



IBM Software Group

Application Transformation

mit

IBM WebSphere Host Access Transformation Services
(HATS) V6

15. Februar 2007

WebSphere software



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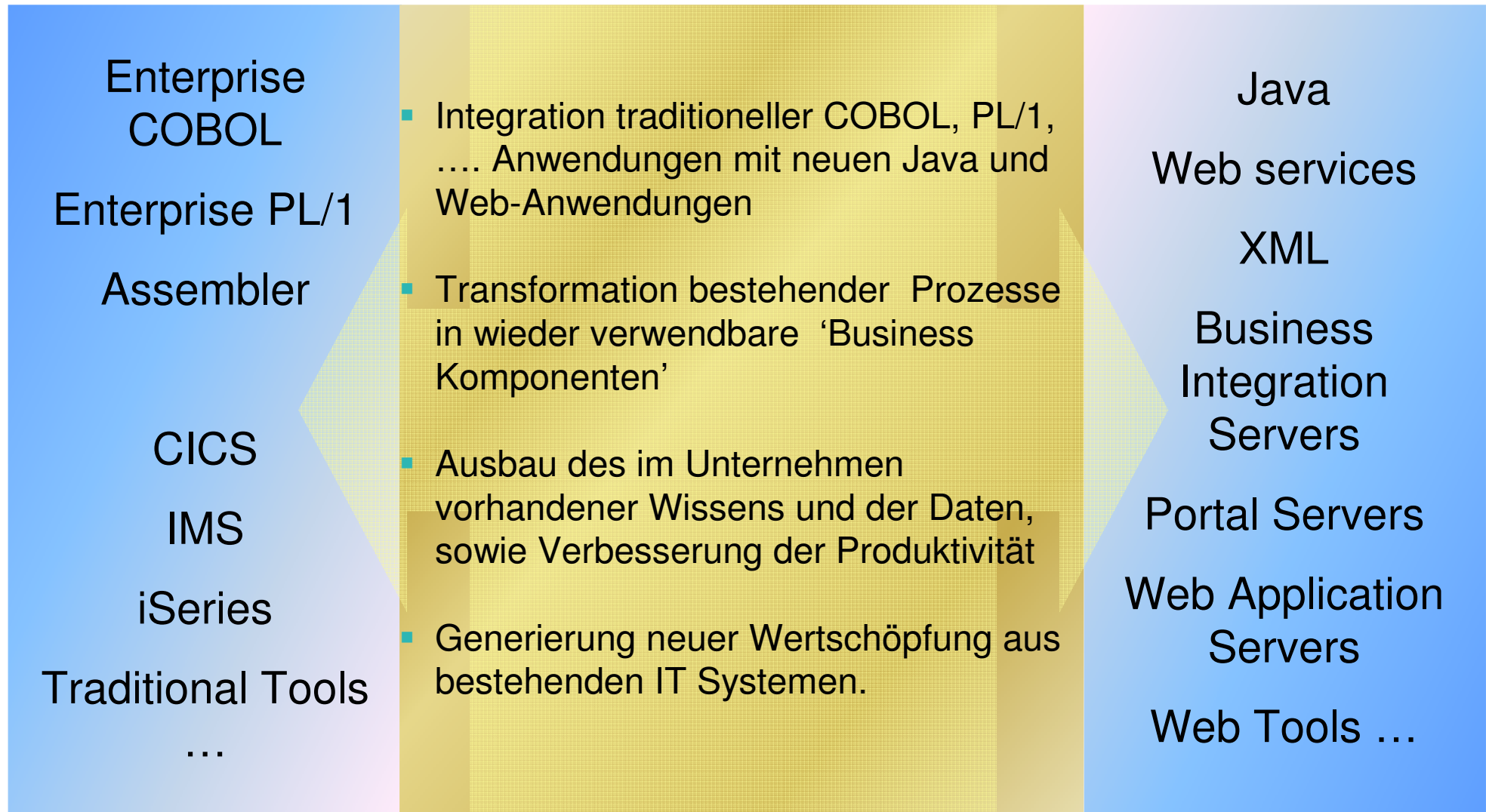
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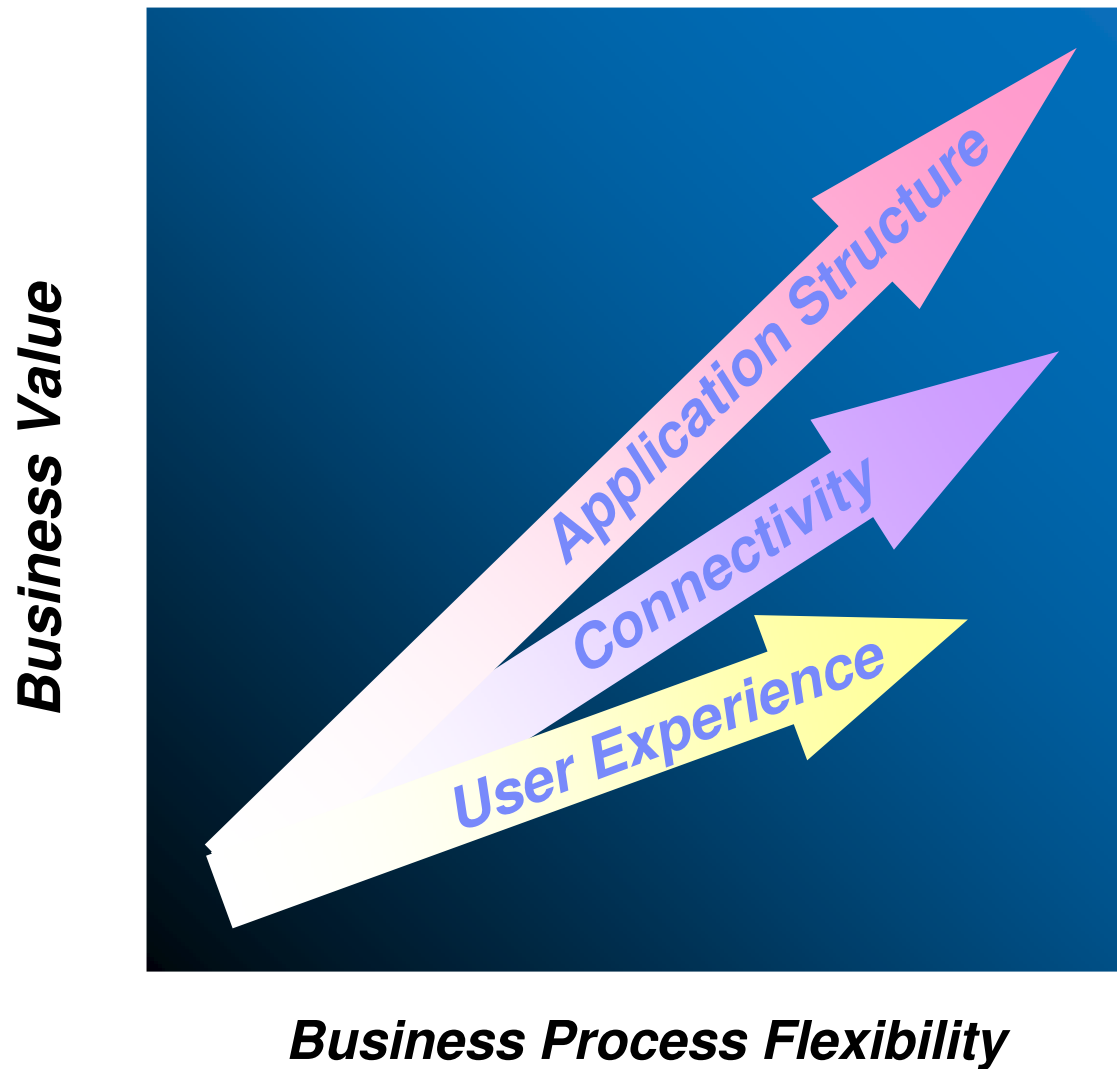
Agenda

1**Anwendungs-Modernisierung – Wie und Warum ?****2****Was ist eigentlich HATS und wie funktioniert es ?****3****Zusammenfassung und Fragen**

Anwendungen - Transformation... Warum?



Drei Methoden der Anwendungen -Transformation

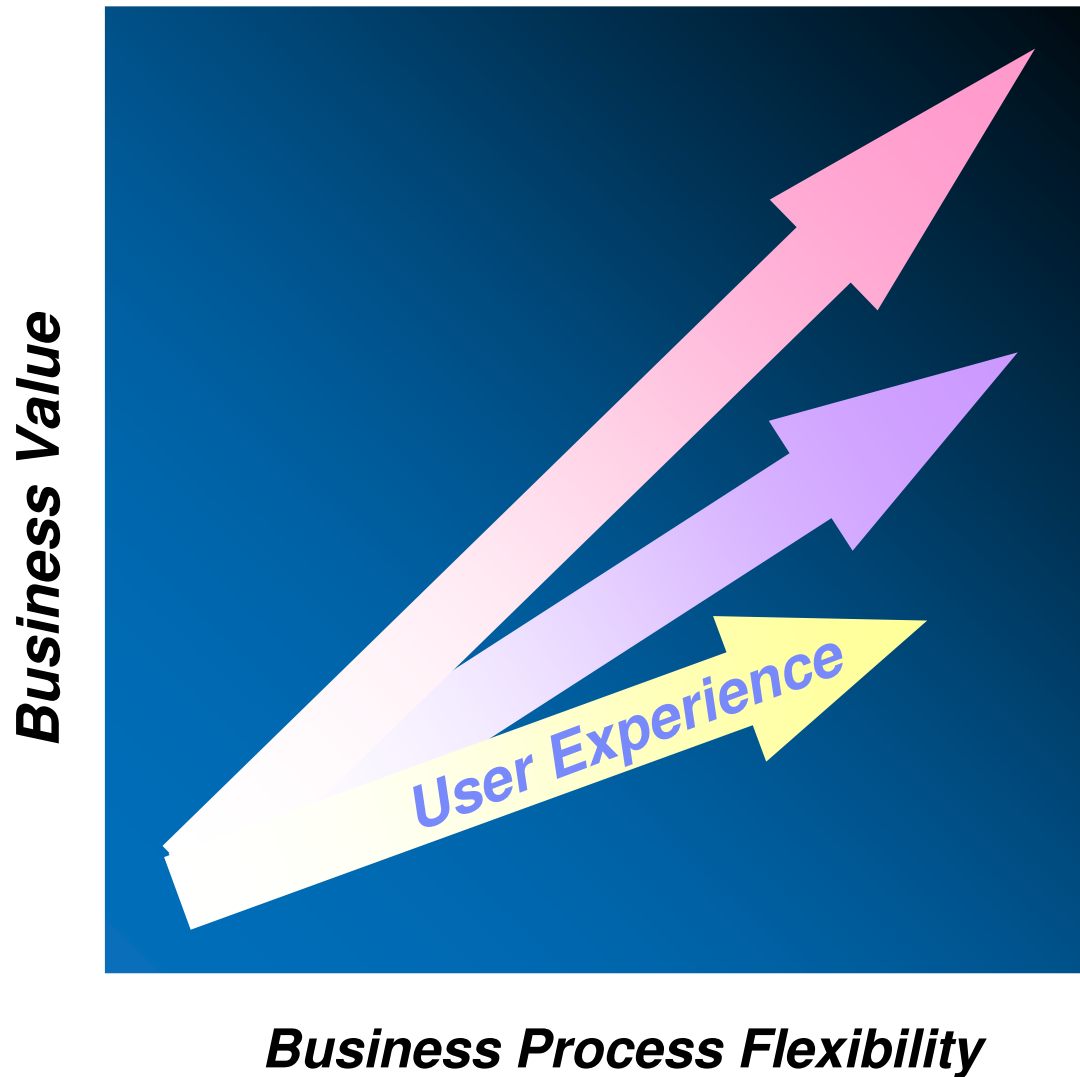


Transformation der Anwendungs-Struktur zur Erreichung einer größeren Flexibilität.
Erstellung von differenzierten Lösungen zur hochwertigeren Kunden und Partner Integration.

Transformation durch Einbindung.
Entwicklung von Kunden-, Partner- und Lieferanten Beziehungen.

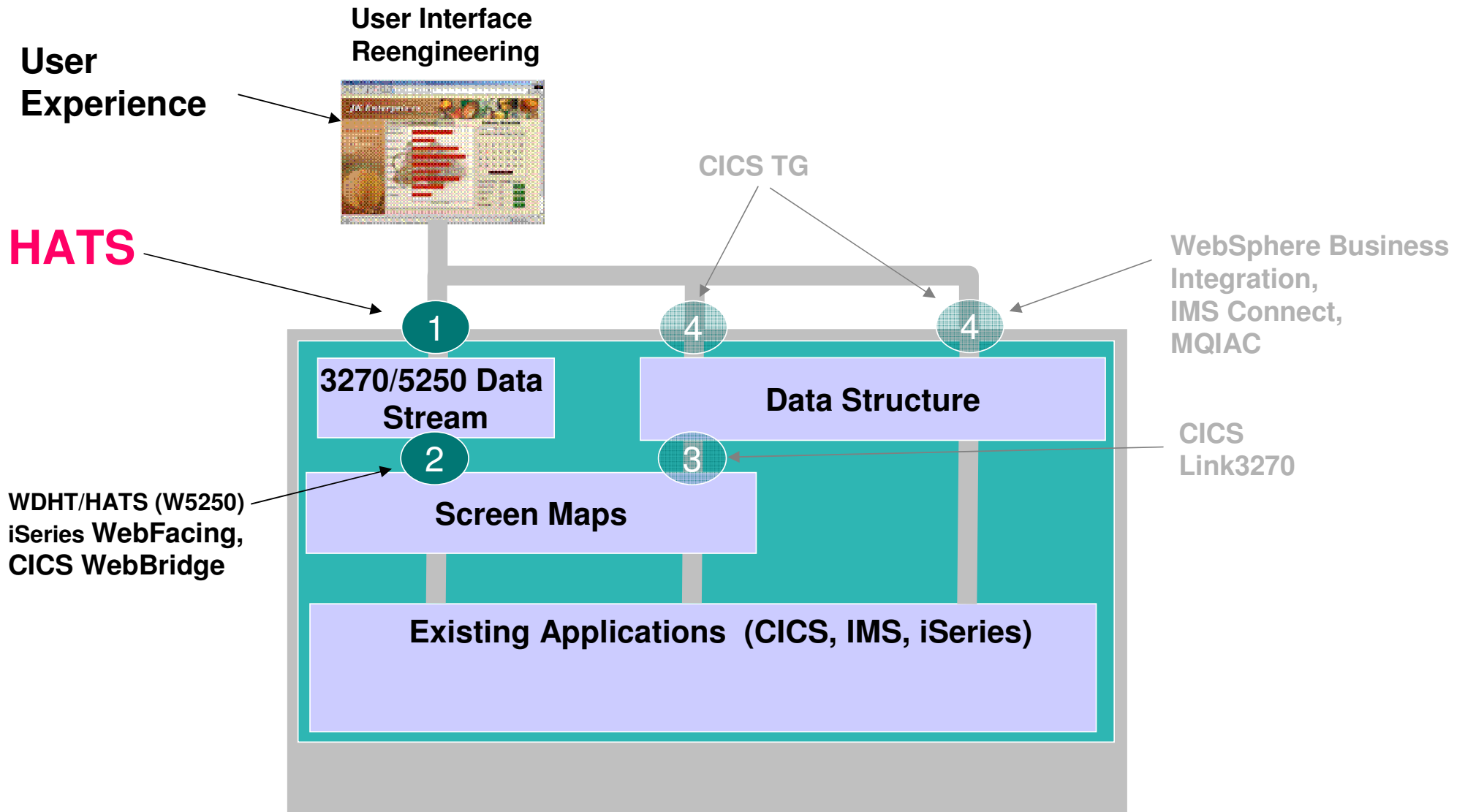
Transformation des Benutzer-Schnittstelle.
Schneller ROI.

Transformation der 'User Experience'



- Schneller ROI
- Erhöht die Produktivität der Benutzer und reduziert die Trainingskosten
- Ermöglicht die Generierung neuer Arbeitsabläufe
- Erweitert das Anwenderspektrum
- Integration der traditionellen Anwendungen in Unternehmens-Portale
- Reduziert die Entwicklungskosten

Ansatzpunkte für Transformation



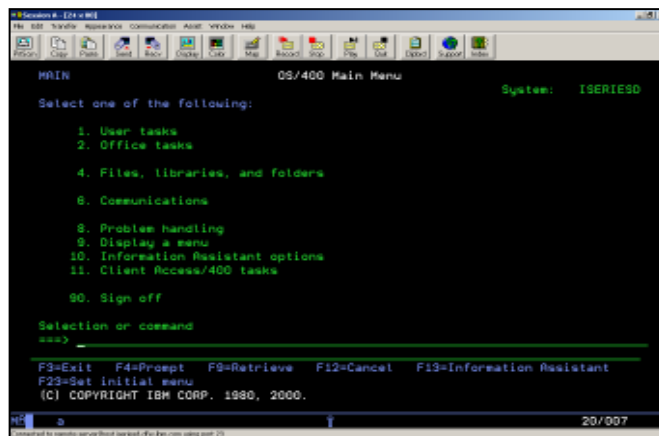


Was ist eigentlich HATS und wie funktioniert es?

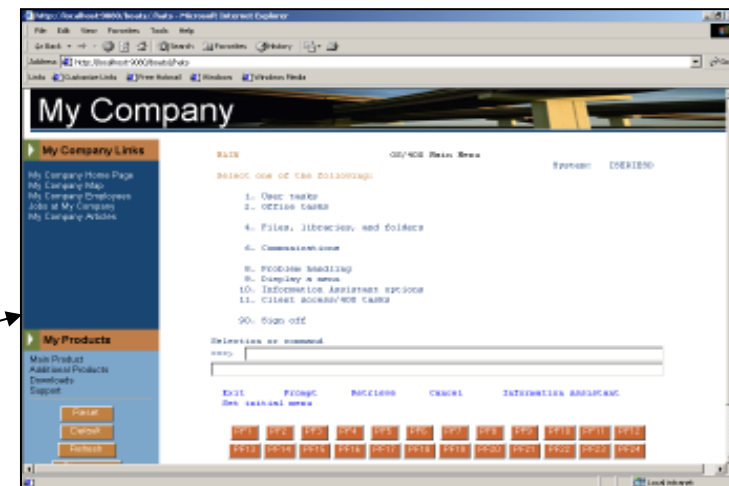


Was ist Host Access Transformation Services (HATS)?

- Eine regel-basierte Web-to-Host Umsetzung....
- Die neu gestalteten Zugriff auf eine oder mehrere Anwendungen bietet...
- Und dynamisch ein neues HTML-Interface erzeugt....
- Und dadurch die Nutzbarkeit und Produktivität der bestehenden Anwendungen wesentlich erhöht.

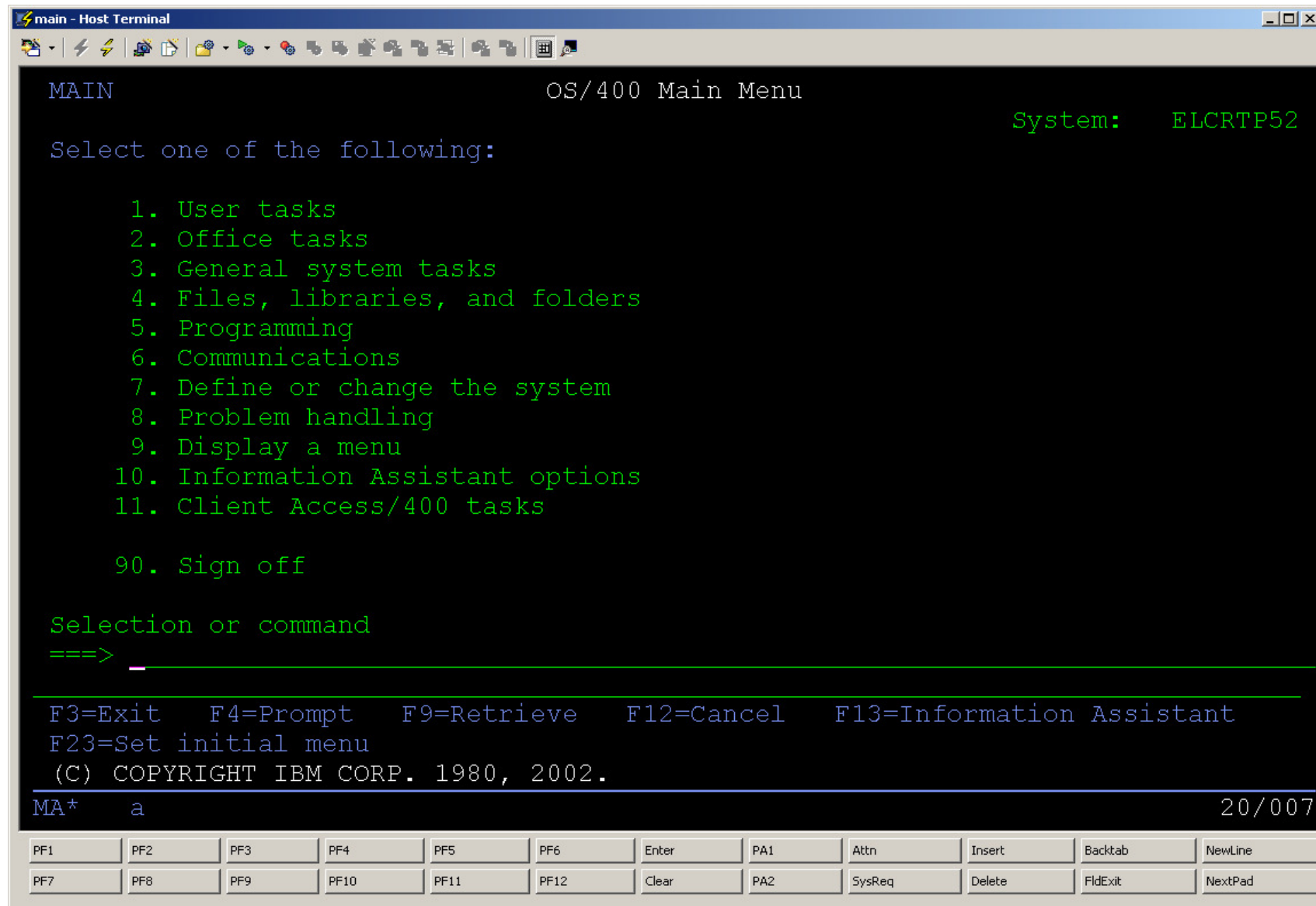


Web Browser



WebSphere Application Server

Traditioneller "Green Screen"



```
main - Host Terminal
MAIN OS/400 Main Menu System: ELCRTP52
Select one of the following:
1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
10. Information Assistant options
11. Client Access/400 tasks
90. Sign off
Selection or command
===> _
F3=Exit F4=Prompt F9=Retrieve F12=Cancel F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 2002.
MA* a 20/007
```

PF1	PF2	PF3	PF4	PF5	PF6	Enter	PA1	Attn	Insert	Backtab	NewLine
PF7	PF8	PF9	PF10	PF11	PF12	Clear	PA2	SysReq	Delete	FldExit	NextPad

HATS Transformation mit den Standardregeln

h7_demo01 - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Address http://localhost:9081/h7_demo01/entry Go

VSE AG

Links:
[Homepage](#)
[Organisation](#)
[Mitarbeiter](#)
[Jobs](#)

Produkte:
[Hauptprodukt](#)
[Downloads](#)
[Support](#)



Zurücksetzen
Standard
Aktualisieren
Trennen
Tastatur ausschalten

MAIN i5/OS Main Menu

System: ISERIESD

Select one of the following:

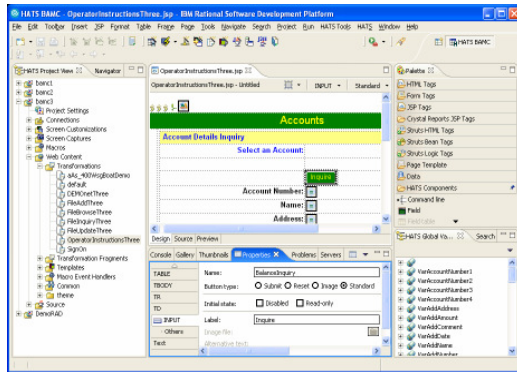
- [1. User tasks](#)
- [2. Office tasks](#)
- [4. Files, libraries, and folders](#)
- [6. Communications](#)
- [8. Problem handling](#)
- [9. Display a menu](#)
- [10. Information Assistant options](#)
- [11. iSeries Access tasks](#)
- [90. Sign off](#)

Selection or command
====>

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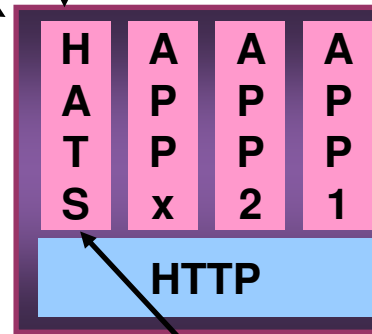
HATS Architektur - Überblick I



Rational und HATS Studio (Developer)

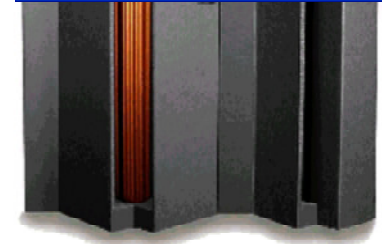
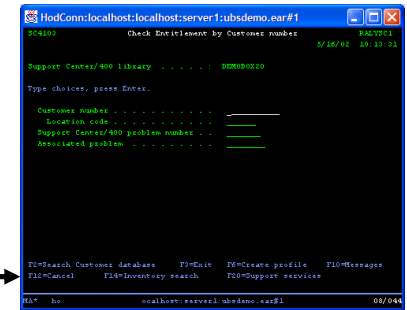
Transfer HATS Project .ear or .war file to WAS or WP

TN3270



WAS or WP

on zSeries
iSeries
pSeries
or xSeries



Host

HTTP



Web Browser (Client)

...die Produktivität der bestehenden Anwendungen erhöht

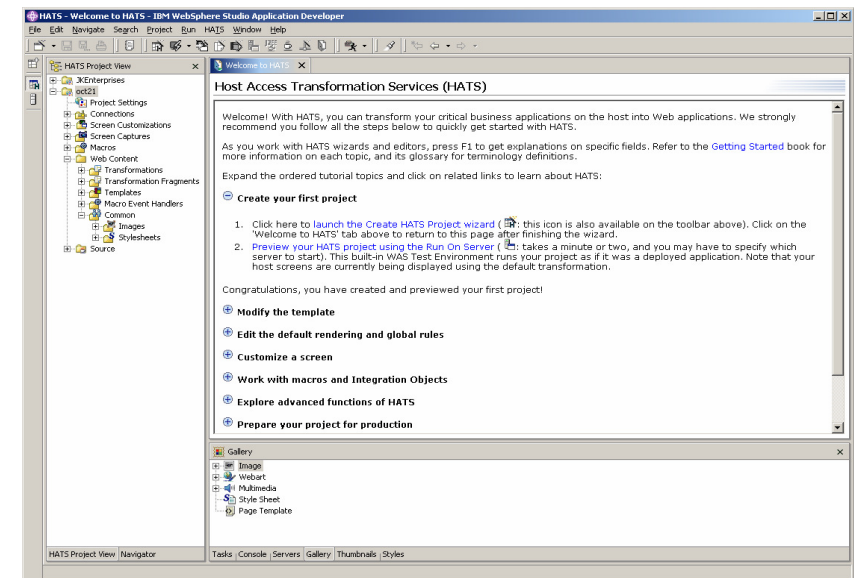
- Makros & Globale Variable
 - ▶ Schirme überspringen, kombinieren, aufteilen
 - ▶ Daten für den Nutzer eingeben
 - ▶ Eingaben als Globale Variable speichern; Eingabefelder vorab füllen
- Masken anpassen
 - ▶ Hinzufügen von Buttons, Hot-Links, Drop-down Menüs, Listen gültiger Werte
 - ▶ Modifizieren von Grafiken, Fonts, Farben und Gestaltung
- Tabbed Folders
 - ▶ Wizard-basiert
- Balken- und Liniendiagramme
 - ▶ Wizard-basiert
- Hinzufügen von Anwendungslogik
- Lokales Drucken
- Unterstützung nationaler Sprachen



Eingebunden in die WebSphere Architektur

- **Development: Integration ins Eclipse-basierte WebSphere Development**
 - ▶ HATS Studio ist ein Plug-in für den WebSphere Developer for zSeries, den Rational Application Developer V6 und WebSphere Development Studio Client for iSeries
 - Wizard-base
 - Vertraute Umgebung für Anwendungsentwickler
 - Industrie-Standard Entwicklungsumgebung

- **Runtime: WebSphere Application Server und WebSphere Portal Server**
 - HATS nutzt WebSphere Application Server (WAS) oder WebSphere Portal zur Ausführungszeit
 - HATS Studio erzeugt einen .ear File (oder .war File), der in den jeweiligen Server installiert wird
 - HATS bietet flexible Generierung von Host-Portlets



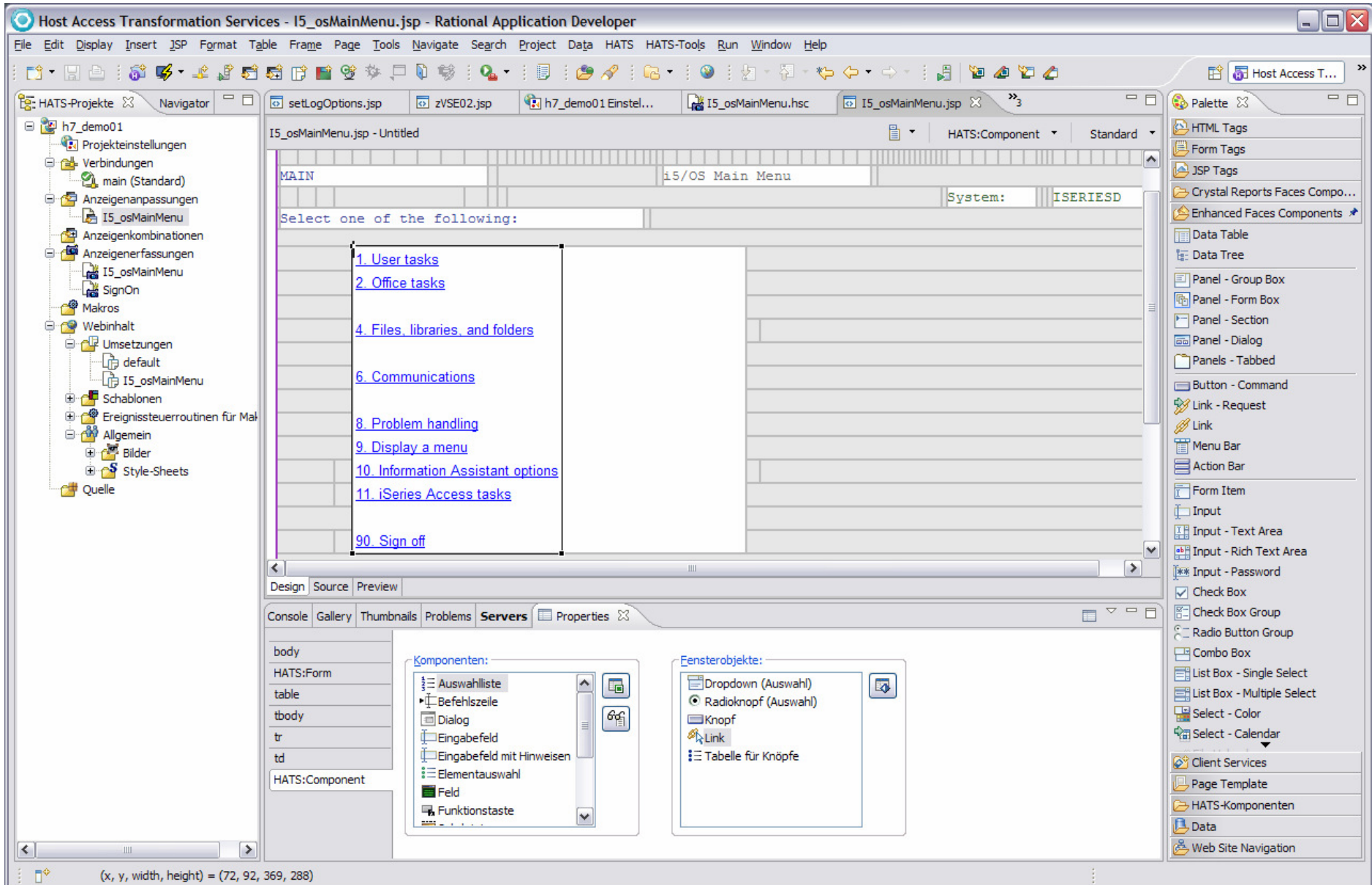
HATS Development und Deployment Produkte

Rational und WebSphere Development und Deployment für HATS

Develop and Test	Rational Software Architect	RSA	Rational-based Studios
	Rational Web Developer	RWD	
	Rational Application Developer	RAD	
	WebSphere Developer for zSeries	WDz	
	WebSphere Development Studio Client for iSeries	WDS <i>c</i>	
	WebSphere Development Studio Client Advanced Edition for iSeries	WDS <i>c</i> AE	
	Host Access Transformation Services	HATS	Plugin
Deploy	WebSphere Application Server	WAS	
	WebSphere Portal	WP	



HATS Studio



Definieren eigener Regeln

- HATS Studio enthält einfache Wizards, um zu definieren, wie Host-Komponenten dargestellt werden sollen
- Importieren des HTML-Codes von einer Web-Seite (keine Frames)
 - “Drag and drop” HTML Elemente für ein neues Template
- WebSphere Studio oder jeden “industry-standard” HTML-Editor für:
 - Logos, Graphics, Backgrounds, Web links und andere HTML Elemente
- Anpassungen werden als wieder verwendbare Regeln gespeichert, die für jede Host-Maske mit ähnlichen Anforderungen genutzt werden können
- Mit HATS kann man anwenden:
 - Einen individuellen Regelsatz für jede Host-Anwendung
 - Unterschiedliche Regelsätze für eine Host-Anwendung für unterschiedliche Benutzerkreise
 - Denselben Regelsatz für mehrere Host-Anwendungen



Host Components und Widgets

Host Komponenten

- **HATS Objekte zuständig für das Erkennen von Elementen des Host Screens :**
Command-Lines, Function-Keys, Selektions-Listen, etc...

Widgets

- **HATS Objekte zuständig für das Erstellen des HTML outputs für **Host Komponenten in der HATS Darstellung:****
Buttons, Drop-down Menüs, Tabellen, etc...



Transformations Beispiel:

Zum Beispiel kann die, Function-Key **Host Komponente**

- in einen HTML LINK **Widget**
- *oder*
- in einen HTML Button **Widget** transformiert werden

The diagram shows the transformation of a function key from a terminal screen to a web browser interface. A red box highlights the text 'F3=Exit' in the terminal, with red arrows pointing to the 'Exit' button in the browser interface and the 'F3=Exit' link in the transformed HTML output.

Terminal Screen (Original):

```
Selection or command
===>
F3=Exit    F4=Prompt
F23=Set initial menu
(C) COPYRIGHT IBM CORP.
```

Browser Interface (Transformed):

Selection or command
 ===>

(C) COPYRIGHT IBM CORP. 1980, 2002.

Transformed HTML Output:

```
F3=Exit    F4=Prompt    F9=Retrieve
F16=System Main menu
(C) COPYRIGHT IBM CORP. 1980, 2005.
```

Kalender Widget

- Vereinfacht die Eingabe des Datums in ein Eingabefeld
- Das Datumsformat ist konfigurierbar

FILE UPDATE

NUMBER: 000000

NAME: J. P. GEDDIE

ADDRESS: NEW MUNNY LANE

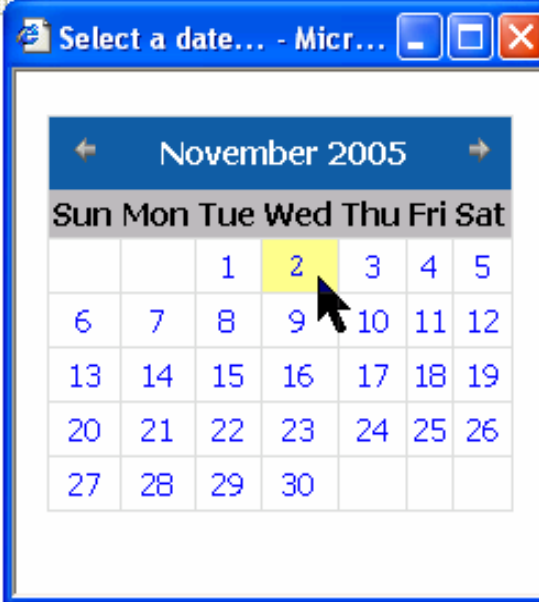
PHONE: 901-2468

DATE: 11 02 05

AMOUNT: \$9428.00

COMMENT: DEPOSIT

CHANGE FIELDS AND



November 2005						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			



HATS – Individuelle Anpassung

JK Enterprises Links

- Home Page
- Map
- Employees
- Enterprises
- Articles

Products

- Main Product
- Additional Products
- Downloads
- Support

Inventory Graph

Type	Sales Price
Bear, Koala	25.0
Dog, Dachshund	16.0
Cat, Manx	14.0
Cat, Persian	21.0
Cat, Siamese	22.0
Monkey	20.0
Wallaby	23.0
Manatee	24.0
Wombat	15.0

Submit Order

Product number:

Quantity:

Date required:

To see the inventory count for this product, click the **Check Inventory** button.

Select a date... - Microsoft I...

October 2003

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

HATS - Globale Regeln und Liste gültiger Werte

Welcome to JK Enterprises - Microsoft Internet Explorer

Address: <http://localhost:9080/oct21/entry>

JK Enterprises

JK Enterprises Links

- Home Page
- Map
- Employees
- Enterprises
- Articles

Products

- Main Product
- Additional Products
- Downloads
- Support

Search Request

To request a search, type the search data and press E

Corporate and Personal Directories

Name

Birthdate

Node

User ID

Extension

Job Responsibilities . .

Location

*any field (Name Value) .

*any field (Name Value) .

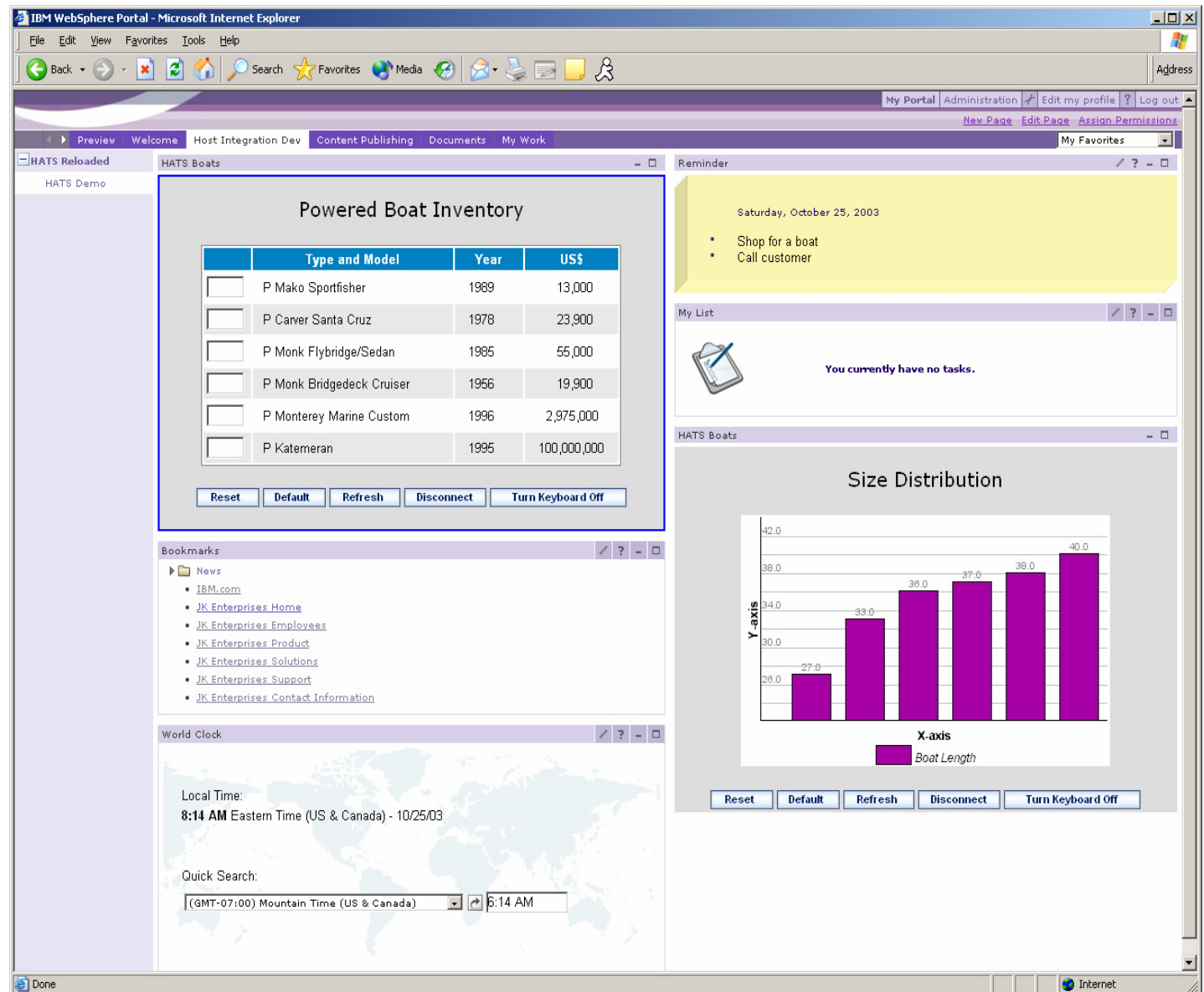
Enter command:

[Help](#) | [Set 2](#) | [Exit](#) | [Profile](#) | [Refresh](#) | [Fuzzy](#) | [Forward](#) | [Command](#) | [Actions](#) | [Dist.list](#) | [Cancel](#)

Done Local intranet

HATS - Integration mit WebSphere Portal

- HATS V6 generiert Portlets für den WebSphere Portal Server
- HATS Portlets unterstützen:
 - Click-to-Action
 - Cooperative Portlets
 - Credential Vault
 - Single Sign-On



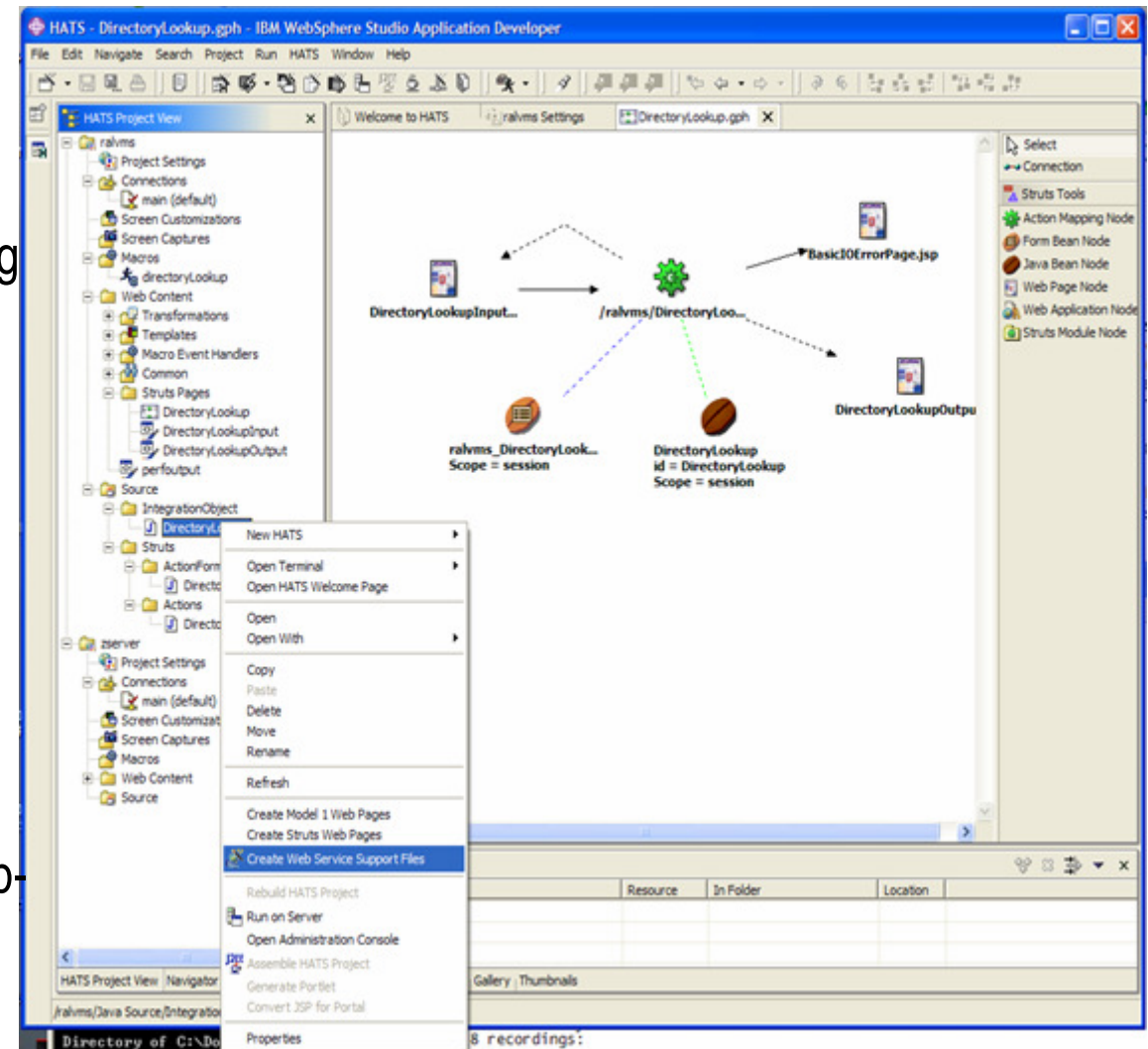
The screenshot displays the IBM WebSphere Portal interface in Microsoft Internet Explorer. The main content area features a 'Powered Boat Inventory' table with columns for 'Type and Model', 'Year', and 'US\$'. Below the table are buttons for 'Reset', 'Default', 'Refresh', 'Disconnect', and 'Turn Keyboard Off'. To the right, a 'Reminder' section shows the date 'Saturday, October 25, 2003' and a list of tasks: 'Shop for a boat' and 'Call customer'. Below the reminder is a 'My List' section with the message 'You currently have no tasks.' and a 'HATS Boats' section containing a 'Size Distribution' bar chart. The chart shows boat lengths on the X-axis (27.0, 33.0, 36.0, 37.0, 38.0, 40.0) and a Y-axis ranging from 26.0 to 42.0. The legend indicates 'Boat Length'. At the bottom of the chart are buttons for 'Reset', 'Default', 'Refresh', 'Disconnect', and 'Turn Keyboard Off'. The left sidebar contains a 'Bookmarks' section with links to IBM.com and various JK Enterprises pages, and a 'World Clock' section showing the local time as 8:14 AM Eastern Time (US & Canada) on 10/25/03.

Type and Model	Year	US\$
P Mako Sportfisher	1989	13,000
P Carver Santa Cruz	1978	23,900
P Monk Flybridge/Sedan	1985	55,000
P Monk Bridgedeck Cruiser	1956	19,900
P Monterey Marine Custom	1996	2,975,000
P Katameran	1995	100,000,000

Boat Length	Value
27.0	27.0
33.0	33.0
36.0	36.0
37.0	37.0
38.0	38.0
40.0	40.0

A2A (Application to Application) Integration

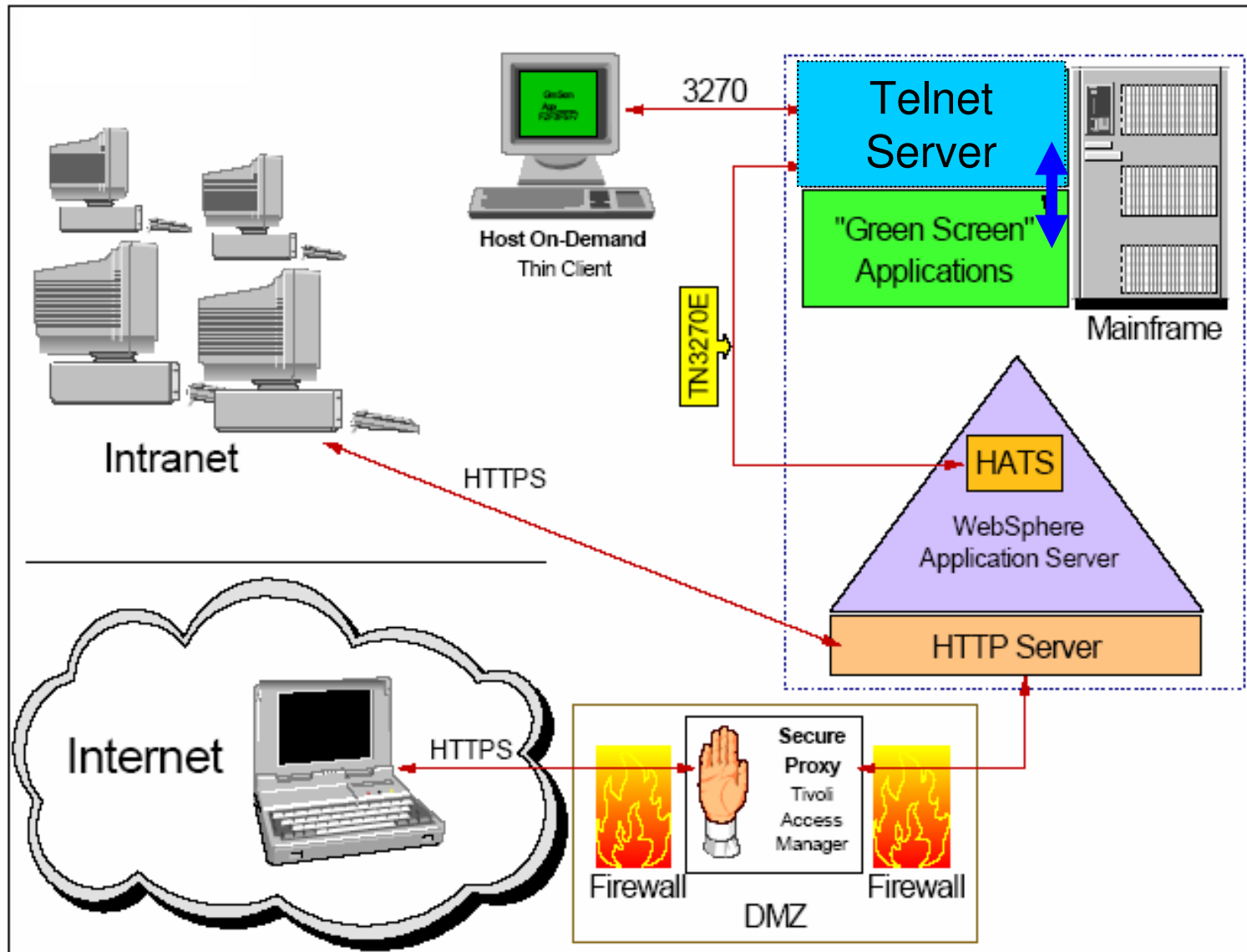
- Web-Services auf Basis programmierter Interaktion mit einer oder mehreren Host-Anwendungen.
 - Erzeugung von Java Beans und EJBs aus Makros, die durch Host-Anwendung navigieren
 - Hinzufügen von SOAP und WSDL Komponenten im WebSphere/Rational Application Development
- Unterstützt Session Pooling
 - Vorbereitete, “ready-to-use” Host-Verbindungen
- Unterstützt Entwicklung mit Struts
 - Entwicklung von JSP-basierten Web-Transaktionen mit Struts



HATS - Web Express Logon (Single Sign-On)

- HATS unterstützt “single sign-on”, d.h. erlaubt einem User sich in einem oder mehreren Host-Systemen anzumelden und dabei nur einmal seine Credentials einzugeben.
- Erhöhte Productivität
 - Credentials nur einmal angefordert
 - User muss sich nicht mehrere UserIDs/Passwörter merken
 - Weniger Anrufe “Habe mein Passwort vergessen”
- Sicher
 - Arbeitet zusammen mit existierenden Sicherheitsanwendungen wie z.B. Tivoli Access Manager
 - Erhält “network security credentials” und holt Host UserID/Passwort
- Erweiterbar um individuelle Umgebungen zu unterstützen

Architektur Überblick II



HATS – Einsatzbereiche

1. Protokollswitch
 - Keine oder geringe Änderungen in der Darstellung
 - Geringe Funktionalitätsunterschiede aber neues Protokoll
HTTP anstatt Telnet

2. „GUI-Fizierung“
 - Leicht geänderte bis völlig neue Darstellung der Schirminhalte
 - Funktionserweiterungen
 - Integration, z.B. Portal

3. Neue Webanwendungen
 - Mit 3270 Bildschirm als Interface
 - Kein Bezug zur Hostanwendung für den Nutzer
 - z.B. Erstellen von Webservices aus Makros



... und wie kann es weitergehen?

Original 3270

Integrieren

Innovation

Verbessern

Neue Oberfläche

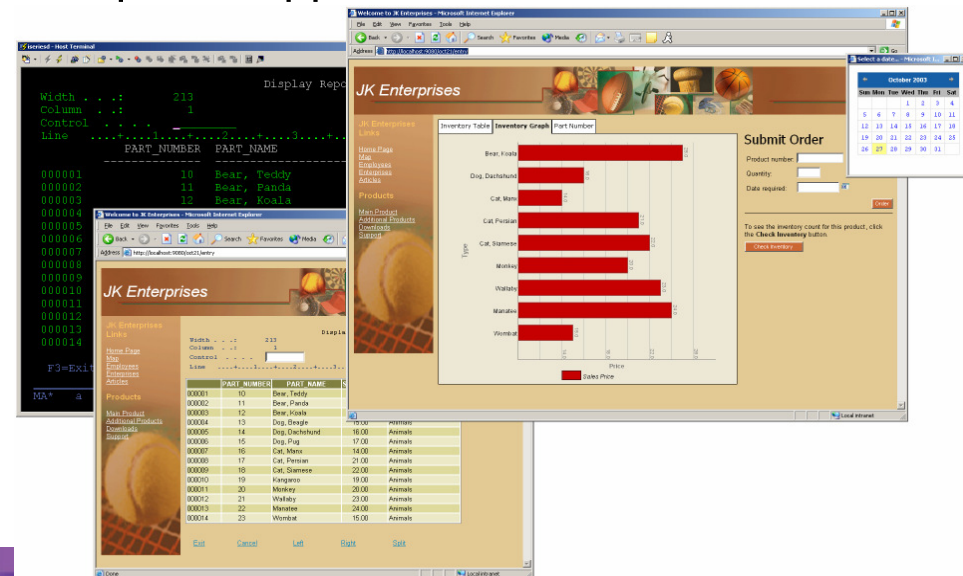
Extend

HATS - Zusammenfassung

- Host-Masken werden “im Fluge” in HTML umgesetzt
- Verbesserte Navigation durch Host-Anwendungen
- Kein Programm im Client (“Zero Footprint”)
- Geringe Programmierkenntnisse erforderlich
- Möglichkeit Masken und Daten aus mehreren Anwendungen zu kombinieren
- Nicht jede Maske muss angepasst werden
- Erzeugen von Web-Services aus Host-Transaktionen
- Nutzt Sicherheit und Skalierbarkeit des WebSphere Application Servers und des WebSphere Portal Servers

Für mehr Information gehe zu:

ibm.com/software/webservers/hats



The screenshot illustrates the HATS application in use. On the left, a terminal window shows a table of products with columns for Part Number and Part Name. The data is as follows:

Line	Part Number	Part Name
000001	10	Bear, Teddy
000002	11	Bear, Panda
000003	12	Bear, Kodia

On the right, a web browser window displays the 'JK Enterprises' website. The 'Inventory Table' shows a list of products with their prices:

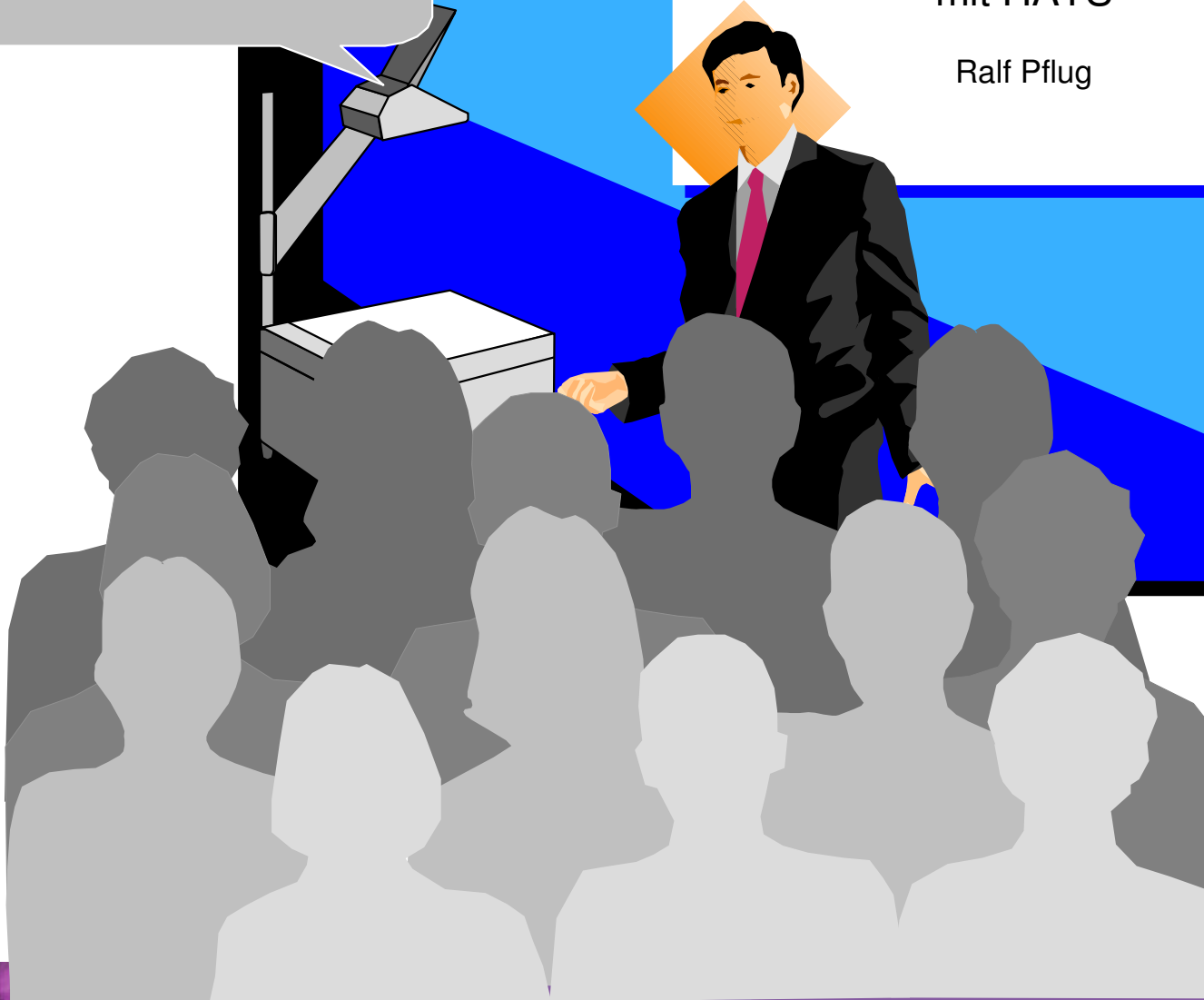
Part Number	Part Name	Price
000001	Bear, Teddy	10.00
000002	Bear, Panda	11.00
000003	Bear, Kodia	12.00
000004	Dog, Beagle	14.00
000005	Dog, Dackelhund	17.00
000006	Dog, Pug	18.00
000007	Cat, Manx	21.00
000008	Cat, Siamese	22.00
000009	Monkey	19.00
000010	Monkey	20.00
000011	Monkey	21.00
000012	Monkey	22.00
000013	Monkey	23.00
000014	Monkey	15.00

The web browser also shows a 'Submit Order' form with fields for Product number, Quantity, and Date required, and a 'Check Inventory' button.

Fragen !?

Anwendungs- modernisierung mit HATS

Ralf Pflug



References - HATS Internet home page

- HATS Internet home page

<http://www.ibm.com/software/webservers/hats/>

- InfoCenter

Accessed from the Library section at

<http://www.ibm.com/software/webservers/hats/library.html>

Full HATS Publications

HATS reference documentation

Technotes

Searchable

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HATS - Wo finde ich weitere Informationen?

IBM WebSphere Host Integration Solution Web Site

▸ <http://www.ibm.com/software/webservers/hostintegration/>

IBM WebSphere Host Integration - Customer Comments

▸ http://www.ibm.com/software/webservers/hi_customers/

IBM WebSphere Host Integration - Business Partners

▸ http://www.ibm.com/software/webservers/hi_partners

IBM WebSphere Host Integration - Case Studies

▸ http://www.ibm.com/software/webservers/hi_casestudies

IBM WebSphere Host Integration - Library (brochures, redbooks, white papers, presentations)

▸ <http://www.ibm.com/software/webservers/hostintegration/library.html>

IBM WebSphere Host Integration Demos

▸ <http://websphere.dfw.ibm.com/whidemo/>