

Microsoft Office in a World of Services & Mash-Ups

SharePoint as a Platform for Composite Apps

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What moves the market?

TRENDS ON THE HORIZONT



Service Orientation



Software as a Service

The background of the slide is a complex network of blue spheres connected by thin, light-colored lines. The spheres are arranged in a somewhat regular pattern, but the lines connecting them are crisscrossing and overlapping, creating a dense, interconnected web. The overall color palette is light blue and white, giving it a clean, technological feel.

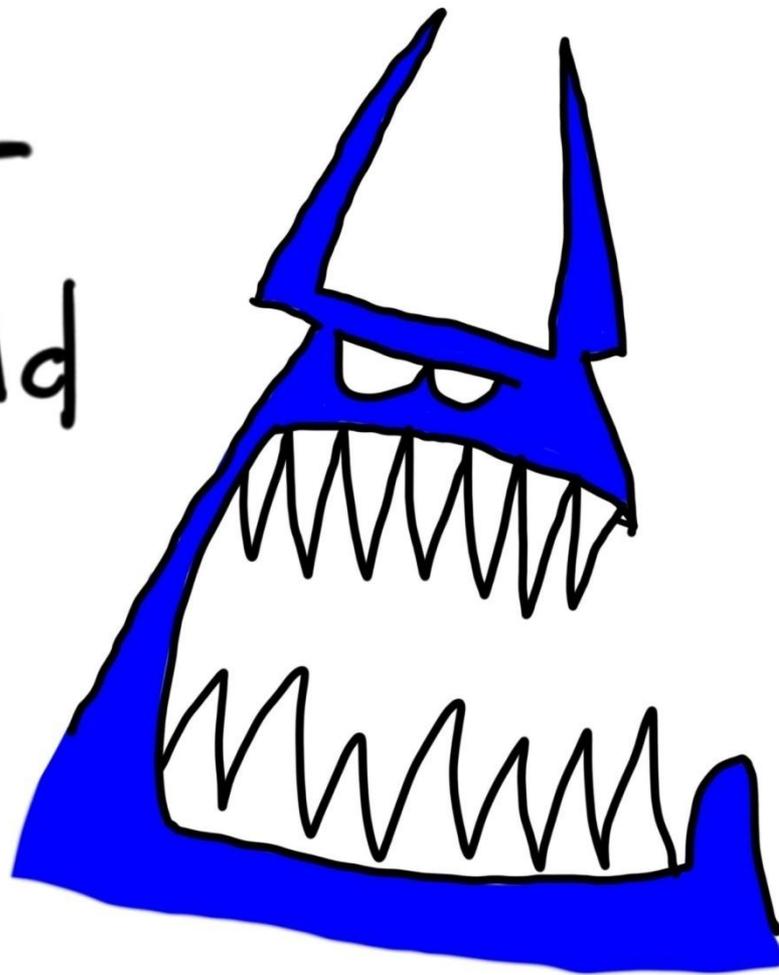
Web 2.0 and Economy of Scale

Social media in Enterprises?

WHAT & WHY – ENTERPRISE 2.0

Social Media Will Happen!

Microsoft
change the world
OR go home



legal?

correct?

secure?

Markets are Conversations

...?

consequences?

complete?

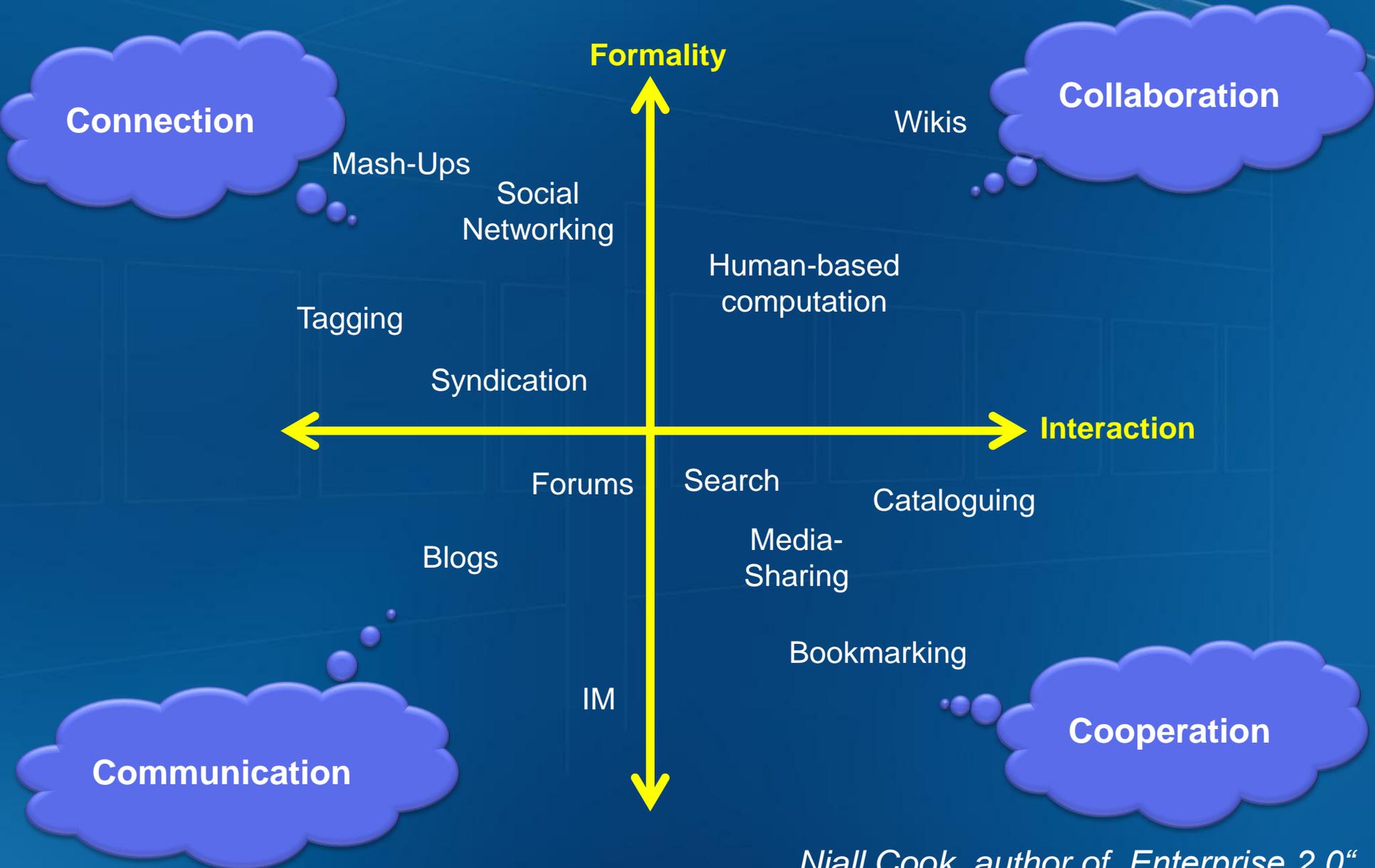
Classification - SLATES

- Search – find what you need
- Links – influence relevance
- Authoring – people want communicate
- Tags – find common taxonomies
- Extensions – tags with authoring & links
- Signals – get alerts on your interests

Classification - FLATNESSES

- Freedom
- Links
- Authorship
- Tagging
- Network-oriented
- Extension
- Search
- Social
- Emergence
- Signals

The 4 C's of Social Media



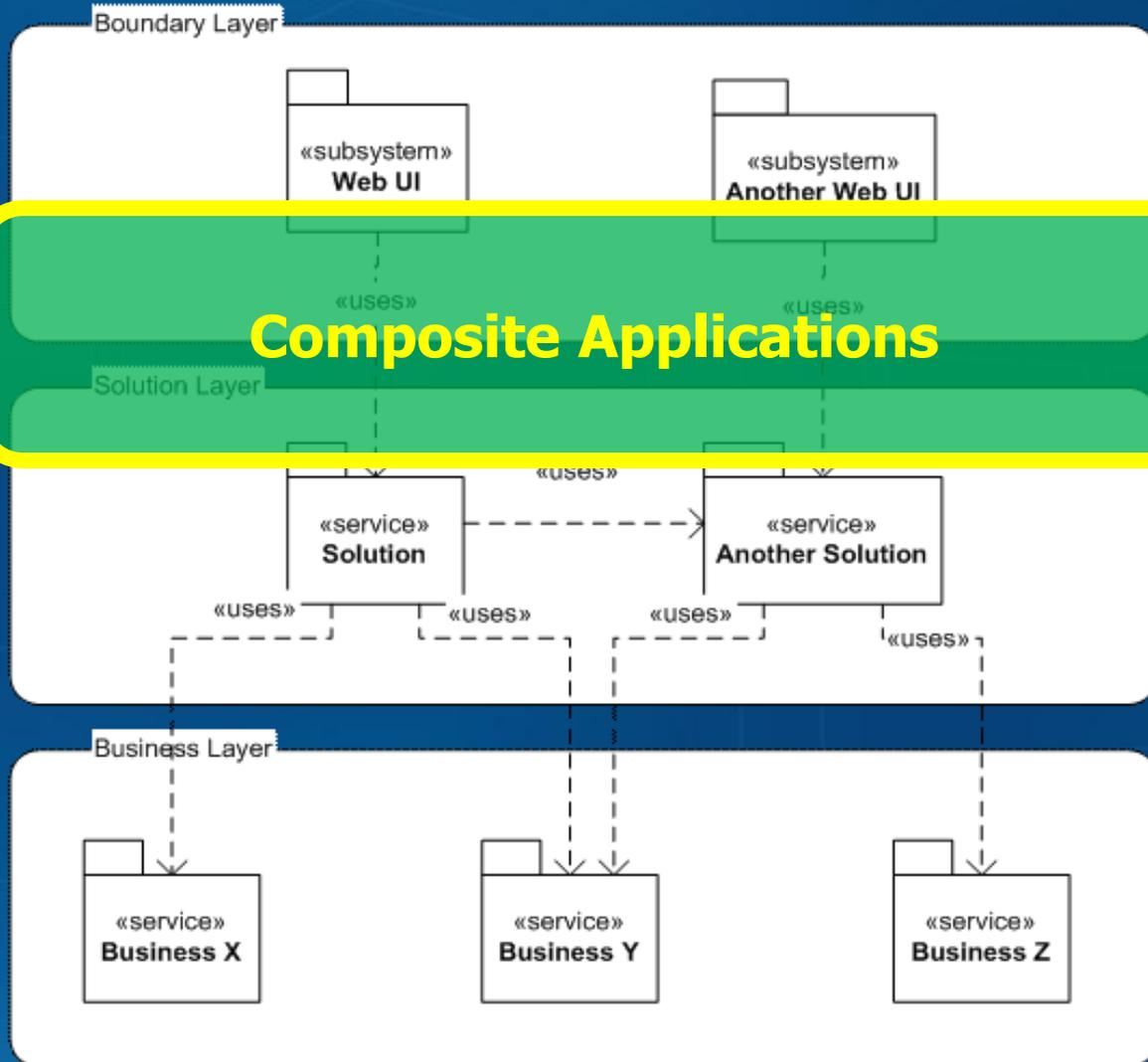
More than Wikis & Co!

- Integrate line-of-business apps?
 - As provider and consumer
- Understand breath of processes
 - What needs to be formal?
- *„Enterprise 2.0 is a synergy of technologies, development models and delivery methods...“*

Will your users talk to services?

SERVICES IN A SOCIAL WORLD

Categories of Services



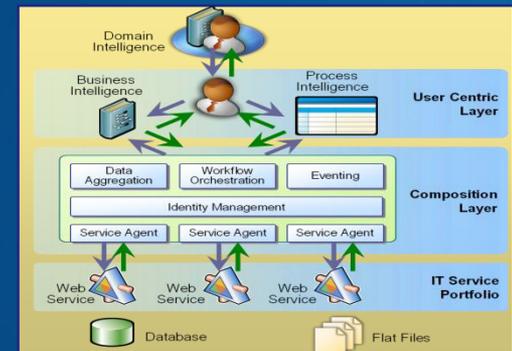
User Experience
(ad-hoc, agile)

Service portfolio
(automated business)

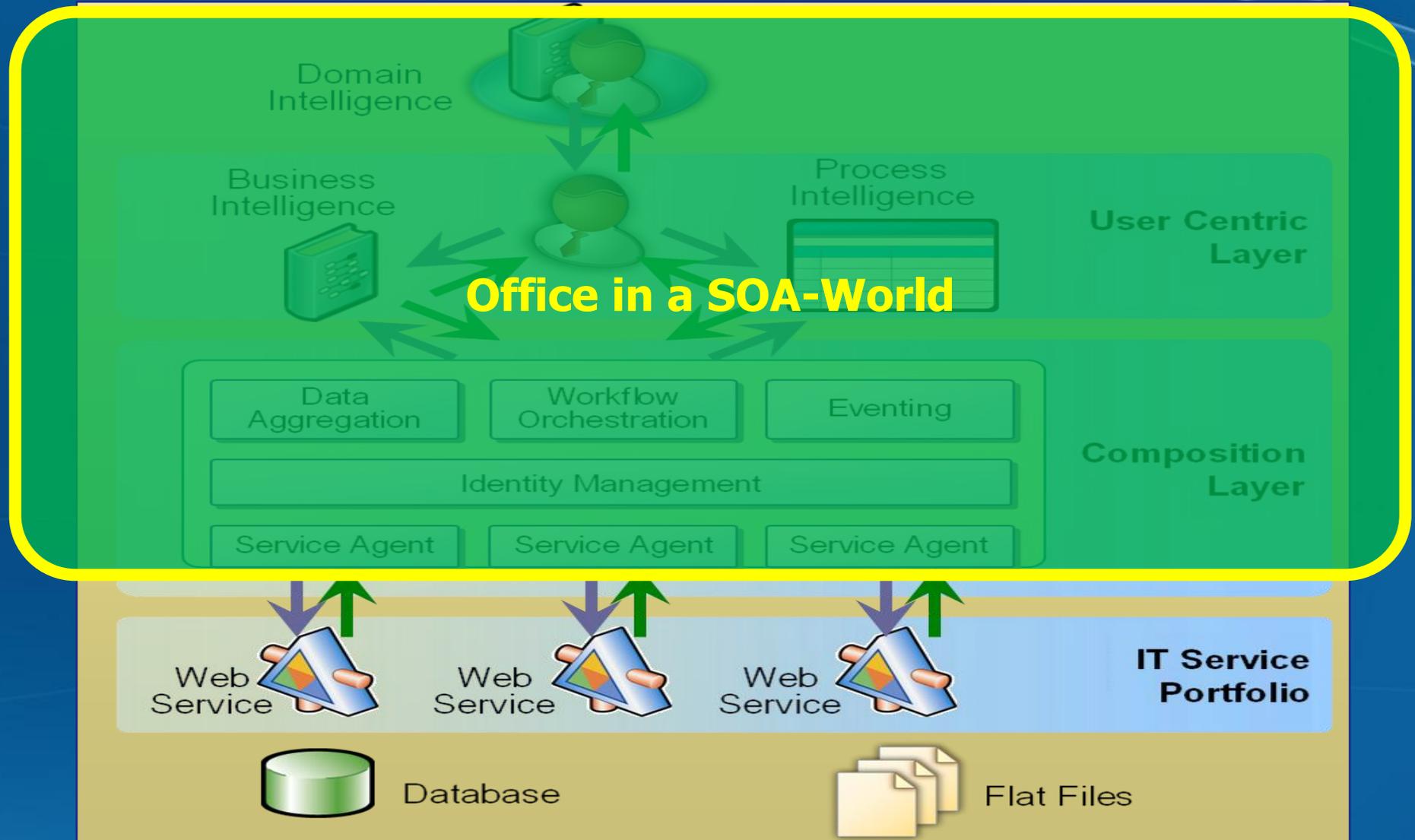
Single Capabilities
(automated business)

From Solutions to the Users

- What means composition?
 - Aggregation of information
 - Transformation of information
 - Enhancement and enrichment



Enterprise Mash-Ups



Which role plays SharePoint here?

SHAREPOINT AS PLATFORM

SharePoint Architecture



**Team
Collaboration**



Microsoft Office SharePoint Server Modules
(Enterprise features, e.g. CMS, DMS, Project Management)

Storage

Security

Management

Topology &
Site Model

APIs

Windows SharePoint Services

ASP.NET 2.0

ADO.NET (Data)

Windows Workflow

.NET Framework 3.0

(Enterprise) Mash-Up

In web development, a **mashup** is a web application that combines data from more than one source into a single integrated tool;

SharePoint as a Mash-Up

- Quickly create „little applications“
- Composed of
 - Custom lists with new content
 - Web part pages as „portal entry-point“
 - (Custom) content types
- Integrate information from other apps?
 - WSRP web part
 - Custom web part development
 - Business Data Catalog (BDC)

Simple Page Redisplay

- Web Part hosts other page in IFRAME
- Page being displayed either:
 - Explicitly knows it's being IFRAMED
 - Avoids use of extra navigational UI
- Examples
 - Outlook Web Access
 - SAP iViews

demo

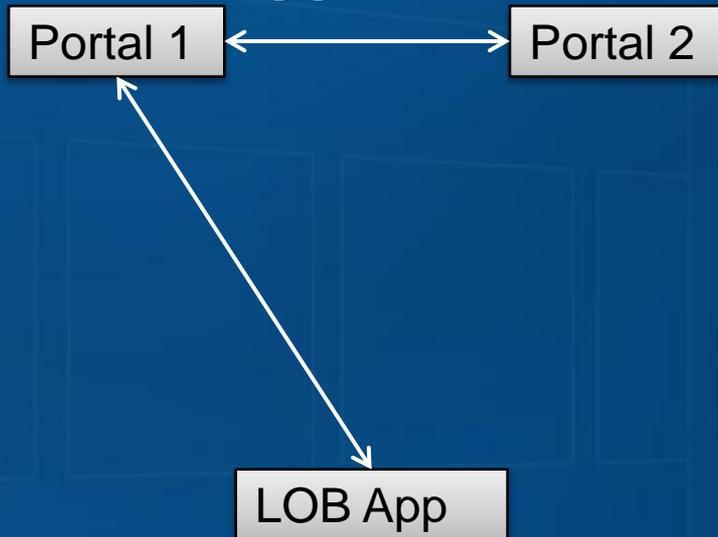
Mash-Up, WSRP and Custom Web Part

WSRP Challenges

- Identity Hop
 - Credentials need to be passed
 - Browser → SharePoint → WSRP service
 - Options all have issues:
 - Kerberos delegation
 - SharePoint Server SSO
 - WS-Security
- Deployment architecture
 - (see next slide)

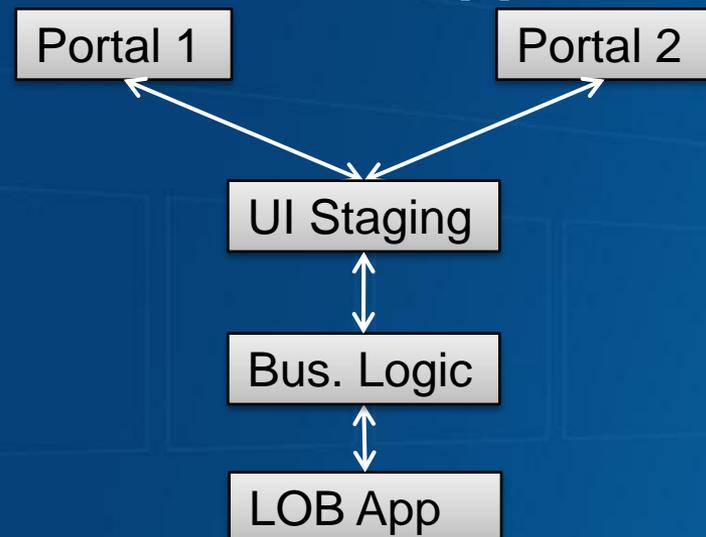
WSRP Deployment

Portal-to-Portal Approach



- Original proponents advocated this as a primary benefit
- “Heavy” portlets not good design
- Network load balancing issues
- Licensing issues

Service-Oriented Architecture Approach



- Effectively adding a “fourth tier”
 - “UI Staging” vs. “UI Display”
- Portlets deployed SOAP-style
- Portal products don’t play dual roles
- Middle tier reusable

Links, Search, Actions

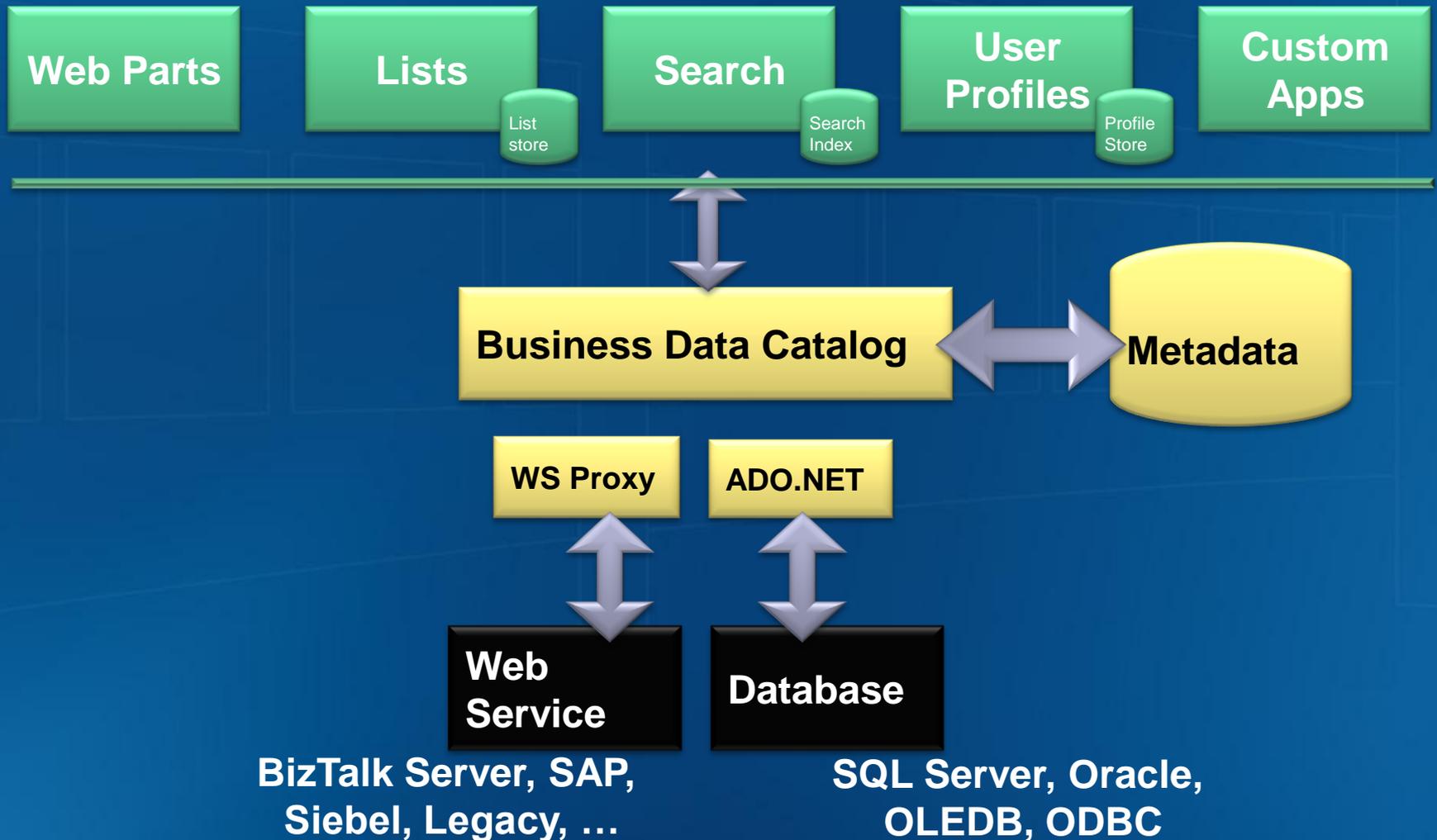
Search engine optimization (SEO also search optimization) is the process of editing and organizing the content on a webpage or across a website to increase its potential relevance to specific keywords on specific search engines and importantly ensuring that external links to the site are correctly titled and in abundance. This is done with the aim of achieving a higher organic search listing and thus increasing the volume of traffic from search engines.

Business Data Catalog (BDC)

- Integration of LoB applications
- Link SharePoint contents to applications
 - Display in your portal
 - Connect with (custom) actions
- Requirements for your apps?
 - Expose web services
 - Or access to database (OLEDB, ODBC)

Business Data Catalog (BDC)

Connects Office servers to business data



BDC and Search

- Integrate your LoB in Search
 - E.g. find account manager in Siebel
- Search database / Web service via BDC
 - Integrated with scopes and Search Center
 - Custom query-time trimming
- Security-trimmer
 - Don't show what I am not supposed to see!

BDC Application Definitions

- System – data source
- Entity – object in a system
- Method – operation on an object
- MethodInstance – way to use a Method
 - E.g. Finder, SpecificFinder, IDEnumerator
- Association – relationship between objects
- Metadata has two purposes
 - Describe a system's API
 - Give meaning to the API; make it easily usable

Application Definitions

Finder Methods

- Each entity needs to have methods
 - Finder and SpecificFinder
- **Finder** return collection of instances by filter
- **SpecificFinder** return single instance by key

```
<Entity Name="Customer">
  <Methods>
    <Method Name="GetCustomer">
      <MethodInstance Type="Finder" ... /> ...
    </Method>
  </Methods>
</Entity>
```

Application Definitions

Filters

- Control the data finders return
- Annotations on Method's input
- Declare which inputs users can override
- Various types: wildcard, exact match, ...
- Allow BDC securely set values, e.g., user token

```
<Method Name="GetCustomer">
  <FilterDescriptors>
    <FilterDescriptor Name="Region" Type="ExactMatch"/>
  </FilterDescriptors>
  <Parameters>
    <Parameter Name="Region" Direction="In">
      <TypeDescriptor ... AssociatedFilter="Region"/>
    ...
  </Method>
```

Application Definitions

Associations

- Relationships between entities
 - One or more source entities
 - One destination entity
- Is a method instance
- Takes source and returns a destination

```
<Association Name="CustomerToOrder"  
  AssociationMethodName="GetOrdersByCustomer">  
  <SourceEntity Name="Customer"/>  
  <DestinationEntity Name="Order"/>  
</Association>
```

Application Definitions

IDEnumerators And Search

- Full-text search any application
- BDC crawl protocol has two phases
 - ID Enumeration: Fetch all entity instance IDs
 - Detail fetch: Fetch details for each instance
- IDEnumerator returns the IDs
- SpecificFinder returns the details

```
<Method Name="GetCustomerIDs">  
  <Parameters> ... </Parameters>  
  <MethodInstance Type="IDEnumerator" ... />  
</Method>
```

Application Definitions

Actions And Writeback

- Link, don't replicate
- Scenarios so far are read-only
- For writes, link to InfoPath forms, web forms, or app UI
- Actions are links that travel everywhere with an entity
- Users can take action in context

```
<Entity>
  <Actions>
    <Action Name="Edit"
            Url="http://customerweb/edit.aspx"/>
  </Actions>
</Entity>
```

Application Definitions

AuthN, AuthZ, And Auditing

- Centralized security and auditing
- Two authentication patterns
 - Trusted subsystem
 - Impersonation / delegation
- Two authorization patterns
 - Mid-tier authorization
 - Backend authorization
- One place to audit
 - Log who accesses which data when

demo

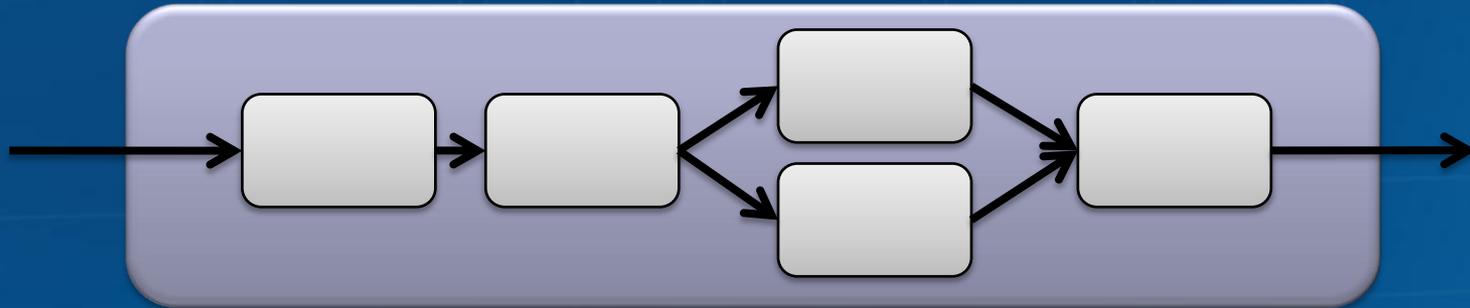
Business Data Catalog

Processes and Humans?

In philosophy and systems theory, basic processes, or logical homologies as they were termed by Ludwig von Bertalanffy, are unifying principles which operate in many different systemic contexts.

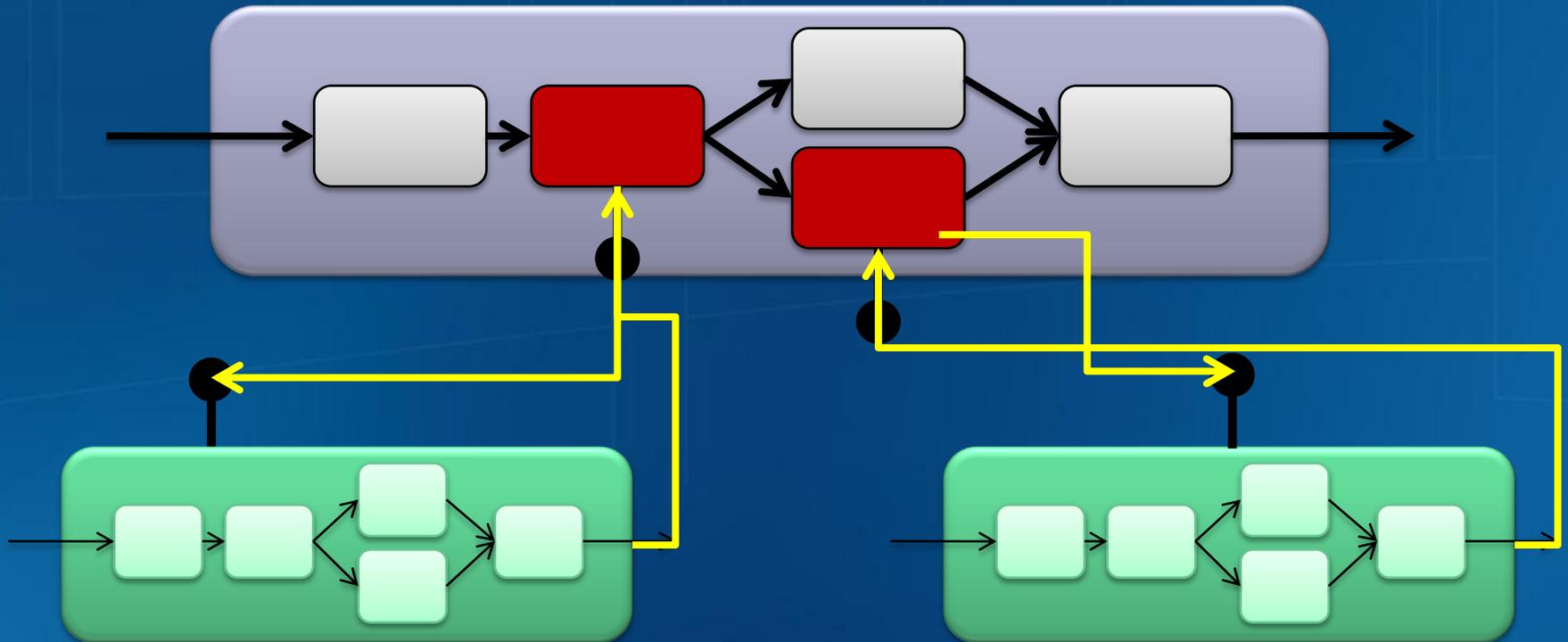
Processes and Humans?

- Core-processes rather stable
 - Don't change to often
 - Keep them „focused“, not too „generic“



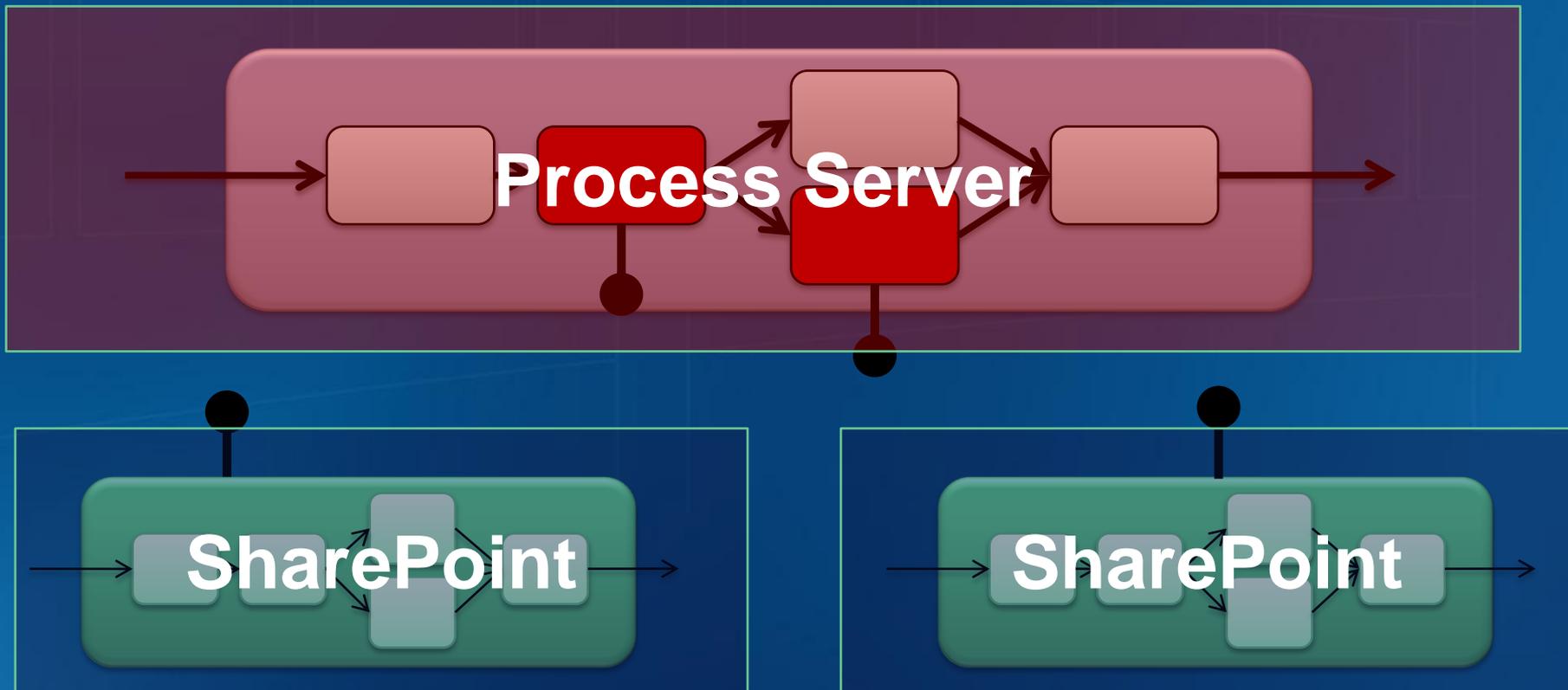
Processes and Humans?

- What if human input is needed?
 - Possible, directly? A Form!
 - Peer-processing? Collaboration Workflow!



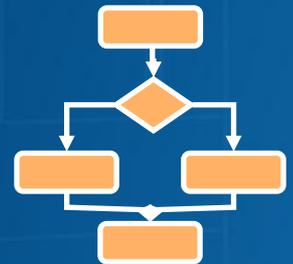
Processes and Humans?

- The right platform for the right purpose!
 - Combination is the truth;)

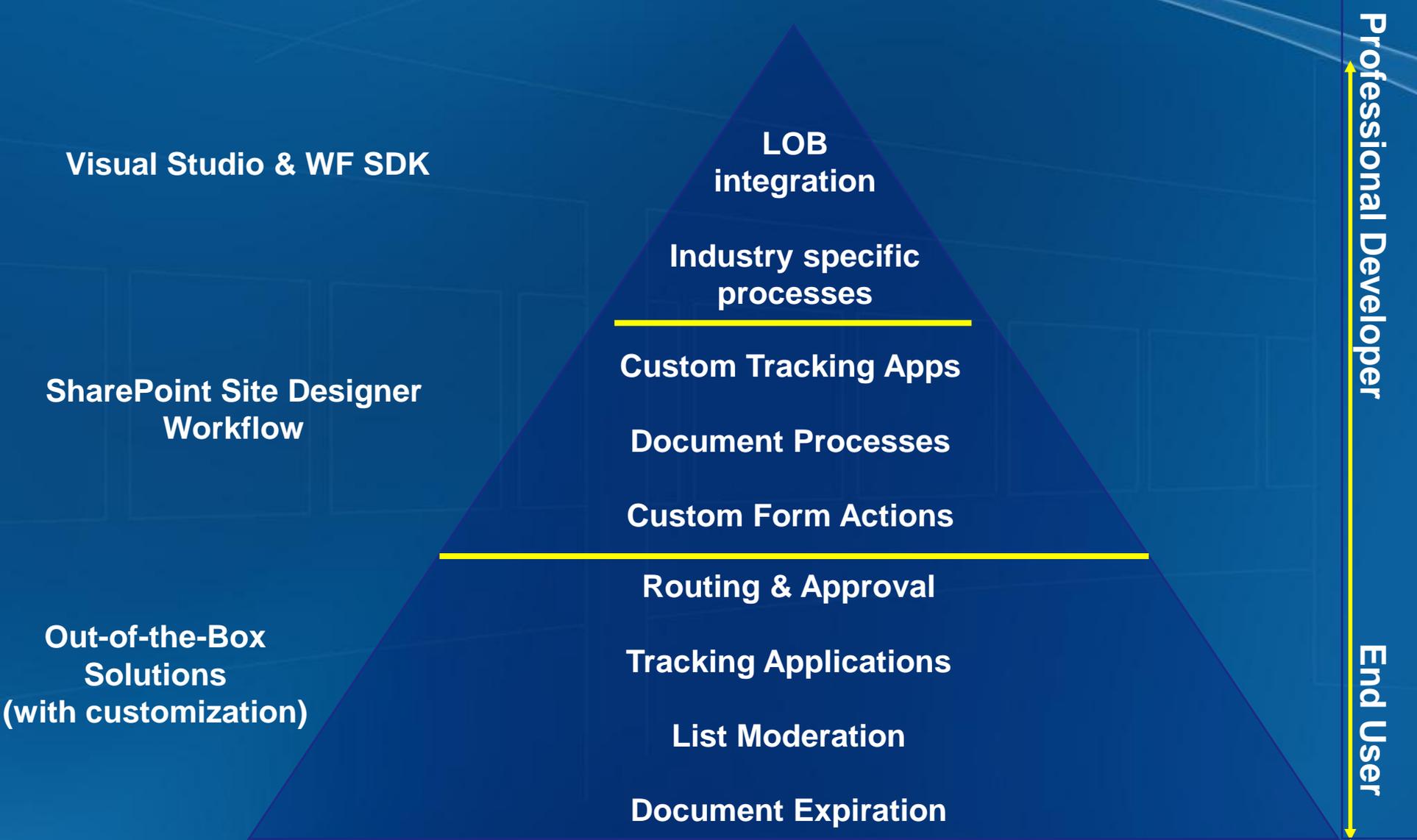


SharePoint & Workflows

- WSS supports workflows
 - List items, documents, content types
 - Started and completed by user actions
 - Workflow: create / update task items
- Workflows management
 - WSS task lists
 - Tracked through history lists
 - Allows users to see workflow progress

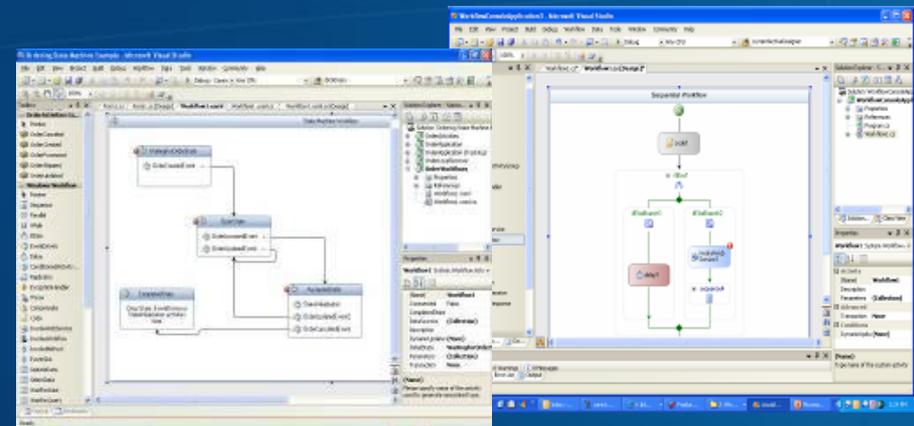


SharePoint and Workflows



Prepare Workflows for 4 C's

- Workflow Foundation custom activities
 - Build a domain specific workflow language
- What does it mean?
 - Activities tailored to your „formats“
 - Naming so that users understand
 - Use activities in ad-hoc workflows



demo

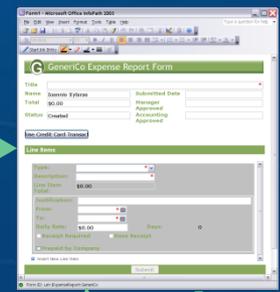
Ad-Hoc and Custom Workflows

Forms as „Input“ Provider

- Microsoft Office InfoPath
 - Designing forms, filling them out
 - Heavily based on XML
 - Client & browser-based
 - Forms server
- A „front-end“ for workflows
 - Submit info via web service
 - „fire-and-forget“ !!!

The screenshot displays the Microsoft Office InfoPath 2003 interface. The window title is 'Form1 - Microsoft Office InfoPath 2003'. The menu bar includes File, Edit, View, Insert, Format, Tools, Table, and Help. The toolbar shows various editing and navigation tools. The main content area displays a form titled 'GeneriCo Expense Report Form'. The form includes fields for Title, Name (Ioannis Xylaras), Submitted Date, Total (\$0.00), Manager, Status (Created), Accounting, and Approved. There is a checkbox for 'Use Credit Card Transac'. Below this is a 'Line Items' section with a table for adding items, including fields for Type, Description, Line Item, Total, Justification, From, To, Daily Rate (\$0.00), Days (0), Receipt Required, Have Receipt, and Prepaid by Company. A 'Submit' button is located at the bottom right of the form area. The status bar at the bottom indicates 'Form ID: urn:ExpenseReport:GeneriCo'.

Unit-Of-Work Pattern



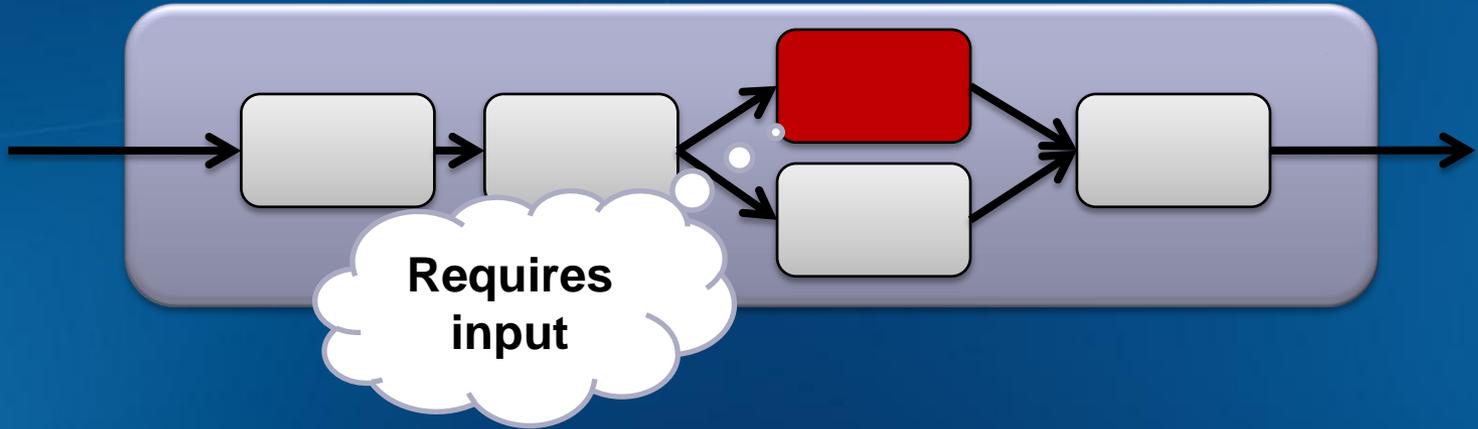
Not more...
and not less;)

Contains XML-
schema of
Submit Work

Get Unit Of Work

Submit Work

Web Service Facade



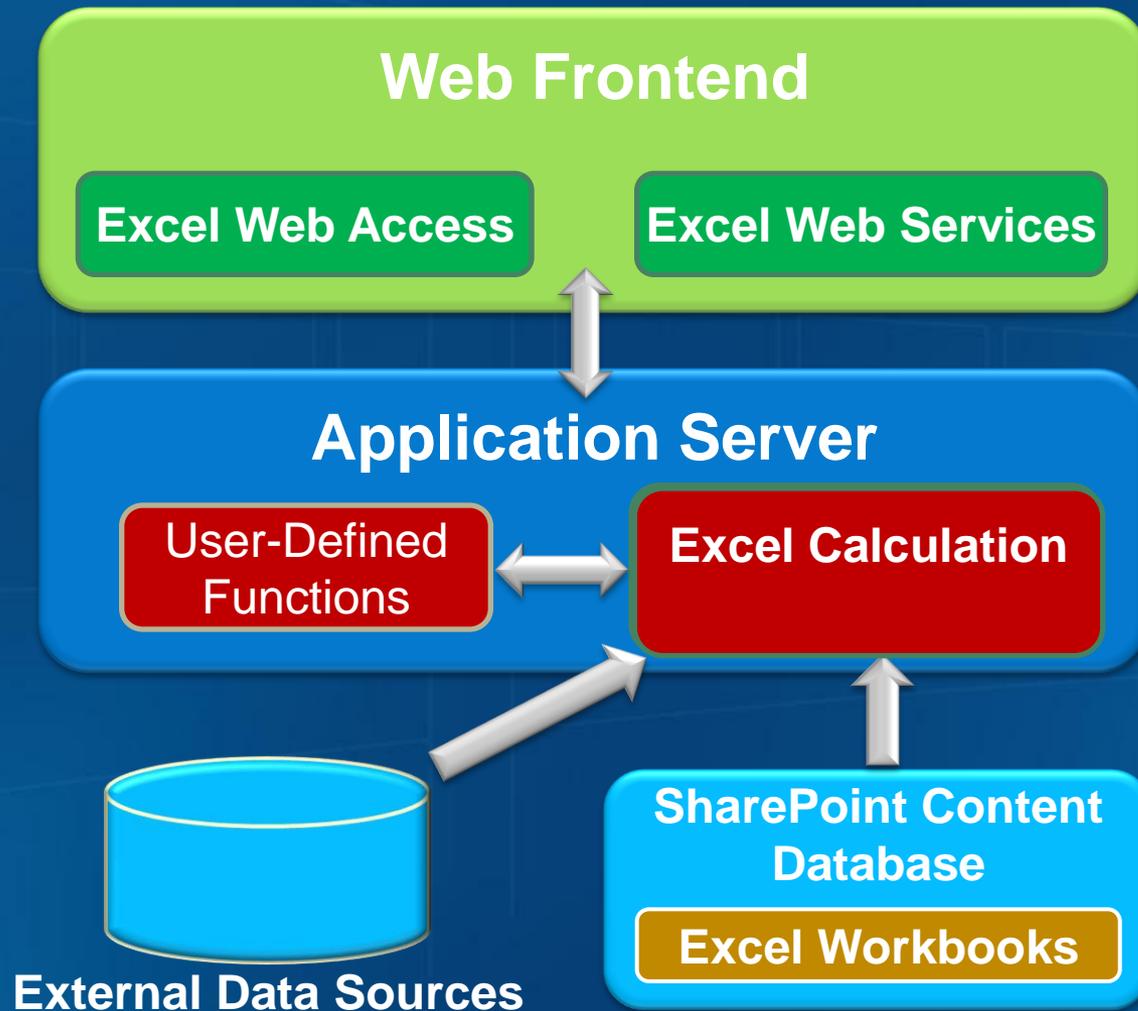
demo

InfoPath as Front-End for Workflows

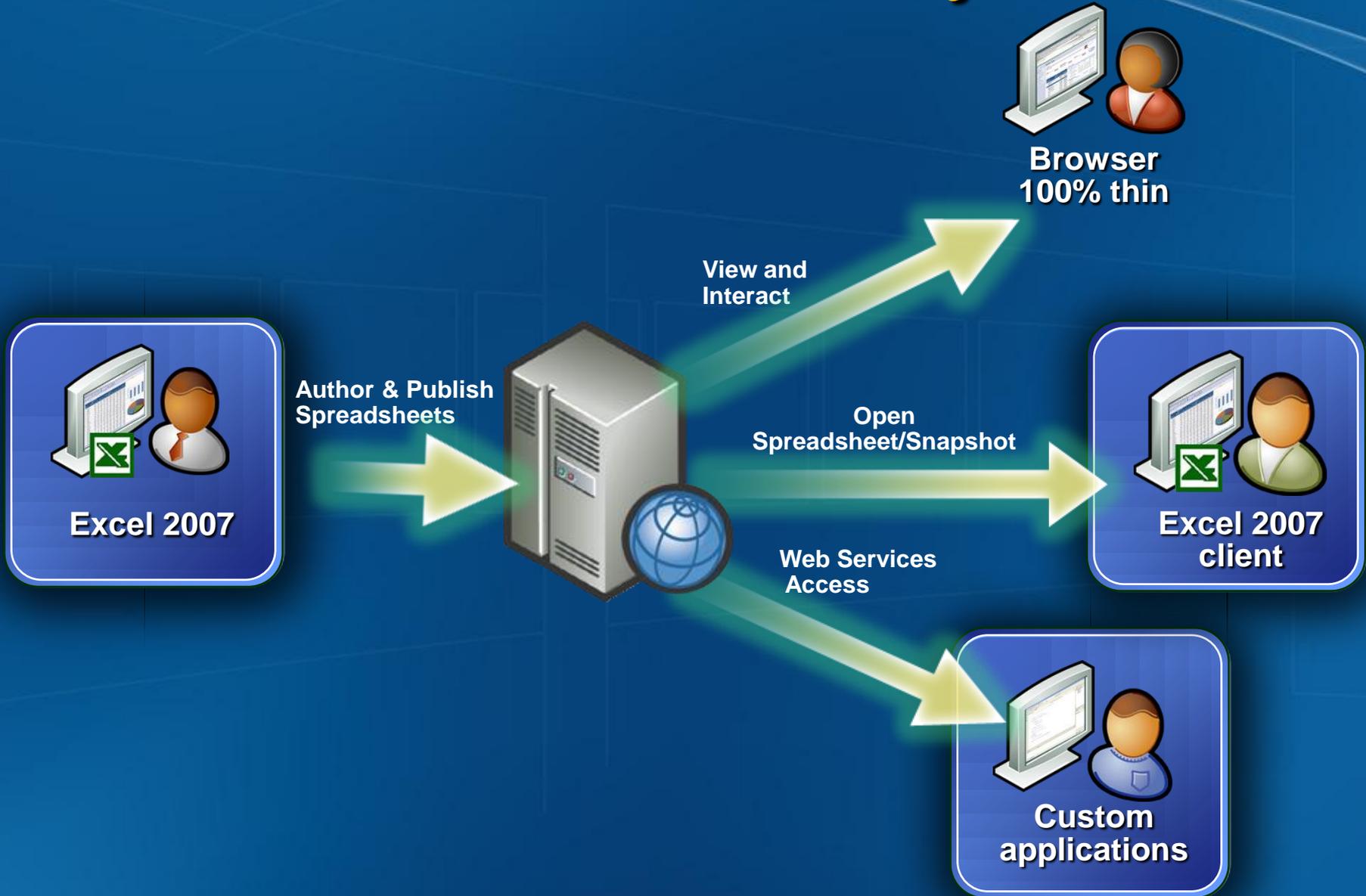
Human-based Computation

In computer science, **human-based computation** is a technique when a computational process performs its function via outsourcing certain steps to humans (Kosorukoff, 2001). This approach leverages differences in abilities and alternative costs between humans and computer agents to achieve symbiotic human-computer interaction.

SharePoint Excel Services



Excel Services Life-Cycle



demo

Out-source computation with Excel Services

Get Info out of the Mash-Up

- How get info out of social platform?
- Extend web services
 - Provide access to contents of social platforms
- Work with formats
 - XML, Office Open XML, ODF etc.

demo

Scenario for extending Web Services

SharePoint – The Big Picture

SUMMARY, WRAP-UP

2007 Office system

Clients

Browsers

RSS
Clients

Mobile
Devices

SOAP
Clients

Word, Excel,
PowerPoint
editors

Outlook,
Groove
Collab.

InfoPath,
Word
forms

Excel,
Visio,
Access BI

Project

XML,
Web services

Applications/Portals

Collaboration

Enterprise
Content
Management

People and
Personalization

Search

Business
Process
Integration

Business
Intelligence

Project
Management

SharePoint Designer

Visual Studio

Development Tools

Core Workspace Services

Storage

Security

Management

Topology

Site Model

APIs

.NET Framework 2.0 & 3.0

ASP.NET 2.0

ADO.NET 2.0

Workflow Foundation

Data and Business Processes

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Your potential. Our passion.[™]