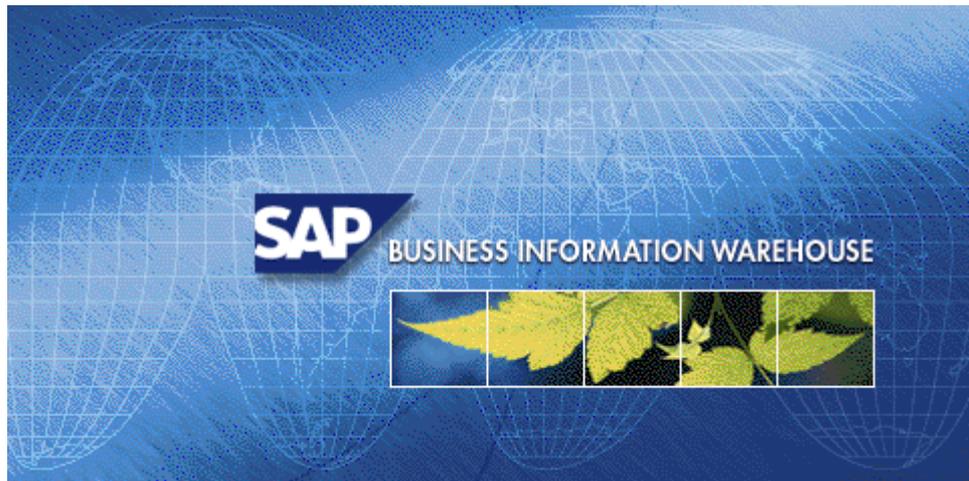




Web Reporting with ITS Server Templates

BUSINESS INFORMATION WAREHOUSE 2.0B



Version 1.0

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1 WARNING

Only use ITS Templates in 2.0B/2.1C projects where you definitely need interactive Charts, WEB GIS or WAP Reporting. ITS Templates cannot be migrated to BW 3.0. For Web Reporting you should always use Templates on the BW Server!

2 Introduction

This document describes how you can use templates based on ITS to carry out BW Web Reporting. Particular attention is paid to displaying interactive charts, maps and BW Web queries, on mobile telephones (cellular phones).

3 Glossary

WAP	Wireless Application Protocol Internet protocol for transferring pages to mobile telephones
ITS	Internet Transaction Server SAP component for connecting the BW system to the Internet
BusinessHTML	Scripting language that is evaluated on the ITS, and used to create HTML pages
HTML	Hypertext Markup Language Description language for Internet pages
WML	Wireless Markup Language Internet language standard for describing pages for mobile telephones

4 Web Reporting with Templates

To display BW content as HTML pages, query results are embedded into stored HTML pages called templates. In addition to the usual HTML commands (tags), these templates contain special commands that are replaced with HTML before the HTML pages are sent to the Web Browser.

With BW 2.0b, it is possible to store these templates in two locations:

BW Server Templates

- The templates are stored on the BW server
- BW commands resemble HTML tags
- Access is via URLs in the form http://ITS/scripts/wgate/webrfc/!?_function=...
- HTML is created exclusively on the BW server

ITS Templates

- The templates are stored in a special directory on the ITS
- BW commands are HTML function calls
- Access is via URLs in the form <http://ITS/scripts/wgate/bwwork/!/?~initialtemplate=...>
- HTML is created on the ITS

5 Technology

5.1 BW Server Templates

The templates are found exclusively on the BW server. When you choose the corresponding URL, the template is loaded and analyzed line by line. If the BW system finds special BW tags, it replaces them with normal HTML. These BW commands do not describe the data itself, but how the data is stored. The BW command for tables is only a few lines, and contains all the required parameters. The generated result, however, can be several pages long.

5.2 ITS Templates

The templates are stored as text files on the ITS. If you choose one of these templates using a URL, a special SAP component, that takes over the analysis of the template, is started on the ITS. At this point, you have the option of accessing a large number of predefined SAP functions, and of creating

your own standard commands, for a company header for example.

6 Creating an ITS Template (Example: Interactive Charts)

1. First, choose *Options* → *Technology* → *Templates on ITS* from the Web Publisher.

This ensures that the BW commands generated by the Web Publisher have the correct syntax.

2. Choose a view

Views form the basis for templates

3. Create a new element

4. Specify a name

The element has now been created, and linked with the corresponding view. If the BW command that represents this element is created at a later date, the element and view names will be transferred as parameters.

5. Choose your preferred HTML Editor, and create a HTML page according to the following pattern

```
<html>
<head>

<link rel=stylesheet HREF="/sap/its/mimes/webrfc/bw/BwReports.css"
TYPE="text/css">
<title>BW Web Report Interactive Chart</title>

</head>

<body>

`include(~service="bwinclude", ~name="bwmain.html", ~theme="")`

</body>
</html>
```

This HTML page is the basis for the template.

The **HTML command “link”**, tells the Web Browser that receives the page, that a style sheet file is stored on the Web Server under the specified path. This file contains information on how particular BW elements are displayed graphically (rendered). You can replace this file with one of your own files that has company-specific displays.

The **include command** tells the ITS, that the template file “bwmain.html” has to be downloaded from the service directory “bwinclude”. All BW-specific BusinessHTML functions are declared here. **Important: The include line must be inside the body tag.**

- Using the clipboard function, copy the element (an interactive chart, in this case) into the HTML page

Result:

```
<html>
<head>
<link rel=stylesheet HREF="/sap/its/mimes/webrfc/bw/BwReports.css"
TYPE="text/css">
<title>BW Web Report Interactive Chart </title>

</head>

<body>

`include(~service="bwinclude", ~name="bwmain.html", ~theme="")`

`BWRRenderChartS("VWBID='6CWFOZNQ9K7WICIPVAOKHI5PQ'
IWBID='6CWFOZNQ9K7WICIPVAOKHI5PQ' ITEMID='chartinteractive'
ITEM='chartinteractivexx' DATA_PROVIDER='vlxx' VIEWID='v1' WITHMAP='1'
WITHCONTEXTMENU='1' STATEFULL='0' FILTERSERIE='0'" )`

</body>
</html>
```

The BusinessHTML function “BWRRenderChartS” that is defined in the include file “bwmain.html”, is executed by the ITS during analysis, and creates the corresponding HTML (an interactive chart, in this case).

An SAP BusinessHTML function is created instead of the object tag known in the WebRFC. With interactive charts, you can change the following parameters:

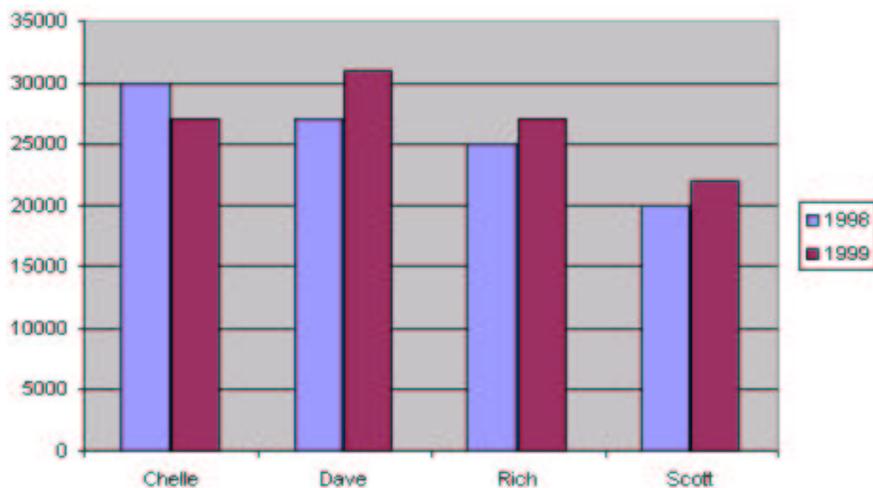
WITHMAP	0 or 1	0 → Chart is not interactive
---------	--------	------------------------------



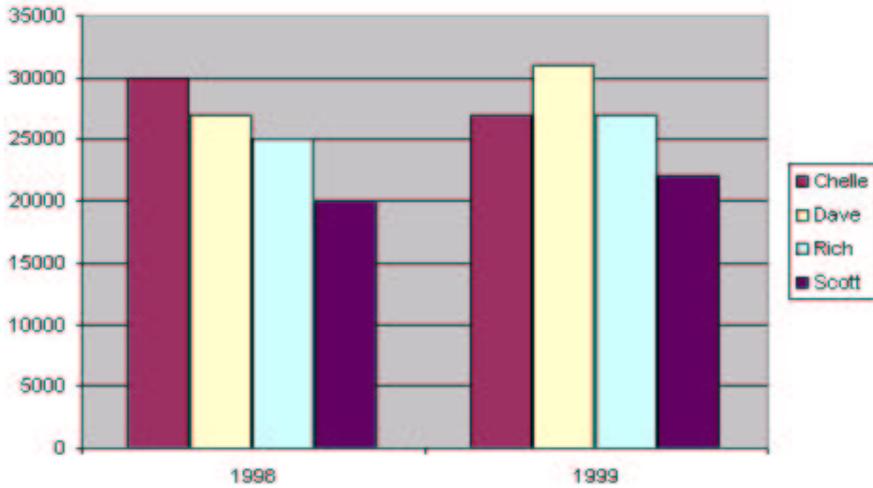
		1 → Chart is interactive
WITHCONTEXTMENU	0 or 1	0 → There is an interactive context menu 1 → There is no interactive context menu
STATEFUL	0 or 1	1 → The session is not dismantled after the chart has been rendered 0 → The session is dismantled after the chart has been rendered
FILTERSERIES	0 or 1	The series* can be swapped with 0 or 1

* Example of swapping series:

FILTERSERIES = 0



FILTERSERIES = 1



7. Save your finished HTML template in the template directory for the *ITS* → *BWORK* (No subdirectories are allowed in the template directories)
8. To start the report, choose the *View Page in Browser* button in the Web Publisher, and specify the name of your HTML template. The Web query is started with the URL <http://<its name>:<port>/scripts/wgate/bwork/!/?~initialtemplate=<template name>>

7 Mobile Reporting with WAP

Using Web Reporting, it is now possible to display BW reports on mobile telephones. The basis for this is WAP, as the transfer protocol, and WML as the description language.

At the moment, memory space for WAP compatible devices is still extremely limited. The quantity of data you can transfer to these kinds of devices must, therefore, be small. For this reason, the result of a WAP query view should be within 3 – 4 columns and 10 rows in size. If your query view result is larger than this, it will be cut off when it is transferred.

Example of a suitable query view:

<i>W@P Sales Region</i>		
<i>Customer</i>	Sales	Sold QTY
Black	720.00 EUR	69.000 EA
White	730.00 EUR	62.000 EA

Green	360.00 EUR	39.000 EA
Yellow	590.00 EUR	55.000 EA
Purple	430.00 EUR	44.000 EA

Since you can use any view when you call up a query, the query can be more complex. However, the view you use must fulfill these requirements.

As well as having restricted memory space, most of the standard WAP devices only offer vertical scrolling. This means that a query result cannot be displayed horizontally, and a new display format has to be found. There are two options:

Display by members:

All the key figures are listed for every value of a member.

Black:

Sales: 720.00 EUR

Sold QTY: 69.000 EA

White:

Sales: 730.00 EUR

Sold QTY: 62.000 EA

Green:

Sales: 360.00 EUR

Sold QTY: 39.000 EA

...

Display by key figures:

All members are listed for every value of a key figure.

Sales:

Black: 720.00 EUR

White: 730.00 EUR

Green: 360.00 EUR

Yellow: 590.00 EUR

...

Sold QTY:

Black: 69.000 EA

White: 62.000 EA

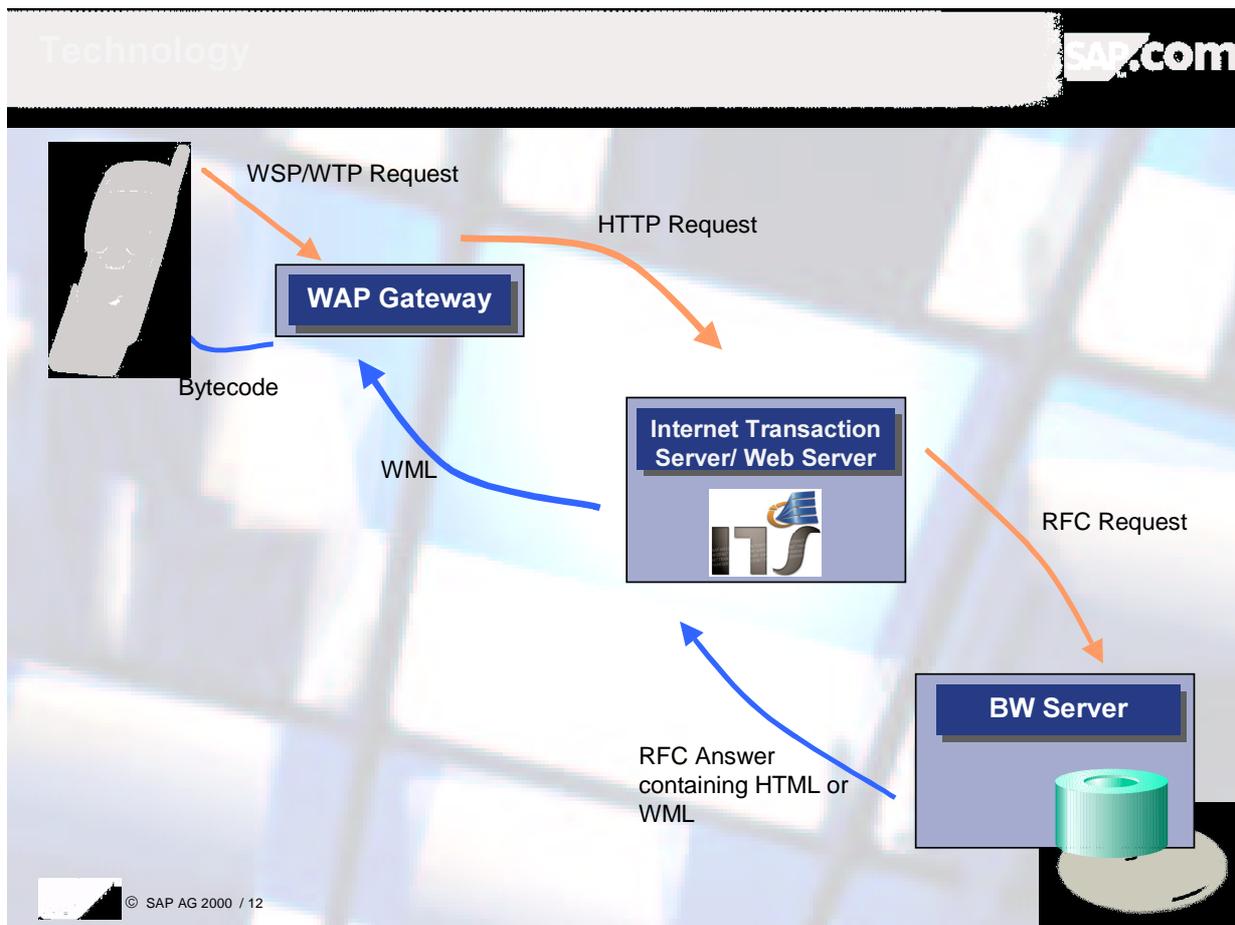
Green: 39.000 EA

Yellow: 55.000 EA

...

7.1 Technology

First, the user connects to his terminal (a WAP compatible mobile phone, for example) using a WAP service provider. This provides him with a WAP gateway or a WAP server that he uses to transfer contents from the Internet onto the terminal. The WAP gateway passes the requested URL on to the Web server the user wants to use, in this case, to the ITS. A special service is specified in the requested URL (BWWAP), which signals to the ITS, that WML and not HTML is required. The ITS then calls the BW system, and requests the query data. The data is transferred in raw form, and converted into WML in the ITS. The result returns to the WAP gateway, which transforms the WML text data into a compressed byte code, and sends it to the terminal. The data is compressed, because this saves time during the transfer process, and also, because most devices only have limited memory space at the present time.



7.2 Procedure for Publishing Web Reporting on Mobile Telephones

1. Create a query
2. Embed the query in a workbook
3. Save a suitable view. The result must fulfill the requirements specified above, and the view name must not contain any blanks or '&' characters
4. Call the WML page using the following URL:
<http://ITS/scripts/wgate/bwwap/!?wbid=workbookid&viewid=viewname>

For 'workbookid', enter the ID of your workbook , and for 'viewname', enter the view name that you chose.

It is not necessary to create elements, or checkin templates.

8 Maps on the WEB (Creating an ITS Template)

From BW 2.0B you can also display maps on the Web. These maps are based on query views. The query views must fulfill certain requirements:

- Use **exactly one** characteristic in the rows. This characteristic must be a static geo-InfoObject. You cannot use any additional characteristics or structures in the cells.
- In the columns, you **must** use a structure that contains key figures. You cannot use any additional structures or characteristics in the columns. It is, however, possible to use combinations of key figures and characteristic values within the key figure structure.

Procedure:

1. First, choose *Options* → *Technology* → *Templates on ITS* from the Web Publisher

This ensures that the BW commands generated by the Web Publisher have the correct syntax.

2. Choose a view

Views form the basis for templates

3. Create a new map element

With attributes for a map element, you can make map-specific settings (for example, the size of the bars in bar charts, the width of the map, color settings, and so on). Important settings are, 'Lower map layer' and 'Upper map layer'. With these settings, you control how the data from the key figure structure is displayed on the map.

Example



Country	Market potential	Sales 01/2000	Sales 02/2000
USA	200.000 USD	80.000 USD	83.000 USD
Germany	130.000 USD	34.000 USD	29.000 USD
France	80.000 USD	27.000 USD	34.000 USD

Lower map layer selection: *Color shading*

Upper map layer selection: *Bar chart*

On the map, the first column (market potential) is displayed (rendered) using color shading, and columns 2 and 3 (sales 01/2000 and sales 02/2000) are compared in a bar chart.

If you choose only the lower map layer (for example, pie chart) and leave the selection for the upper map layer blank, all 3 columns are displayed (rendered) as a pie chart.

There are, therefore, various options, which enable you to display the same view in different ways on the map.

Tip

Try out the BEx Map in the BEx Analyzer, and see which type of graphical presentation (renderer) you like best on the map. Make the corresponding selection in the Web Publisher.

4. Give the map element a name

The element has now been created, and linked with the corresponding view. If the BW command that represents this element is created at a later date, the element and view names will be transferred as parameters.

5. Choose your preferred HTML Editor, and create a HTML page according to the following pattern

```
<html>
<head>

<link rel=stylesheet HREF="/sap/its/mimes/webRFC/bw/BwReports.css"
TYPE="text/css">
<title>BW Web Report Interactive Chart</title>
```

```
</head>

<body>

`include(~service="bwinclude", ~name="bwmain.html", ~theme="")`

</body>
</html>
```

This HTML page is the basis for the template.

The **HTML command “link”**, tells the Web Browser that receives the page, that a style sheet file is stored on the Web Server under the specified path. This file contains information on how particular BW elements are rendered graphically. You can replace this file with one of your own files that has company-specific displays.

The **include command** tells the ITS, that the template file “bwmain.html” has to be downloaded from the service directory “bwinclude”. All BW-specific BusinessHTML functions are declared here. **Important: The include line must be inside the body tag.**

6. Using the clipboard function, copy the element (a map, in this case) into the HTML page

Result:

```
<html>
<head>
<link rel=stylesheet HREF="/sap/its/mimes/webrfc/bw/BwReports.css"
TYPE="text/css">
<title>BW Web Report Interactive Chart </title>

</head>

<body>

`include(~service="bwinclude", ~name="bwmain.html", ~theme="")`

`BWRRenderMapS("VWBID='7TSIL2K2EHJSMPWOBY69VSXLB' DATA_PROVIDER='WEBMAP'
VIEWID='WEBMAPVIEWID' IWBID='7TSIL2K2EHJSMPWOBY69VSXLB' ITEM='WEBMAPITEM'
ITEMID='WEBMAPITEMID' STATEFUL='1'")`

</body>
</html>
```

The BusinessHTML function ‘BWRRenderMapS’ that defines the include file ‘bwmain.htmlmain.html’, is executed by the ITS during analysis, and creates the corresponding HTML in this case, a map)

An SAP Business HTML function is created instead of the object tag known in the WebRFC. With maps, you can change the following parameters:

STATEFUL	0 or 1	0 → The session is not dismantled after the chart has been rendered 1 → The session is dismantled after the chart has been rendered
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7. Save your finished HTML template in the template directory for the *ITS* → *BWORK* (No subdirectories are allowed in the template directories)
8. Finally, copy the map belonging to the static geo-characteristic (has to be used in the view in the rows) into a 'shapes' directory on the ITS.

Carry out this procedure **only** if the maps are not already available in this directory. If the maps are already available in the ITS, then **do not** carry out this step.

Procedure

After installing the ITS, the directory "C:\Programme\SAP\ITS\BW\Shapes" is searched first for the maps.

This directory does not exist immediately after an ITS installation. You have to create it manually. The path where you have to store the maps, is also stored in the Windows registry database.

To check the path, start the program 'regedit' (for example, using 'Start' – 'Run' and then entering 'regedit'). Open the directory 'HKEY_LOCAL_MACHINE' – 'SOFTWARE' – 'SAP' – 'ITS', and click on the directory '2.0'.

On the right-hand side under '**BWShapesPath**', you find the path where the ITS searches for the maps belonging to the view. You can change this path, and store you maps in the new path. Note, that after you make a change, the ITS searches for **all** maps in the **new** directory.

Make sure that every map appears only **once** in the directory.

Where do I find the maps?

The maps for a static geo-characteristic are stored on the BW sever. In the 'Business Explorer' area, you get to an overview of the maps (shape files) for an InfoObject by using the 'Display/change

shape files' selection button in the InfoObject maintenance for a geo-characteristic. Here, you copy the maps (shape files) into the corresponding ITS directory, for example, using 'Export document'.

You can also copy the maps, at any time, from every other directory into the corresponding ITS directory.

9. Start your URL, and look at your map in the WEB Browser.

9 Additional Information on the BusinessHTML

<http://mysap.wdf.sap-ag.de:1080/Design/index.html>