of visitors per time period
	<i>Site frequency</i>	Number of returning visitors per time period
	<i>Burn out of a banner</i>	Fall of response to banner when it is shown to the defined visitor segment
	<i>Ad views (also impressions)</i>	Number of reaches of banner
	<i>Banner click</i>	Number of reaches of banner
	<i>Hit</i>	Data request for download 1 „hit“- 1 request .“Qualified hit“- successfully sent
	<i>Visits</i>	Visit of one customer for series of activities. Rules how to recognize same visitor as new (time limit).

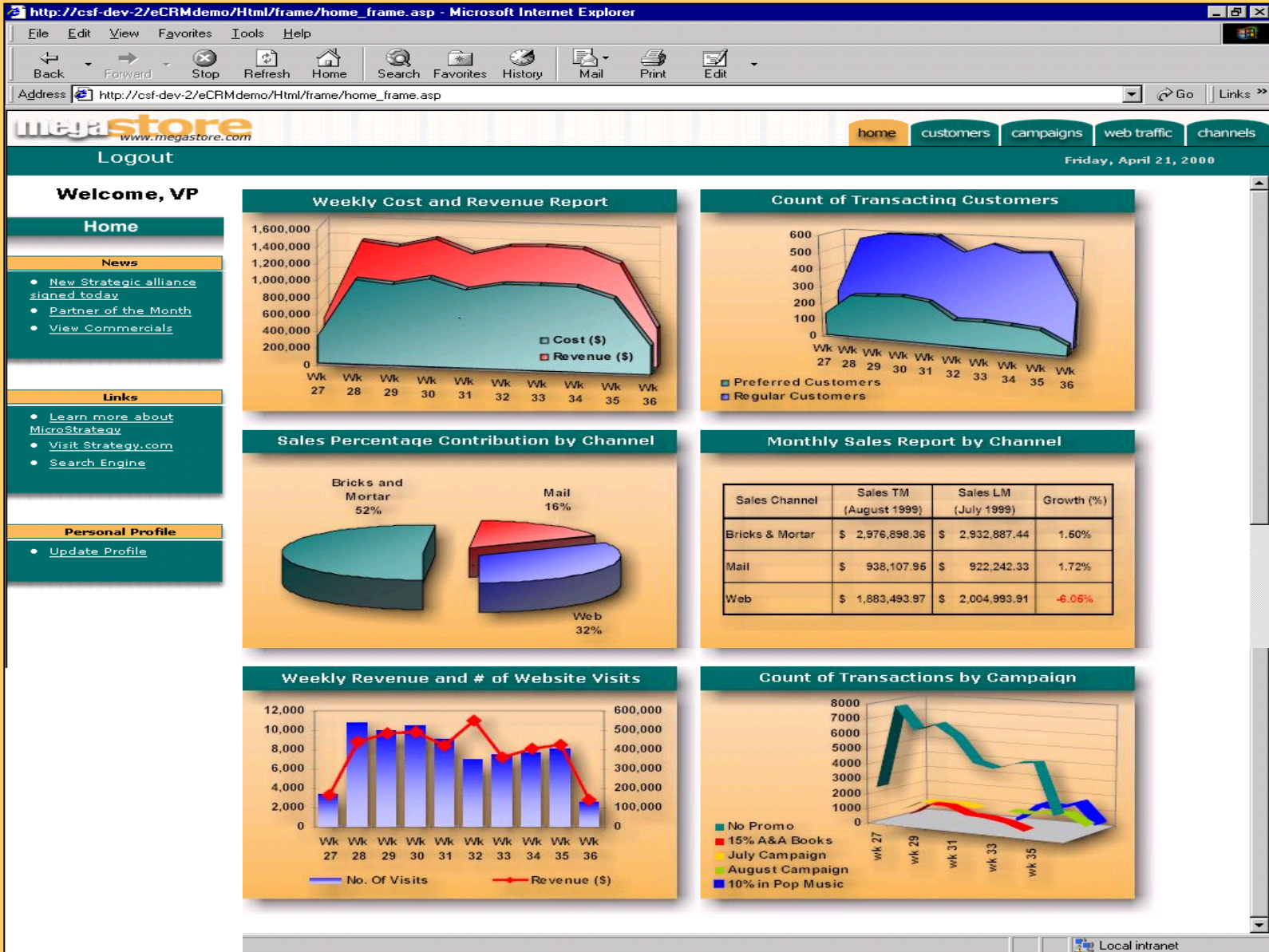
# Application of computerized solutions for CRM

- [www.sugarCRM.com](http://www.sugarCRM.com) –registers activities related to customers (contacts, commercial offers, negotiations, sales). Analytic tools. System is cloud based, customized
- [www.microstrategy.com](http://www.microstrategy.com) system for intelligent analysis: aggregation of data, drill-down principle slice-and dice
- Campaign management- dynamic workflow based solution by microstrategy – provides wizard based, responsibility- based process management analytic support

# CRM campaign research (Microstrategy)

1. Sales situation is evaluated
2. Loyalty level is evaluated
3. Problem is explored in detail (see the following example of wrongly selected promotion delivery channels (pre-campaign analysis))
4. Campaign is planned, the target group is selected by analytics
5. Post – campaign analysis

# Example :microstrategy campaign analysis workflow

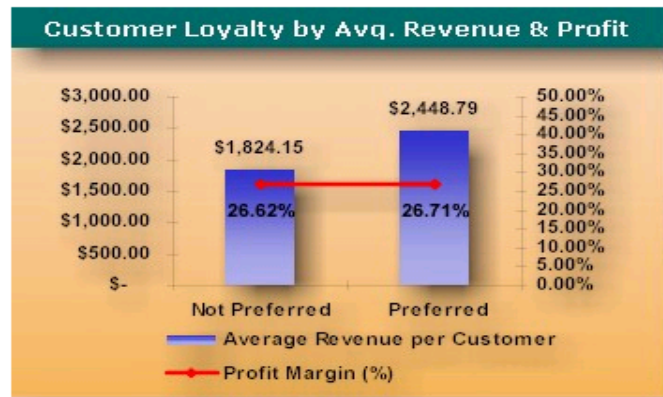
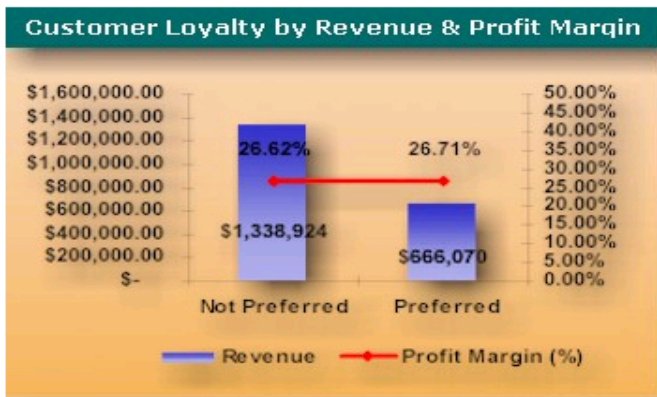


- eCustomer**
- Acquisition
  - Loyalty **Guide**
    - Documents
    - Subscriptions
  - Profitability
  - Segmentation

### Customer Loyalty - Step 2 of 3

1 2 3 **Subscribe**

The profit margin for both preferred and non-preferred customers is essentially the same. Because of their numbers, non-preferred customers are responsible for the majority of revenue. On a per customer basis, though, preferred customers are responsible for more revenue. This suggests that the loyalty program could be more effective if more customers could be transformed into preferred customers with increased levels of transactions, sales and revenue.



#### Customer Loyalty and Profitability

Preferred Customer	Profit Margin (%)	# of Customers	Average Revenue per Customer	Revenue
No	26.62%	734	\$ 1,824.15	\$ 1,338,924.09
Yes	26.71%	272	\$ 2,448.79	\$ 666,069.82



**eTraffic**

- Web Advertising Guide
  - Documents**
  - Subscriptions
- Web Traffic Analysis
- Web Site Performance

Report: Promo and Campaign Analysis

Promotion Category	Promotion/Campaign	Referring Domain	Measures Campaign Cost (All)	Click Through (%)	Sales (\$)	ROI (Campaign)
ADVERTISING	MicroStore for Everybody (August)	http://www.altavista.com	8,415	0.78%	1,565	-95.22%
		http://www.goto.com		1.54%	93,674	197.85%
		http://www.lycos.com		3.12%	47,414	53.11%
		http://www.altavista.com				-90.40%
		http://www.eurosee.com				-100.00%
		http://www.retailer.com				

- Print
- Open in Excel
- Drill
  - Drill Down
  - Drill Up
  - Drill Within
    - Promotion End Date
    - Promotion Start Date
    - Ad Banner
    - Search Keywords
  - Drill Across
- Outline Mode
- Totals
- Details
- Restore
- Referring Domain Properties...
- AutoFormat...
- About MicroStrategy Grid

- eCampaign**
- Pre\_Campaign Guide
    - Documents
    - Subscriptions
  - Current\_Campaign
  - Post\_Campaign

### Campaign Design - Step 2 of 4

1 2 3 4 **Subscribe**

Market Basket Analysis can further aid in determining which products or product groups to offer as part of a special promotion. This type of report identifies all products that sell with a selected product (the study product). It also identifies how frequently each item was sold with the study product. By determining which products sell well together, it is easier to select items to include in a promotional campaign.

Report: Market Basket Analysis

Measures		Attachment Rate (%)
Study Product Group	Product Group	
Pop	Art & Architecture	
	Business	
	Literature	
	Miscellaneous	
	Science & Technology	
	Sports & Health	
	Audio Equipment	
	Cameras	
	Computers	
	Miscellaneous	
	TV's	
	Video Equipment	
	Action	32%
	Comedy	22%
	Drama	16%
	Horror	20%

- Print
- Open in Excel
- Outline Mode
- Totals
- Sort**
  - Ascending
  - Descending**
- Details
- Scroll Row Headings
- Restore
- Attachment Rate (%) Properties...
- AutoFormat...
- About MicroStrategy Grid

http://csf-dev-2/eCRMdemo/Html/frame/home\_frame.asp - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit

Address http://csf-dev-2/eCRMdemo/Html/frame/home\_frame.asp

megastore  
www.megastore.com

home customers campaigns web traffic channels

Logout Friday, April 21, 2000

- eCampaign**
- Pre\_Campaign
    - Guide
    - Documents
    - Subscriptions
  - Current\_Campaign
  - Post\_Campaign

**Campaign Design - Step 3 of 4**



Next it is useful to identify the segment of the customer group that is most likely to take advantage of a particular promotion. Customer segmentation is critical for properly targeting a campaign. In this scenario, customers are targeted based on age group and income range. Next, a mailing list is generated that includes only those customers most likely to respond to the promotion under consideration.

Reports Templates Filters History Grid Graph New Save Refresh Reprint Alerts Options Help

Profit by Customer Age Range

Profit (\$)

Legend:

- Andem, Imoh
- Anderberg, Duane
- Andersen, David C
- Anderson, Holly
- Brabant, Robert

Embedded: ^ Drill0000  
Age Range: + 21-30 years  
Embedded: ^ Drill0001  
Income Range: + \$30,001-

- eCampaign**
- Pre\_Campaign
    - Guide
    - Documents
    - Subscriptions
  - Current\_Campaign
  - Post\_Campaign

**Campaign Design - Step 3 of 4**



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Reports Templates Filters History Grid Graph New Save Refresh Reprint Alerts Options Help

Report: Profit by Customer Age Range (graph)

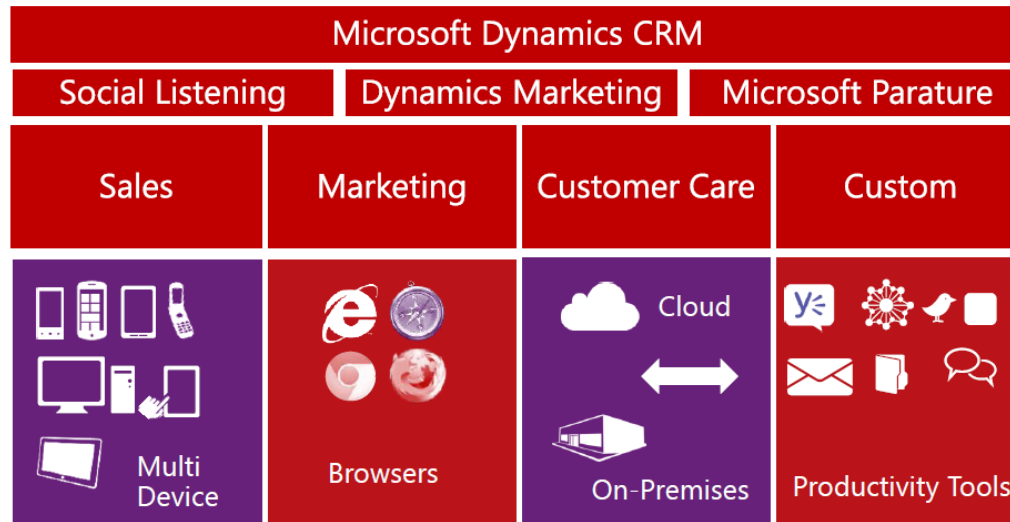
Customer	Profit (\$)
Andem, Imoh	2,822
Anderberg, Duane	1,666
Anderson, David C	2,489
Anderson, Holly	1,268
Brabant, Robert	2,728
Bradford, Fredia M	1,183
Do, Long T	1,294
Dobson, Lance F	3,303
Donald, Ralph W	2,348
Ernst, Gregg W	1,582
Ernst, John A	386
Giacobbe, Scott	2,559
Gibiets, Nick	1,416
Idichandy, Alex	1,035

Embedded: ^ Drill0000  
Age Range: + 21-30 years < 2 >  
Embedded: ^ Drill0001  
Income Range: + \$30,001-\$45,000 < 3 >

# Specialized CRM systems and integrated solutions

- SAP
- Oracle
- Baan
- Microstrategy
- Microsoft CRM
- Microsoft NAV
- Microsoft Ax Dyn
- SAS
- Remedy
- Goldmine

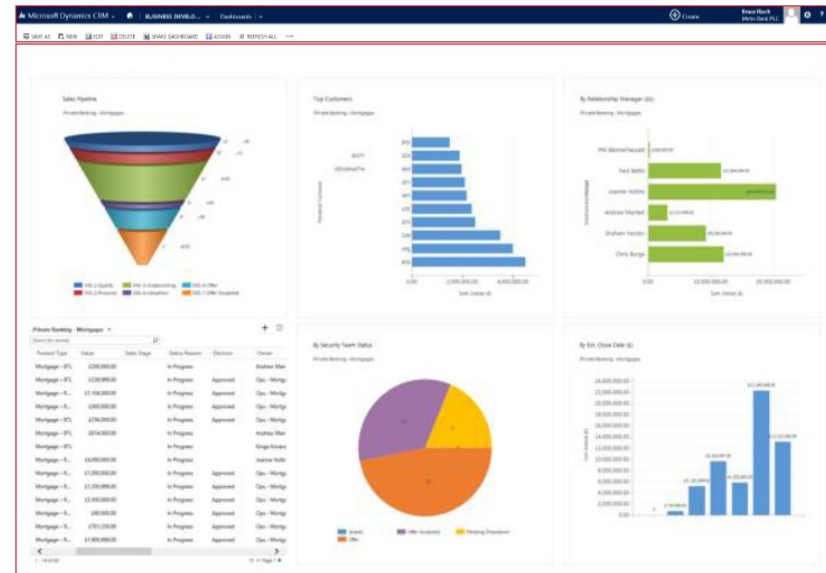
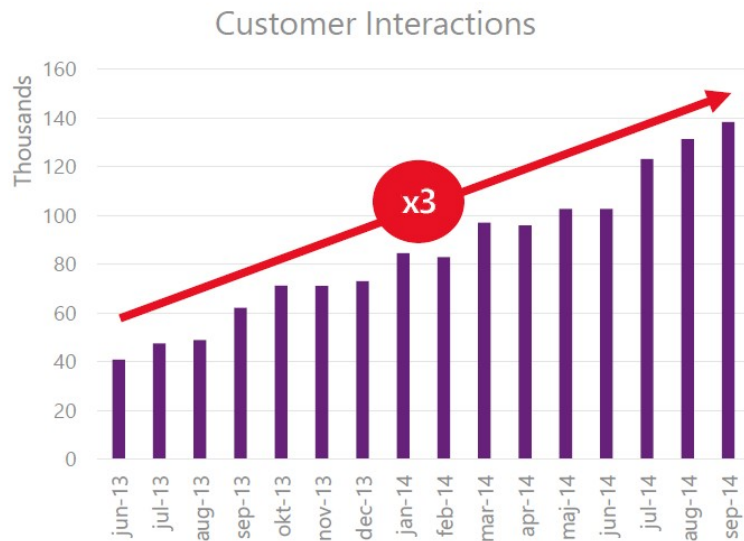
# Microsoft CRM



Fleet Management	Resource Management	Product Management	Licensing Management	Supplier Management	Asset Management	Employee Management	Program Management	Constituent Management
Partnership Management	Contract Management	Lifecycle Management	Task / Activity Management	Legislation Management	Property Management	Recruit Management	Project Management	Grant Management

# MS CRM

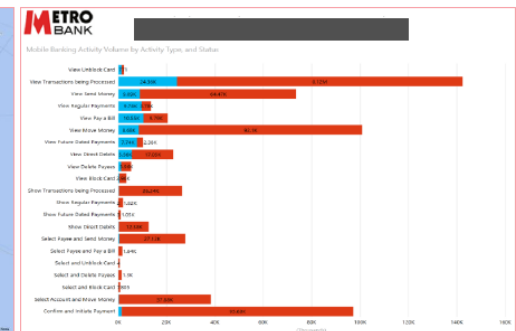
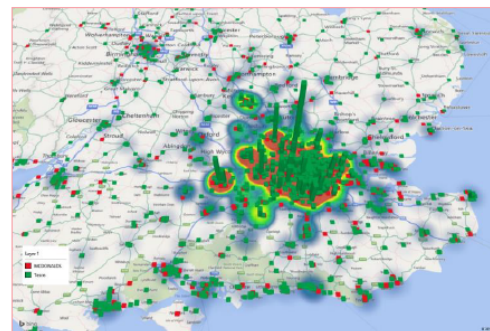
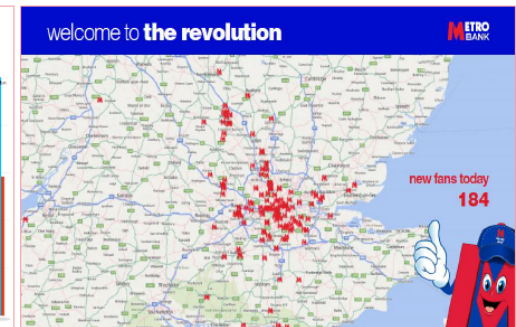
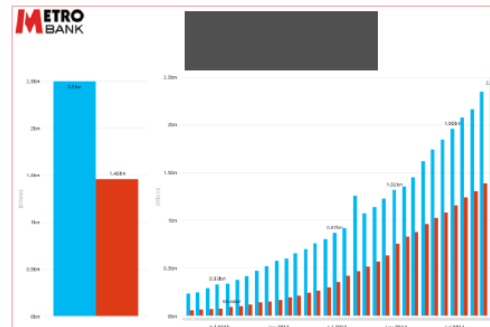
Surface the right information and the right time



# MS CRM

## Data Visualisation

- Business Performance
- Operational SLAs
- Customer behavior
- Self service capability
- All in one place



# Microsoft AX Dynamics- marketing IS embedded

## Microsoft Dynamics AX | At-a-Glance

Retail | Manufacturing | Distribution | Services Industries | Public Sector

### Retail

Point of Sale (POS)  
Centralized store management  
Omni-channel management  
Order management | payment processing  
Merchandizing and catalog management

New

### Manufacturing

Lean, process and discrete manufacturing  
Product configuration  
Shop floor management

### Sales, service & marketing

Sales force and marketing automation  
Lead and opportunity management  
Sales and case management  
Service management  
Microsoft Dynamics CRM integration

New

### Procurement and sourcing

Direct and indirect procurement  
Purchase requisitions  
Supplier relationship management  
Vendor self-service portal

New

### Supply chain management

Inventory management  
Multisite warehouse management  
Transportation management  
Order promising  
Quality management

New

### Project accounting

Project accounting and invoicing  
Grants management  
Project cost control  
Work breakdown structure  
Interoperability with Microsoft Project

### Financial management

General Ledger  
Accounts receivables and payables  
Commitment Accounting  
Cash and bank management  
Shared services and consolidation  
Budget planning and control  
Compliance management

### Business intelligence

Standard and analytical reports with Microsoft SQL Server Reporting Services  
Role Tailored, pre-defined data cubes  
Dashboard views with KPIs  
Self-service reporting

### Human capital management

Core Human Resource Management  
Talent management  
Workforce management  
Travel and expense



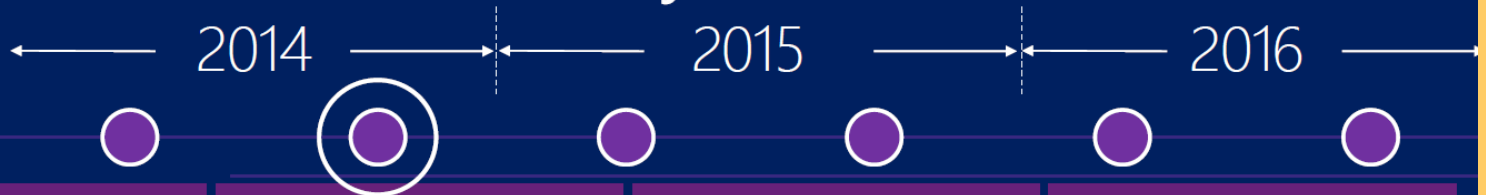
# ERP in cloud (MS offer)

## Microsoft Cloud for Business



# Industry trends for ERP (MS case)

## Update to Microsoft Dynamics AX 2012 R3



### Retail:

- MPOS: Windows tablets and Phones, w UX enhancements
- Off-line and Caching;
- HW station / peripherals & shared shifts
- Payments; set-up & monitoring; e-Commerce;
- Enhanced Retail essentials

### Supply Chain Management:

- Enhanced Warehouse Management capabilities [product variants in the warehouse, partial and batch reservations
- Automatic order consolidation
- Optimization of the production planning

### Azure IaaS:

- Simplified deployment: dev/test, production, and disaster recovery scenarios

### Microsoft Platform Support:

- VS 2013
- Office 2013 SP1
- Sharepoint 2013 SP1
- .NET 4.5.2

- Methodology Automation including SureStep
- ~800 documented business processes in BPM
- Simplify copy of system configurations between legal entities
- Frequent updates of rules in CAT, System Diagnostics, and upgrade analysis
- Cloud-powered support; enhanced support experience searching issues, support incidents, spin up a copy of your installation in the Microsoft datacenters

- Business Analyzer update Windows Tablets, iOS and Android
- Expense and Time iOS/Android based phone apps to support localization/globalization in the upcoming update.
- Windows Phone 8 expense and time app to integrate paystub [US only] integration capabilities.

# MS key points for marketing applications

Marketing today starts at creating amazing brand experiences. This starts with the customer journey. Marketers have to deliver an engaging customer experience that is consistent, personalized and relevant across all channels. At the same time, marketers have to show impact on the business. They have to have an understanding how they contribute to revenue and pipeline, and they have to be able to provide detailed analytics of that contribution.

## **TALKING POINTS:**

- The most progressive companies focus on the customer journey AND embed analytics in their day-to-day operations to understand where and how marketing investments pay off
- They plan and track all marketing assets and marketing programs and use customer insights to continuously improve their programs and to collaborate with sales.
- Marketing is a data-driven science
- Marketing is about using data to target audiences and create value. It's about adding business value

# MS key points for marketing applications

## KEY TAKEAWAY

What does that mean? It means ENGAGING CUSTOMERS in a consistent way across channels to create amazing customer experiences. It means aligning marketing and sales to BUILD a better PIPELINE. And it means tracking your Marketing ROI to DEMONSTRATE IMPACT.

## TALKING POINTS

- *You need to align the brand experience with the customer experience, and align your team around a single message.*
- *You need to engage with customers, in the way that they want, at the time they want, with the content they need in order to drive conversion and revenue.*
- *You need to be able to track your investments across channels and show your impact.*

## METRICS

Just to highlight a few metrics, it means an:

- Increase qualified leads
- Increase conversion rates
- Decrease time-to-market
- Prove ROMI
- We all know marketers aren't paid to plan – they're paid to execute. With Dynamics Marketing, the plan *is* the campaign, allowing marketers to get all of the benefits of using a planning solution without wasting any time in the planning process. That means you can spend more time on the work that you love, and less time project managing.

# MS newest modules for marketing



# Marketing resource management

## Marketing calendar

Align teams & plan around an integrated calendar for increased transparency & collaboration

## Budgeting

Plan & manage marketing budget & spend across channels

## Marketing workflow

Integrate extended marketing teams with automated processes & approvals

## Digital asset management

Centrally manage digital assets with a powerful repository tied to campaigns & calendar



# Multi-channel campaigns

## Campaign design

Easily manage campaigns with drag & drop design across email, digital, social & traditional channels

## Personalized engagement

Deliver one-to-one engagement with segmentation & targeting based on behavior & demographics

## Email marketing

Easily design, test & launch contextual, personalized email marketing campaigns

## A/B testing

Test marketing messaging & offers to optimize campaign performance



# Lead management

## Lead scoring

Determine sales-ready leads with flexible scoring based on behavior, demographics & time

## Nurture campaigns

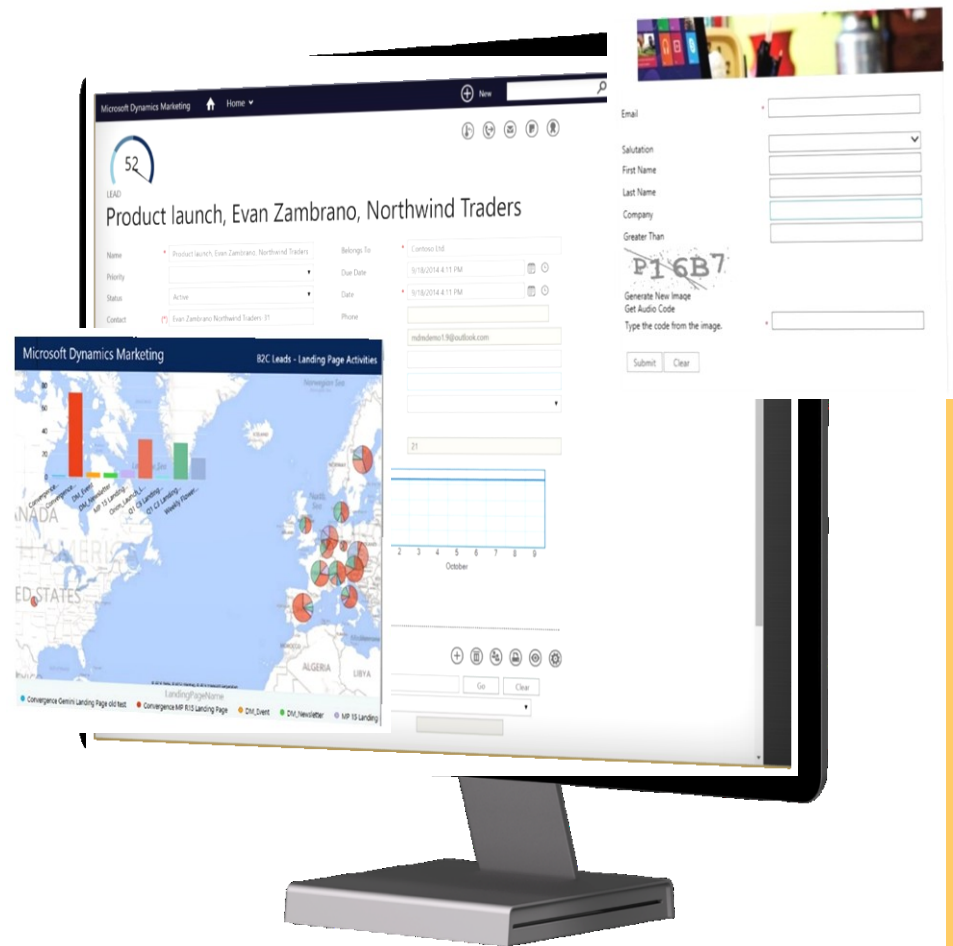
Foster prospect interest with multi-stage, trigger based nurture campaigns

## Multiple scoring models

Accommodate different product & customer types with multiple lead scoring models

## Lead imports

Enable leads from multiple sources with APIs for import from external lists





# Sales collaboration

## Marketing visibility

Empower sales teams with visibility into marketing calendar & campaigns

## Outside-in view

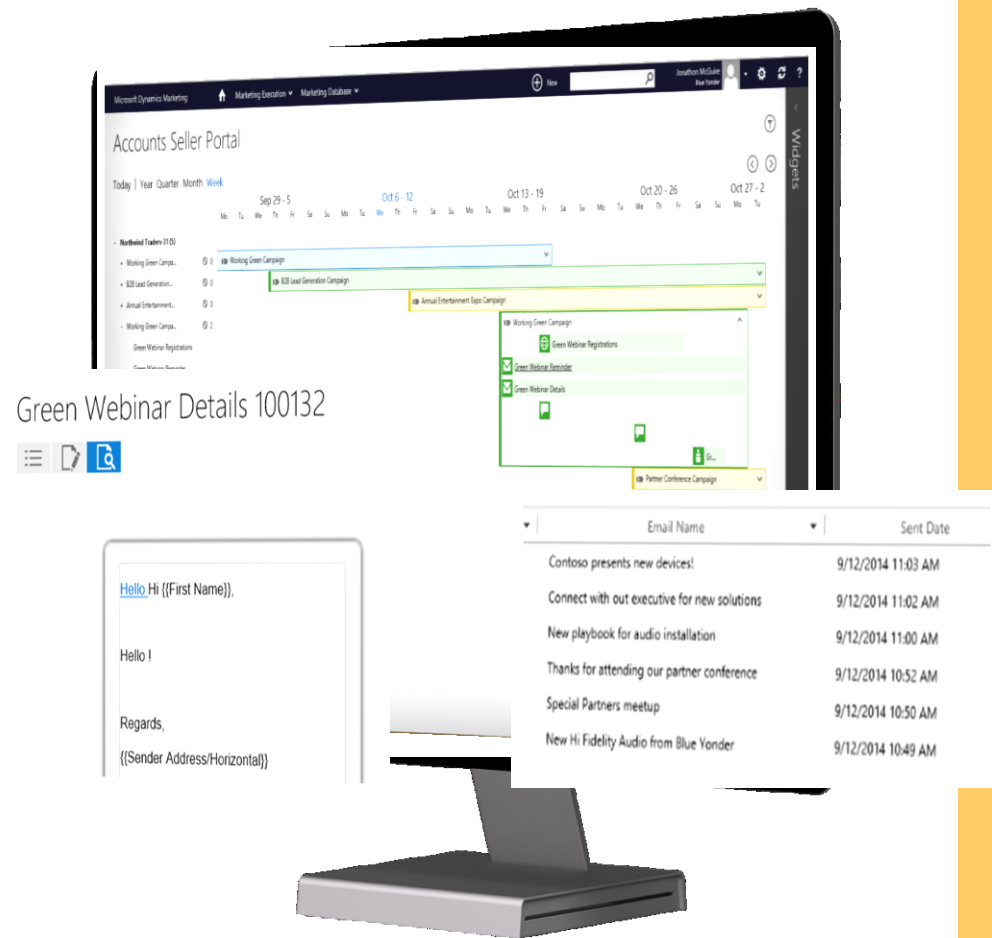
Provide customer view of marketing activities & interactions vs CMO campaign view

## Targeting input

Allow sales to provide input into campaign targeting for key accounts

## Marketing alerts

Subscribe to alerts about customer behavior as part of an integrated campaign flow



# Social marketing

## Social sentiment

Analyze sentiment with easy-to-read charts on the home page

## Social amplification

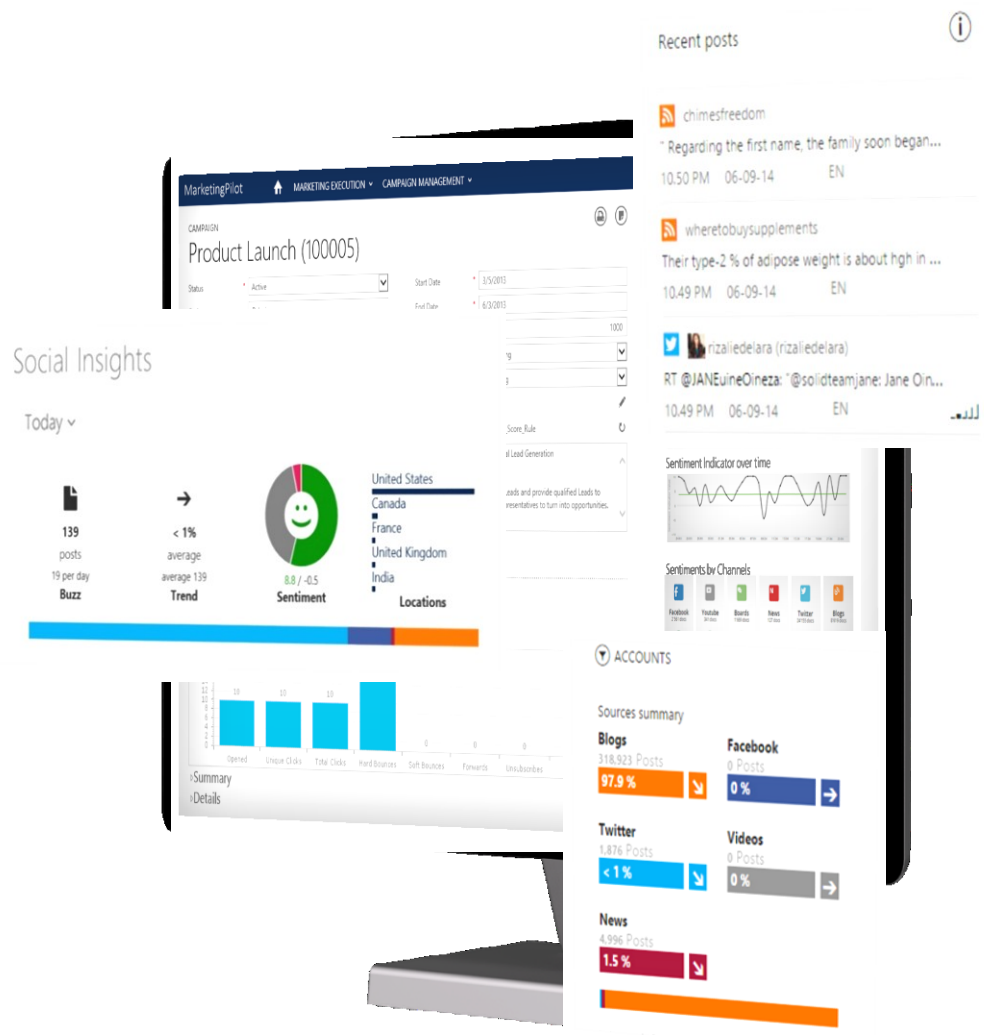
Amplify campaign reach by posting directly to Facebook or Twitter

## Collaboration

Collaborate across internal & external teams with Yammer, Skype & Lync

## Social curation

Curate social messages to ensure compliance with brand standards



# Marketing Analytics

## Reporting

View campaign performance, financials & resource management with out-of-the-box reporting

## Rich analytics

Analyze in depth campaign performance & marketing impact with powerful, flexible analytics

## Time-based analysis

Understand trends & get a complete picture of marketing ROI with time-based analytics



# Microsoft Social Listening

Social  
Listening

Social  
Analytics

Social  
CRM

# Social Listening

## Powerful social listening

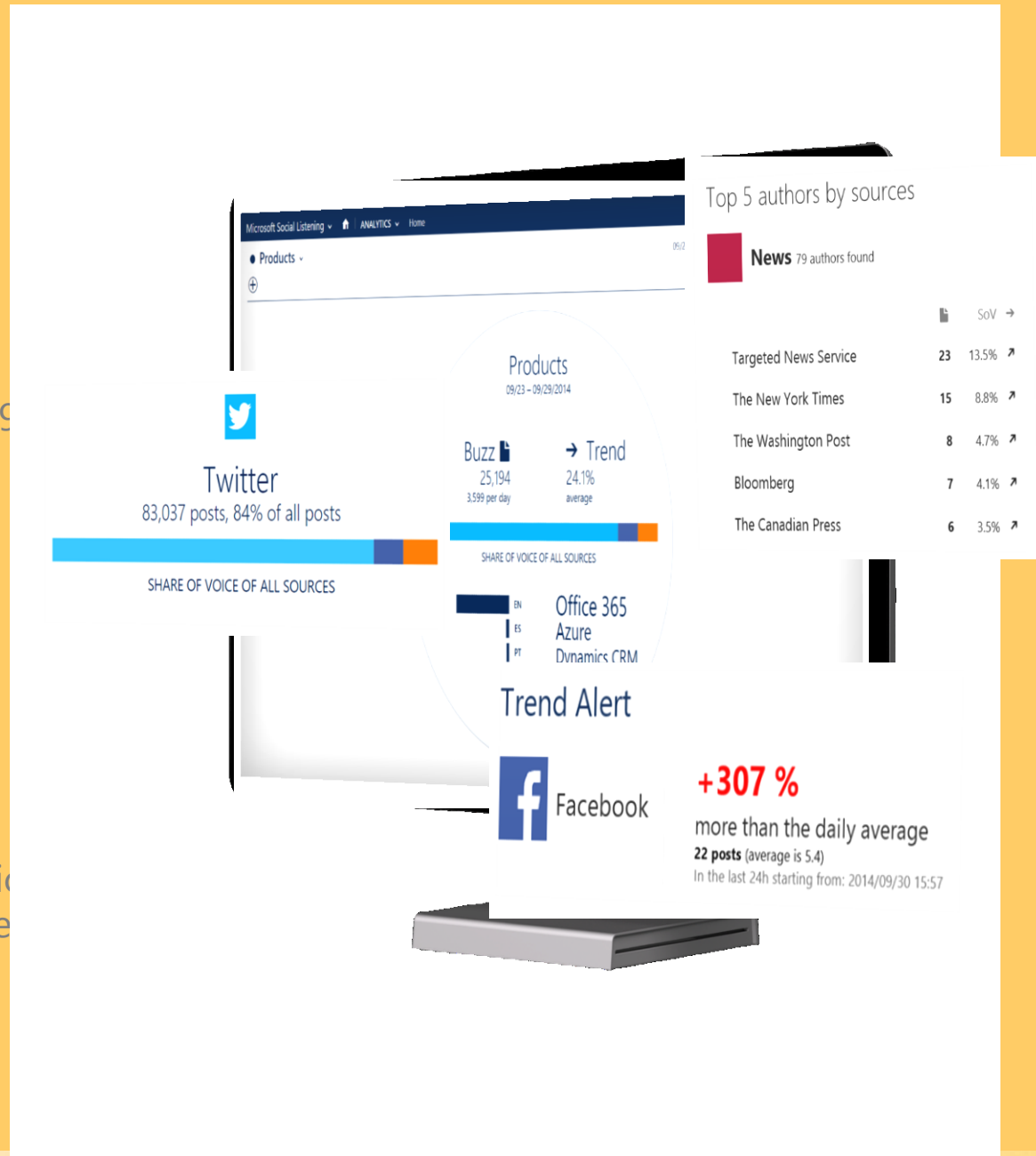
Listen to what people are saying globally across the social web in 19 languages.

## Key influencers

Identify who is actively talking about your brand, products, or services.

## Sophisticated alerts

Detect trends and listen for specific posts to keep you informed on the topics you care about.



# Social Analytics

## Global sentiment analysis

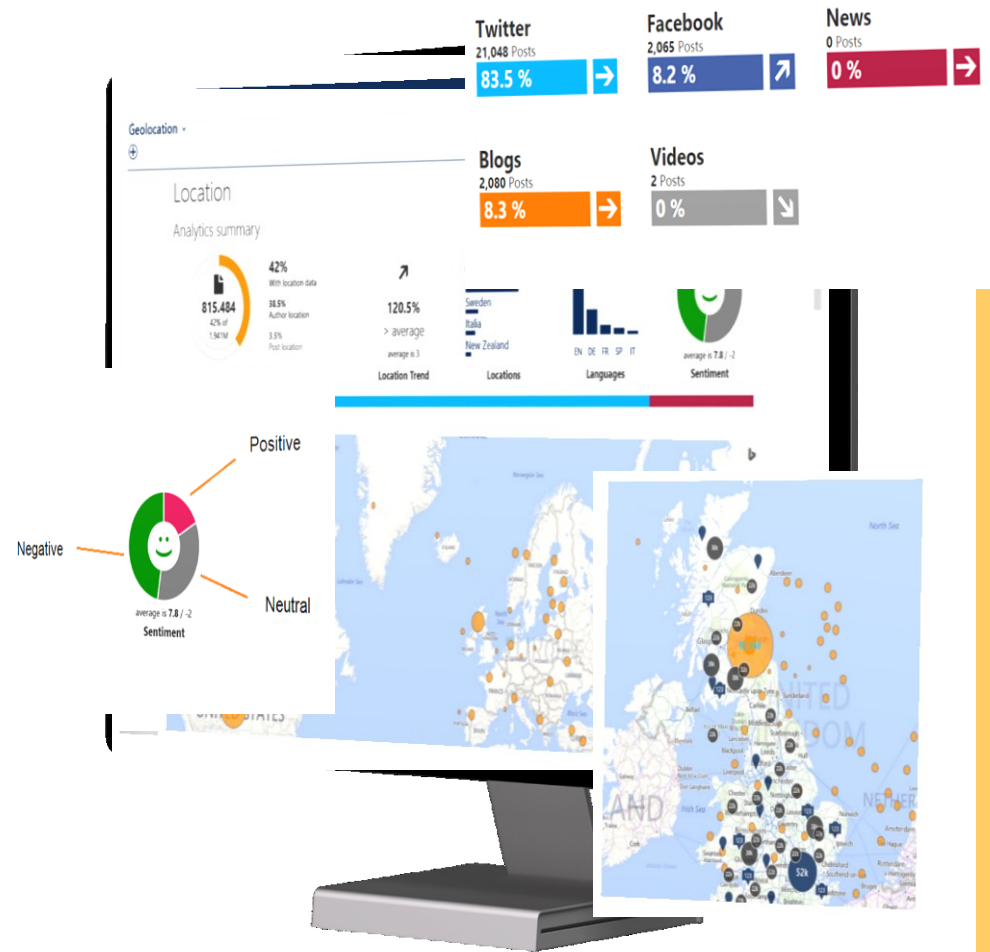
Gain a true understanding of your business, customers and topics that matter most.

## Share of voice

Track and measure topics you care about across Facebook, Twitter, Blogs, Videos and news publications.

## Advanced filtering

Flexible filters allow you to segment your data by source, sentiment, location, or author.



# Social CRM

## Social for Sales

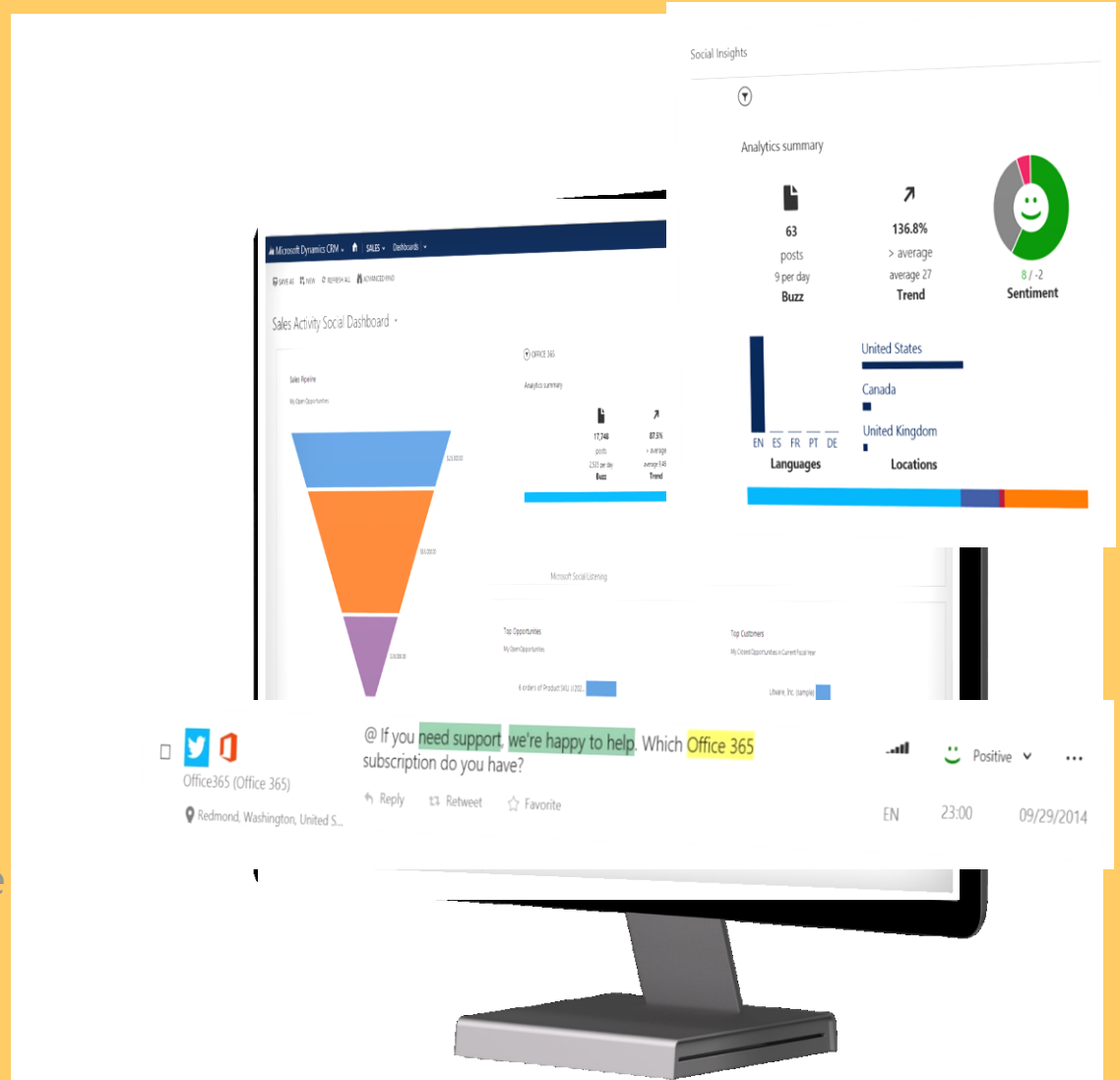
Watch for buying signals, monitor key developments and decision makers at your top accounts.

## Social for Marketing

Manage your brand reputation, nurture influencers and measure campaign effectiveness.

## Social for Service

See how happy your customers are and create alerts to identify any customer issues and trends early on.



# SAP integrated system: CRM module

Module is composed of various functional blocks.

## mySAP Customer Relationship Management - Enterprise

Marketing	Marketing Planning	Customer Segmentation	Campaign Management	Trade Promotion Management	Lead Management	Personalization		
Sales	Sales Planning & Forecasting	Territory Management	Account & Contact Management	Activity Management	Opportunity Management	Quotation & Order Management	Contract Management & Leasing	Incentive & Commission Management
Service	Service Planning & Forecasting	Customer Service & Support	Resource Planning & Optimization	Service Operations Management	Professional Services			
Analytics	Customer Analytics	Product Analytics	Marketing Analytics	Sales Analytics	Service Analytics	Interaction Channel Analytics		

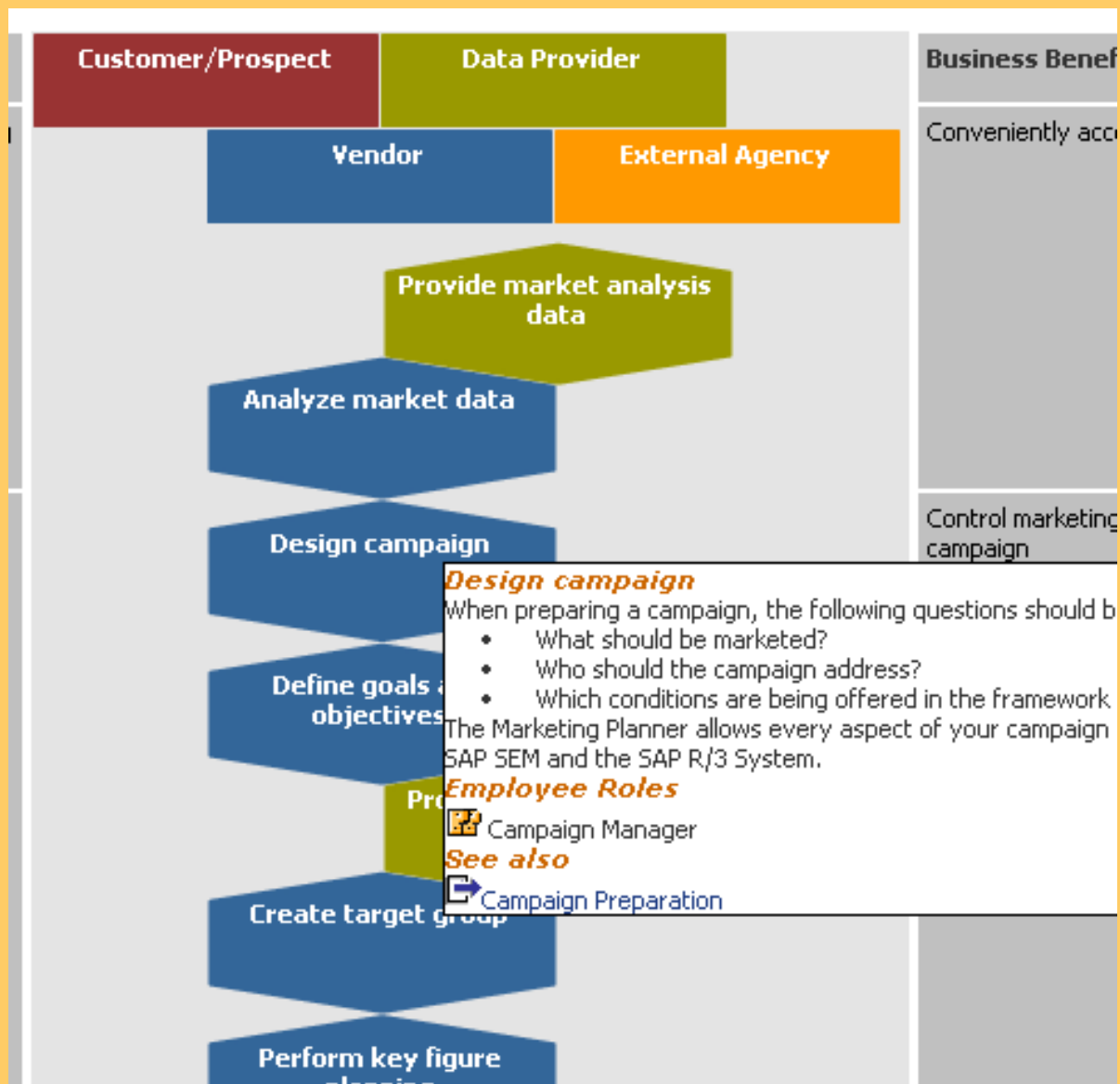


# Analytic scenarios

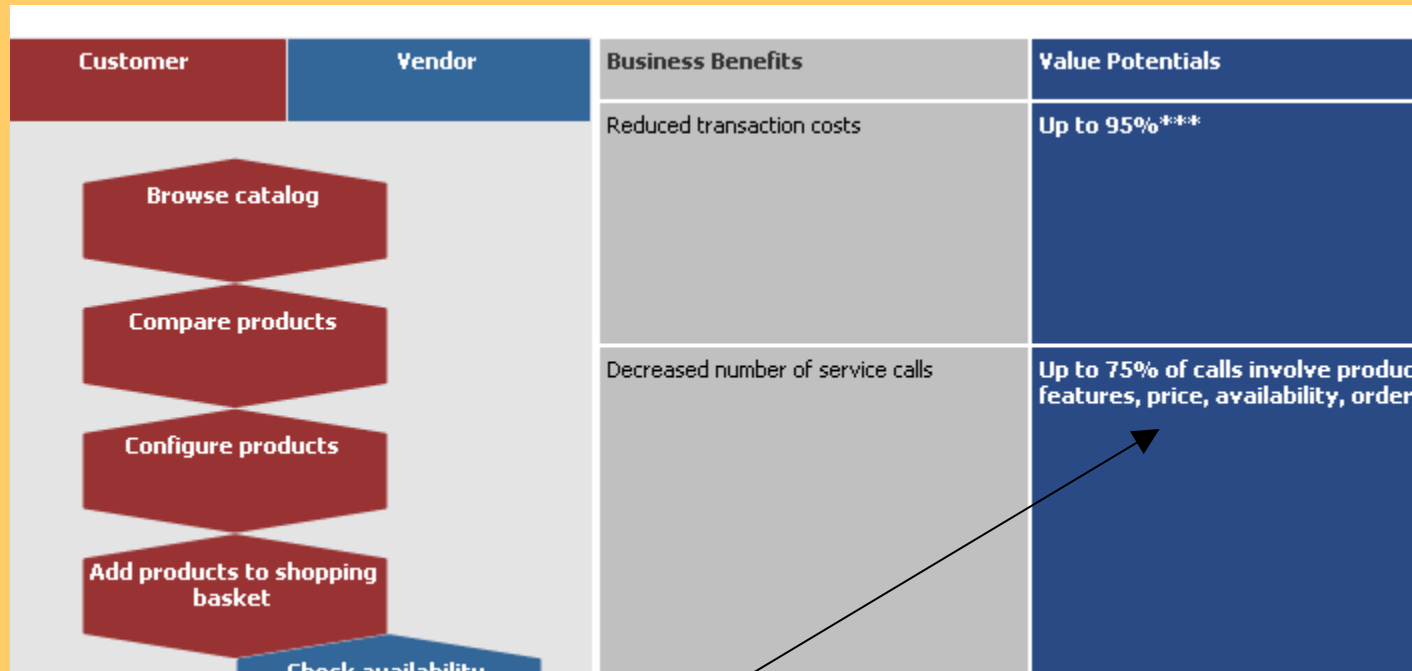
Analytic scenarios- multi purpose analysis

- Customer analysis – value analysis per customer
- Product analysis – observation of product, promotion optimization
- Communication channels – analysis of regular and e-channels
- Marketing analysis- allows to select new markets. Cross-sell scenario design
- Sales analysis – extensive reports “win or lose” analysis for competitive evaluation
- Customer oriented business management by differentiating approaches to customers

# Structure of analytics scenario

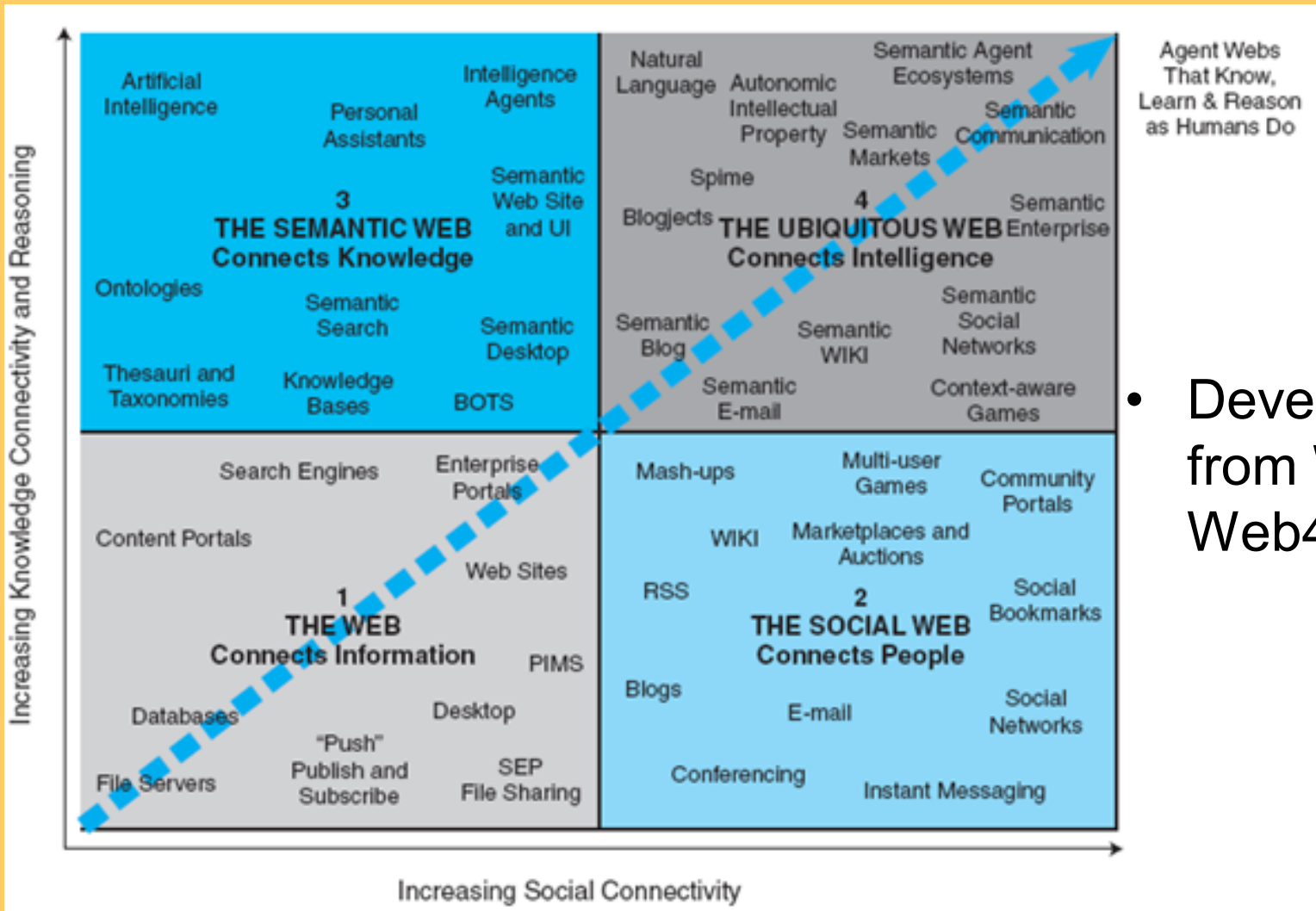


# “Best practice” application in SAP



- The analytic scenarios idea is to evaluate them at all enterprises which implemented SAP solutions. Successful scenarios are standardized and implemented. Benchmark of scenario effectiveness is provided

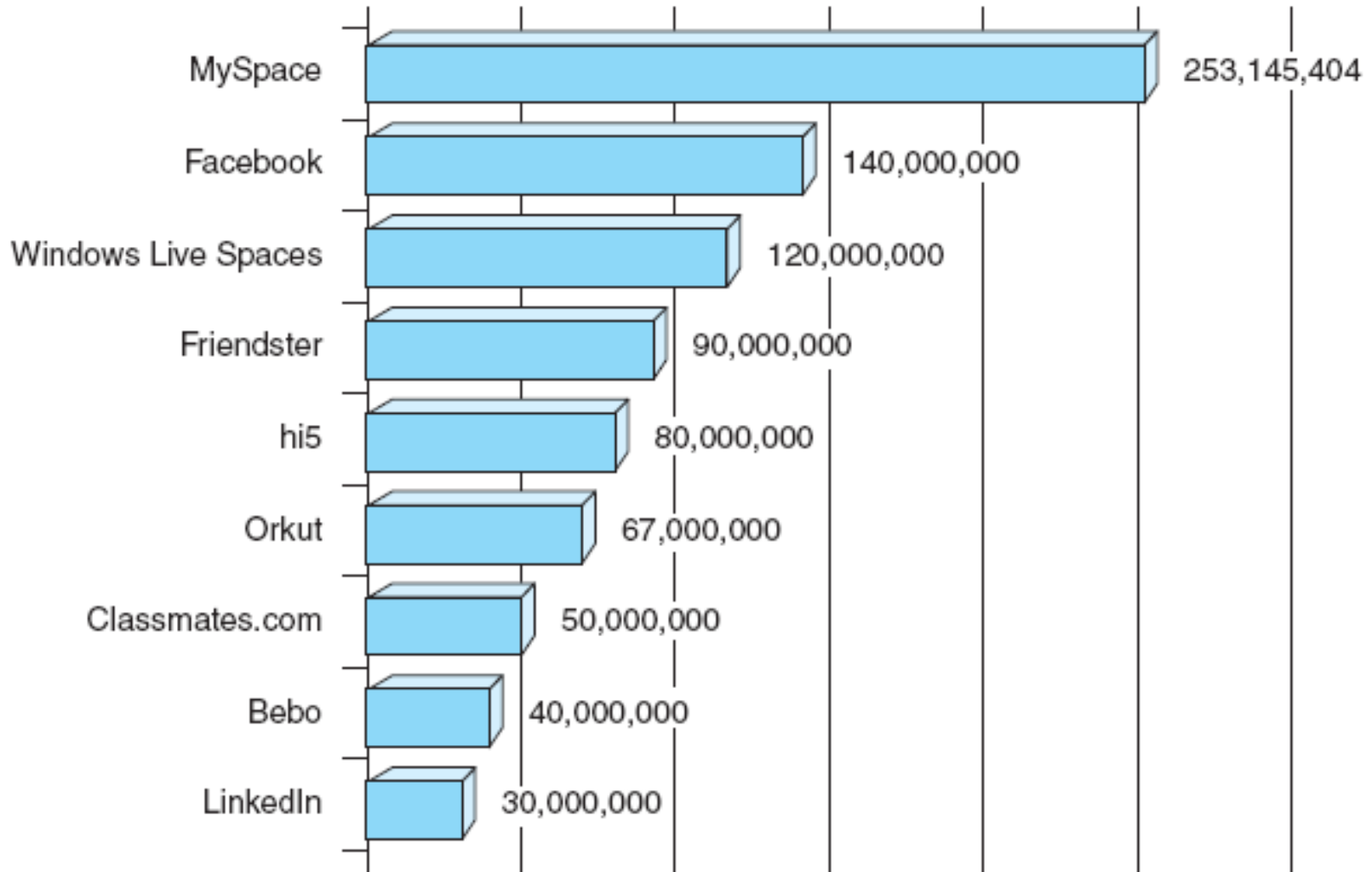
# CRM tasks related to social media analytics- new source for deriving value indicators



- Development from Web1.0 to Web4.0

# Social networks: nine most popular (2010)

**EXHIBIT 9.5 Top Nine Social Networking Web Sites**

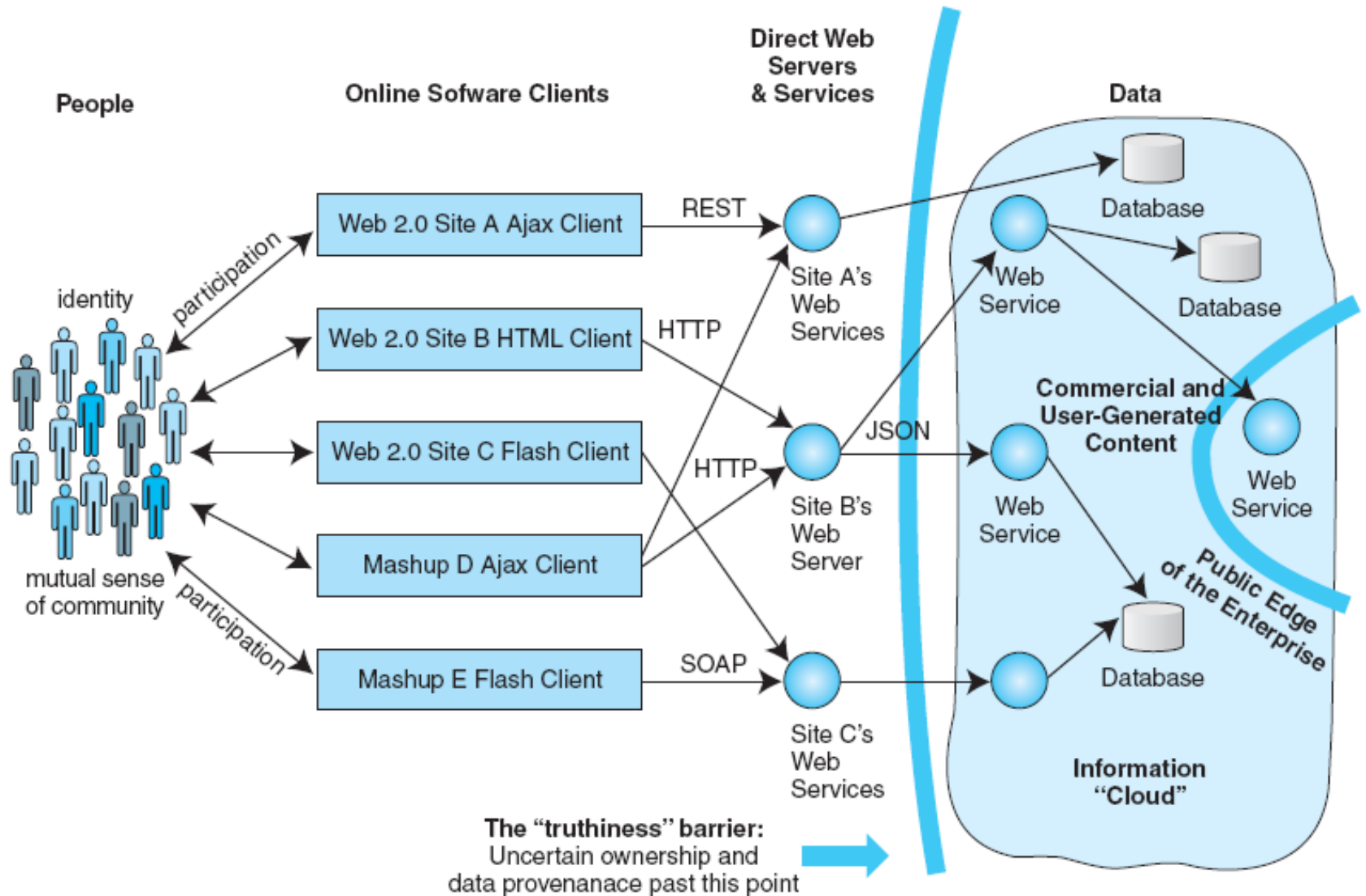


# The Web 2.0 characteristics: Social Media, and Industry Disruptors

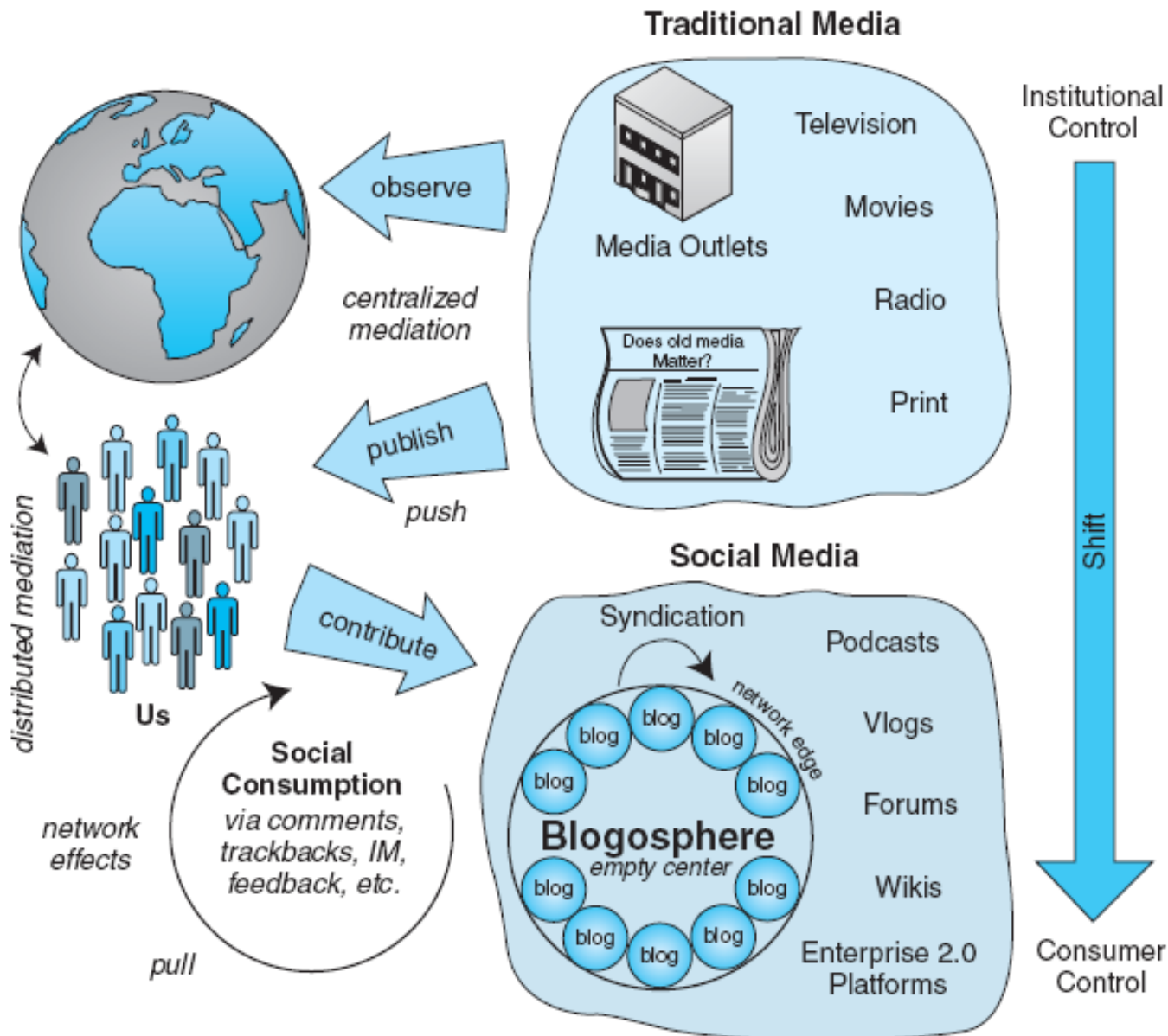
- The ability to tap into the collective intelligence of users
- Data is made available in new or never-intended ways
- Relies on user-generated and user-controlled content and data
- Lightweight programming techniques and tools let nearly anyone act as a Web site developer
- The virtual elimination of software-upgrade cycles makes everything a *perpetual beta or work-in-progress and allows rapid prototyping*

EXHIBIT 9.1

# The Emergence and Rise of Mass Social Media



# Web 2.0 Architecture of Participation





# Online Social Networking: Basics and Examples

New Business Models

## **social network analysis (SNA software)**

The mapping and measuring of relationships and information flows among people, groups, organizations, computers, and other information- or knowledge-processing entities.

The nodes in the network are the people and groups, whereas the links show relationships or flows between the nodes. SNAs provide both visual and mathematical analyses of relationships

# Business and Enterprise Social Networks

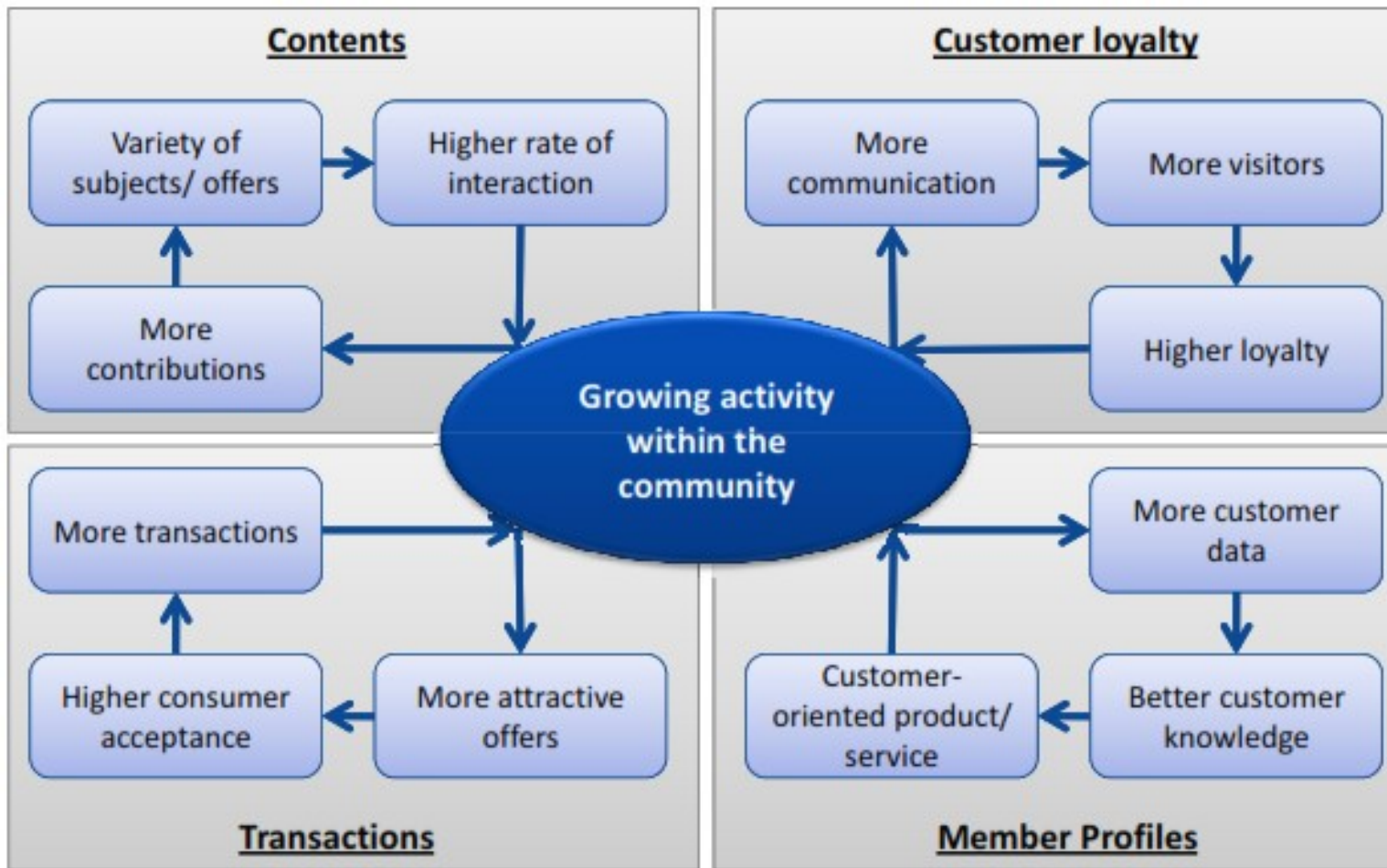
- **social marketplace**

The term is derived from the combination of *social networking* and *marketplace*. An online community that harnesses the power of one's social networks for the introduction, buying, and selling of products, services, and resources, including one's own creations. Also may refer to a structure that resembles a social network but is focused on individual members

# Commercial Aspects of Web 2.0 and Social Networking Applications

- Consumers can provide feedback on the design of proposed or existing products etc.
- Word-of-mouth (*viral marketing*) is free advertising
- Increased Web site traffic brings more ad dollars
- Increased sales can come from techniques based on personal preferences such as collaborative filtering

# CRM in virtual community



Source: own illustration adopted from Powarzynski 15

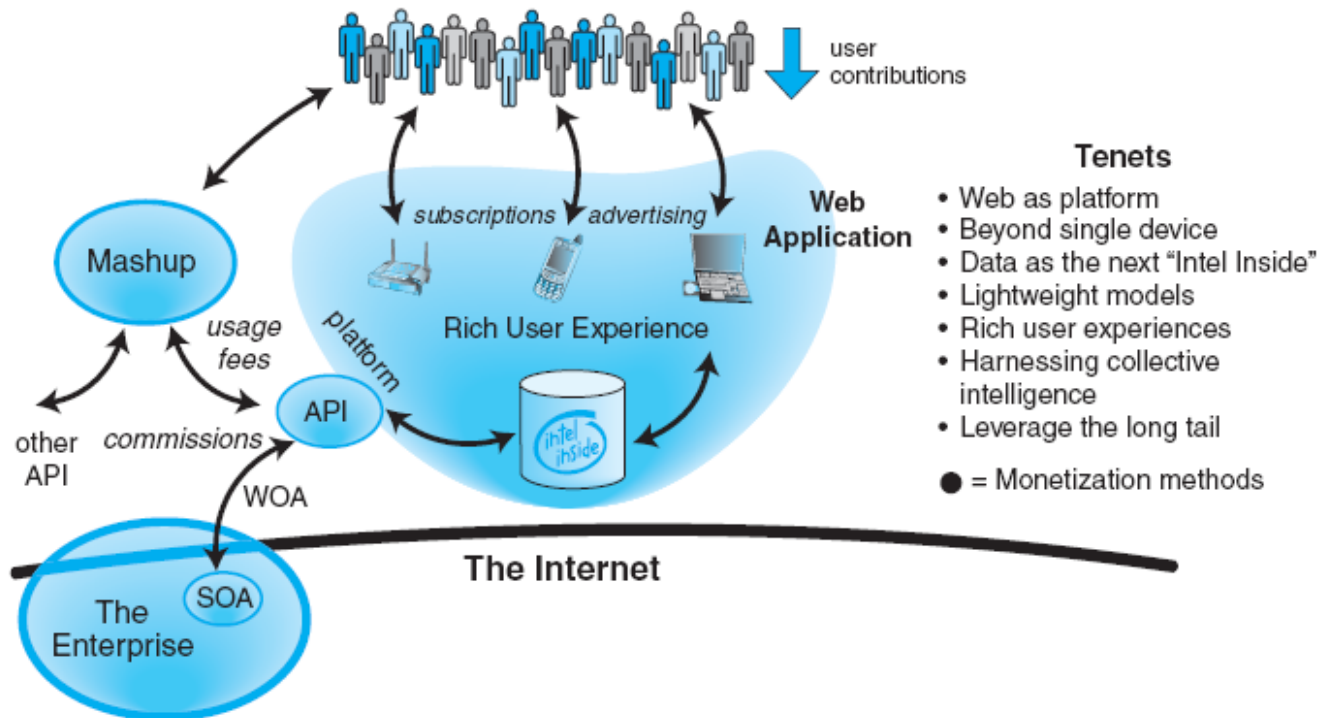
# Web 2.0 data types

- Rating
- Tagging
- Forum content
- Blog
- E-newsletter
- Video materials
- Competitions
- Search engine analysis
- Shopping in social networks
- Feedback from customers: conversational marketing

# Advertising using social networks, blogs

- Viral (Word-of-Mouth) Marketing done by bloggers
- Classified Ads, Job Listings, and Recruitment
- Special Advertising Campaigns
- Mobile Advertising

**EXHIBIT 9.7 Generating Revenue from Web 2.0 Applications**



# The Future: Web 3.0 And Web 4.0

- **Web 3.0:** A term used to describe the future of the www. It consists of the creation of high-quality content and services produced by gifted individuals using Web 2.0 technology as an enabling platform
- **Semantic Web:** An evolving extension of the Web in which Web content can be expressed not only in natural language, but also in a form that can be understood, interpreted, and used by intelligent computer software agents, permitting them to find, share, and integrate information more easily
- **Web 4.0:** It is still an unknown entity. However, it is envisioned as being based on islands of intelligence and as being ubiquitous

# Blog record preparation for analysis

📅 Sunday, August 20, 2006

## \* Thinking and berries in Umea

I has not been blogging much last week, but this is only because I has been writing :) And, the best thing of it is where and how I has been writing.

I'm in Umea, Sweden, for [BIRN workshop](#), [presentation](#) and work/fun with [Stephanie](#). I'm happy I was able to come a few days earlier.

So far it has been almost perfect work-life balance environment. I worked on my own stuff (more productively than in my own office), discussed tons of things with Stephanie (mainly on weblog research, life and baking), enjoyed culture and nature, and all of that with picking and eating lots of berries.

Some time back [Aldo wrote](#) about thinking locations - places where you can get away from the pressures of thr urgent to think your big deep thoughts - I was thinking of it while I enjoyed work and fun here in Umea.

The social component is very important, and perhaps one of the unique aspect of such a Deep Thought-network: thinkers need on the one hand to be able to concentrate, focus, and withdraw from the world. On the other hand, they very much need to be able to talk with kindred spirits, preferably people working on their own creative projects.

More on <http://thinkingcommunities.wikispaces.com>

Continued: [1 comments](#) | [TrackBacks](#) | [Links from other weblogs](#)  
More on: [life PhD](#)



Link to another blog

Link to another blog post

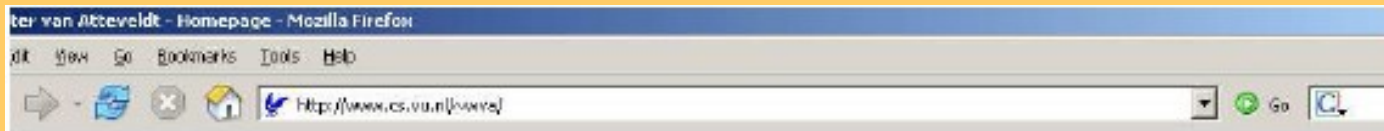
Quote

Links from other blogs

Comments



# Internet pages analysis: data preparation



(Foto Vincent Doek)

[\[main\]](#)

[\[research\]](#)

[\[personal\]](#)

[\[contact\]](#)

Welcome!

I am a PhD student at the **Vrije Universiteit** at the **Knowledge Representation and Reasoning** group of the **AI Department** and the **Communication Sciences** department of the **Faculty of Social Sciences**. My supervisors are **Frank van Harmelen** (AI) and **Jan Kleinnijenhuis** (FSS).

I am also co-founder of **2AT**, an IT-company in consultancy and on-demand software development.

This website is made using a minimal amount of javascript to create sane resizing behaviour and "clean" (x)html and css. If you know a way to replicate the resizing behaviour without javascript, or if the site looks weird in your browser, please let me know.

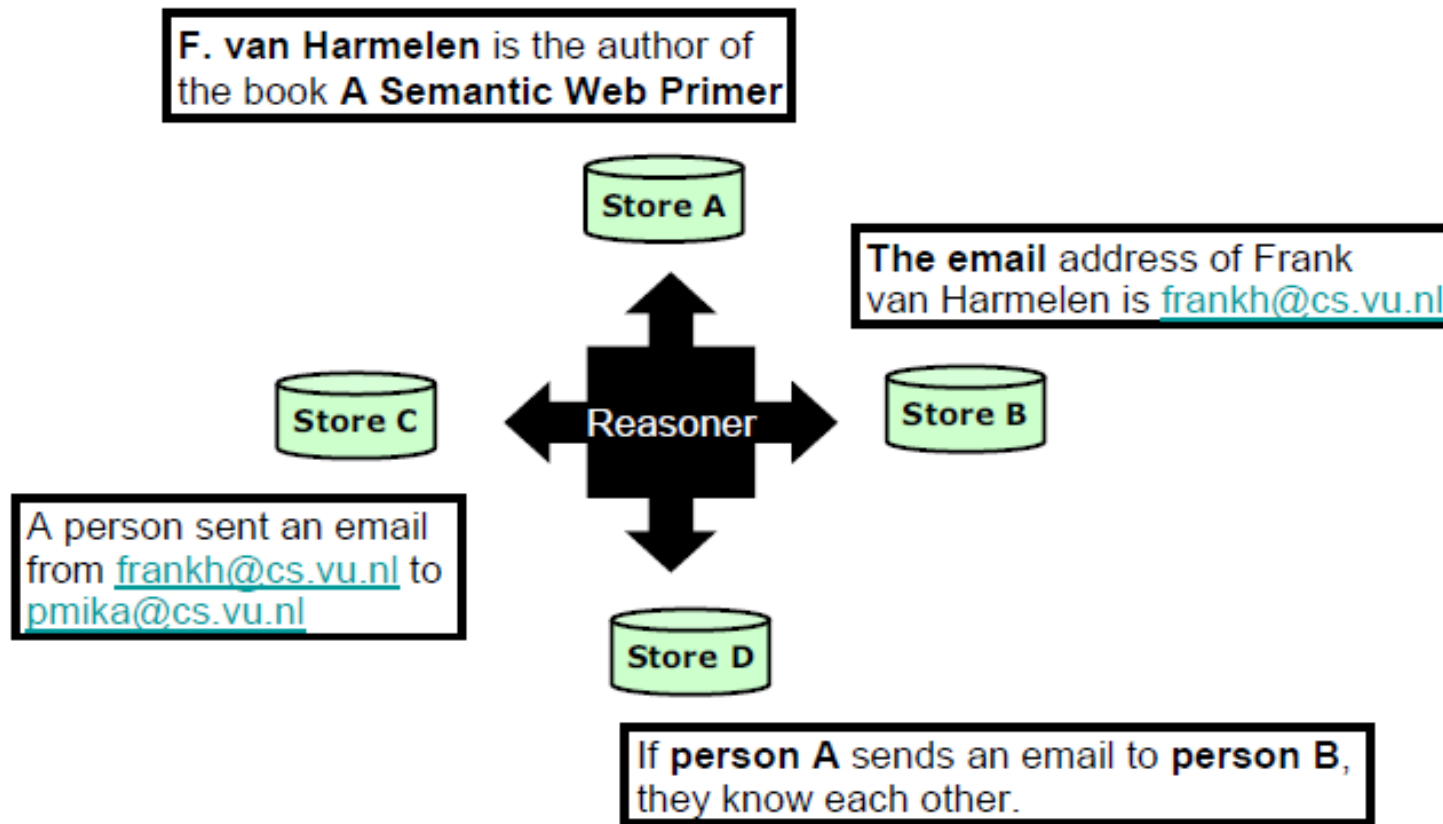
This website is best viewed with an expensive monitor and a free browser.

Link to webpage of another researcher

Co-occurrence of names

# Hot to use ontologies

- By interlinking information from various sources, it is possible to define if “the person knows book author”



# Links among individuals and their types

Microsoft Internet Explorer window showing the FLINK website. The address bar displays: <http://prauw.cs.vu.nl:8080/flink/action/showperson?uri=http%3A%2F%2Fwww.cs.vu.nl%2F%7Epmika%2Fsocionet%23Pat%2BHayes>

FLINK  
The Who is Who of the Semantic Web

home network ontology cluster world stats feedback about

### Social Network of Pat Hayes

**Importance Measures**

Degree centrality	38.0
Closeness centrality	0.42
Betweenness centrality	1000.71

[What do the numbers mean?](#)

**Rankings**

Degree rank	24
Closeness rank	34
Betweenness rank	66

**Links**

- [Search Google!](#)
- [Search Foafnaut!](#)
- [Search Citeseer!](#)
- [Search A9 \(Amazon\)!](#)

Stop

Got FOAF?

Tip: If the graph looks messy, reload the page!

Personal profile

Semantic Web Challenge First Place 2004

RDF

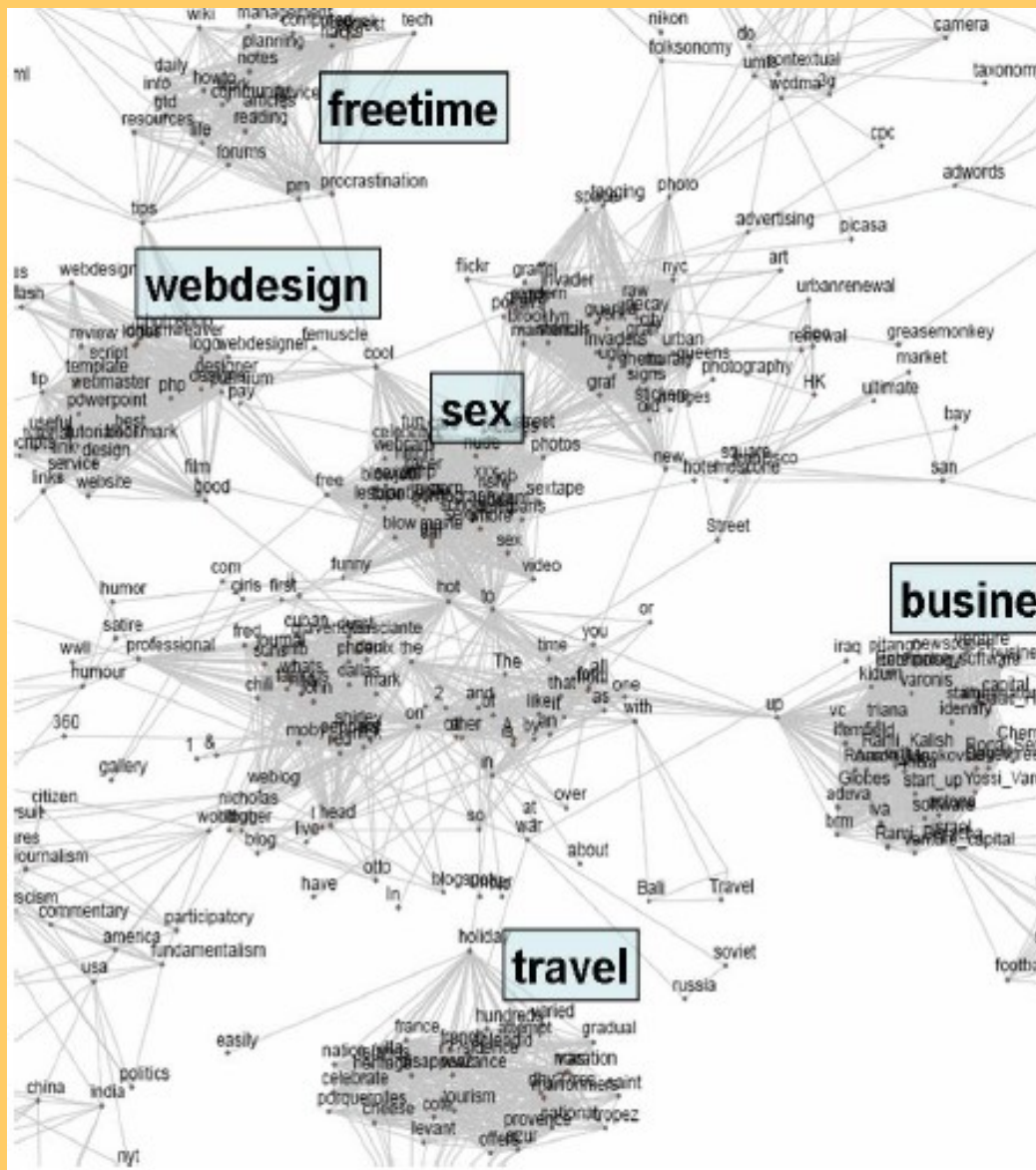
openRDF.org

Sesame

JUNG  
Java Universal Network/Graph Framework

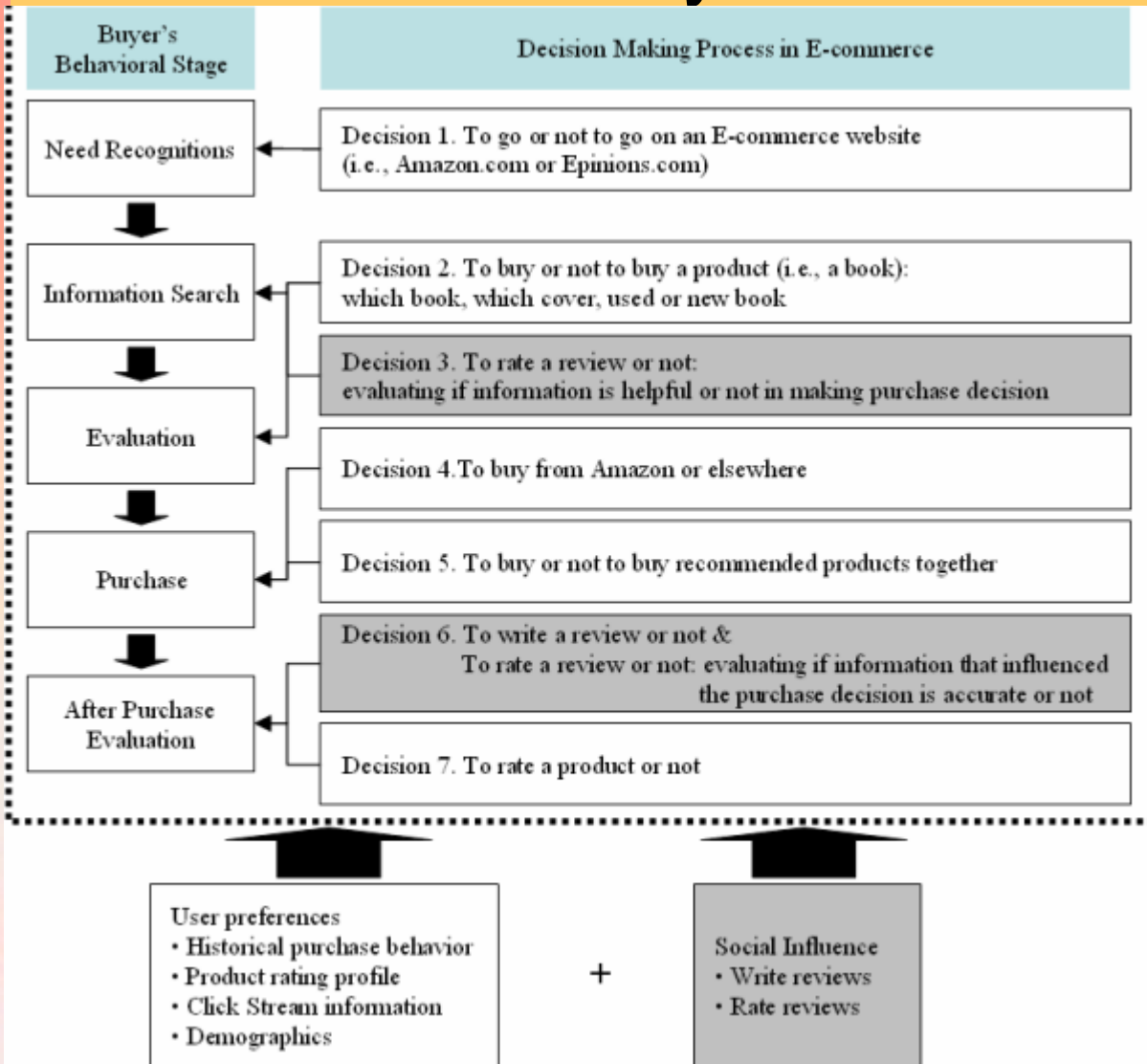
Powered by  
TOMCAT

# Internet query analytics



- Grouping by topics
- Defining group sizes
- Detailed information of the query success
- The suitable formats and algorithms for queries can be designed

# Conversion analysis

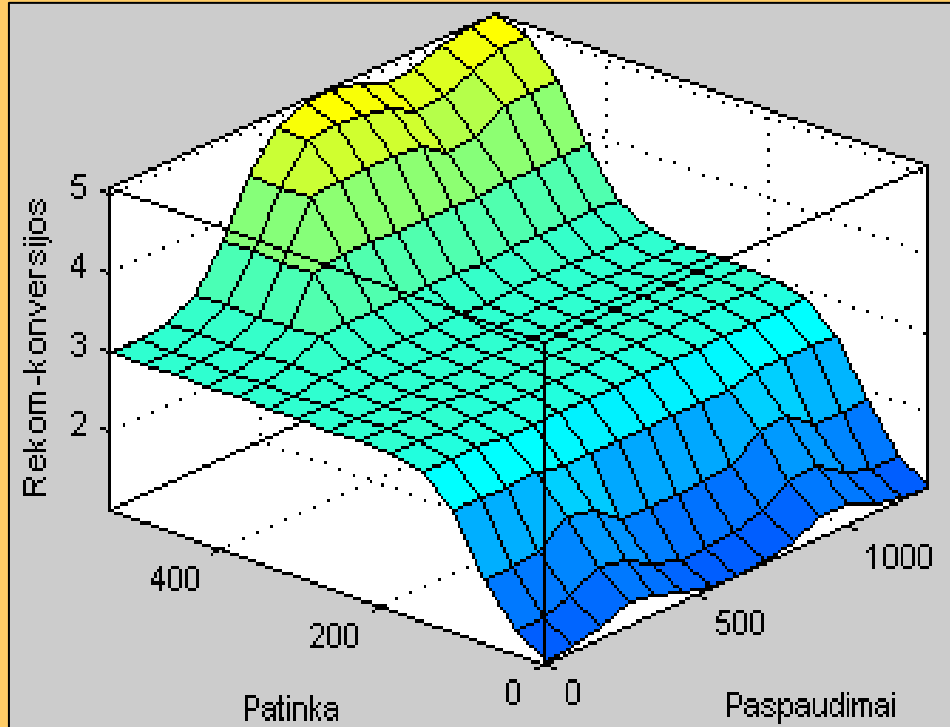


User decision making process, affected by social networks:

- Likes
- Impressions
- Friends impressions
- Clicked
- Share
- Comments
- Total fans

Young Ae Kim; Srivastava, J. (2007) *Impact of Social Influence in E-Commerce Decision Making*

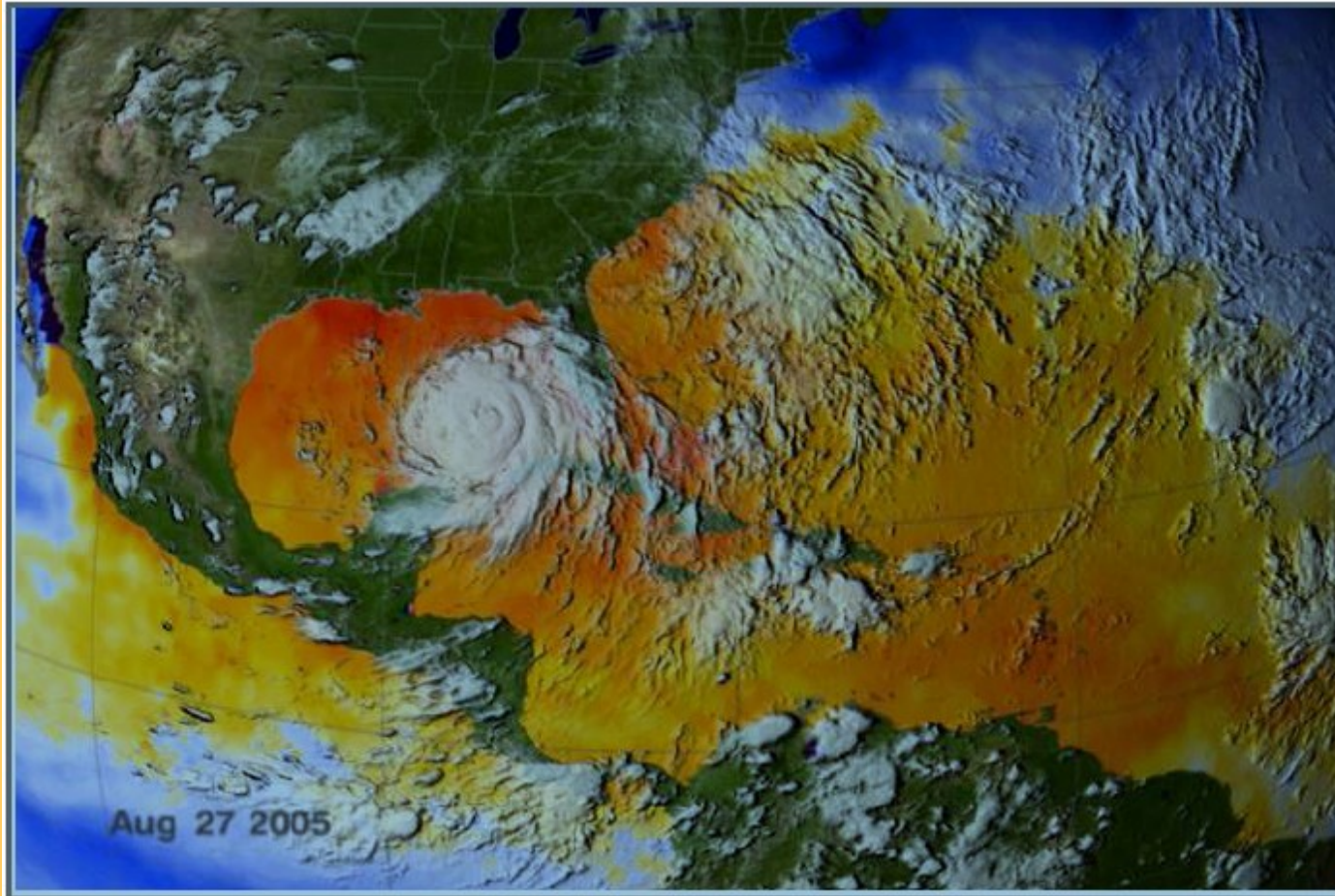
# Conversion analysis



The conversion rate (Z-axis) is affected by the likes (X-axis) and Clicks (Y-axis).

The correlation among the indicators for this case is 0,98. However each business case tend to be unique and should be explored by the enterprise in long term for its customer base

# How it spreads when in need: Katrina PeopleFinder



Hurricane  
2005

1.1 M people  
were on  
search

Blogger  
initiative for  
search

PeopleFinder  
Information  
Format PFIF  
system was  
implemented  
during 24 hrs

# Peoplefinder query sample

## LOOKING FOR MY NIECE AND FAMILY!!!

Reply to: [comm-211989272@craigslist.org](mailto:comm-211989272@craigslist.org)

Date: 2006-09-26, 4:06PM CDT

MY NAME IS ELVINA DAY AND I AM LOOKING FOR MY NIECE SAMANTHA DEZARA IN THE AREA OF THE WESTBANK. IF ANYONE KNOWS HER WEREABOUTS PLEASE CONTACT ME AT 225-665-0394 OR E-MAIL ME AT patrickebvina@yahoo.com. HER MOTHER'S NAME IS SARAH AND HER BROTHER'S NAME IS MAURICE.  
 THANKS!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

this is in or around NEW ORLEANS, WESTBANK.  
 no -- it's NOT ok to contact this poster with serv:

Done

Record 6 of 77001

Save Add Close

FirstName	<input type="text" value="Christopher"/>
LastName	<input type="text" value="Jones"/>
StreetAddress	<input type="text"/>
City	<input type="text" value="Gretna"/>
State	<input type="text" value="LA"/>
ZipCode	<input type="text"/>
Status	<input type="text" value="UNKNOWN"/>
ContactPerson	<input type="text" value="Barry Devis"/>
ContactPhone	<input type="text" value="701) 399-4222"/>
CellPhone	<input type="text"/>
ContactEmail	<input type="text" value="lifeisnow7@yahoo.com"/>

22 yrs old Black male date of birth 11/20/84 last place of residency was in Gretna LA. Terry Eilane Jones is his Mother also lived in Gretna @ the time Katrina hit. If anyone can help me locate my son I will be very grateful



# Project scope and data management problems

- 7,000 records on Sunday. 50,000 records on Monday evening
- 4000 volunteers
- Total 640,000 records
- ShelterFinder – other project where all shelters for people were registered
- Katrina PeopleFinder project data was passed to Google and used together with American Red Cross and Microsoft for finding people
- Project is now closed for **preserving sensitive data**
- The processes can be transferred from non-profit to the commercial area for analysis of referral information

# Literature

Berry, M.,J.A., Linoff, G.S. (2011), "Data Mining Techniques: For Marketing, Sales, and Customer Relationship Management", (3rd ed.), Indianapolis: Wiley Publishing, Inc.

(Electronic Version): StatSoft, Inc. (2012). Electronic Statistics Textbook. Tulsa, OK: StatSoft. WEB:  
<http://www.statsoft.com/textbook/>

(Printed Version): Hill, T. & Lewicki, P. (2007). STATISTICS: Methods and Applications. StatSoft, Tulsa, OK.

Sugar CRM Implementation

<http://www.optimuscrm.com/index.php?lang=en>

Statsoft: the creators of Statistica <http://www.statsoft.com>

Viscovery Somine <http://www.viscovery.net/>