December 2016



Cookbook of Reports & Visualizations

CREATED WITH THE BIZINT SMART CHARTS **PRODUCT FAMILY**

www.bizint.com/Cookbook



Cookbook of Disualizations & Reports

Using this Cookbook

APPLYING THESE RECIPES TO YOUR DATA

We believe the methods in the recipes included here are applicable to other data sets and sources. However, because each recipe was built using a particular example dataset, you should take some caveats into consideration when applying recipe steps to your own data:

Caveat One: When you combine charts from different sources, the source selected first (the "Key Chart"), will determine the names for common columns. For example, depending on the source, the column could be called Condition, Disease or Indications. While you may see different column names than those indicated in the recipe, the same steps should still apply.

Caveat Two: Some recipes contain steps and guidance based on the content of the example dataset. For example, we provide suggestions for changing Common Trial ID assignment in cases where the automatically generated Common ID combines trials we want to be treat separately. How much this step is necessary depends on the dataset.

Caveat Three: We revise these recipes based on user feedback, so check the latest edition of the Cookbook on our website to see if we have revised the recipe you're interested in.

Note: Some recipes in the Cookbook have been updated for VantagePoint -Smart Charts Edition 9.1 users; if you are using an earlier version, please refer to the October 2015 Cookbook.

Software for Business Intelligence

BizInt Smart Charts



STYLE CONVENTIONS USED

Commands are shown in **colored sans-serif type** with the pipe(|) symbol used to divide sequential menu selections. For example, **File | Combine** indicates that you should first click on the File menu and then select Combine.

Italics indicate a note, generally indicating steps that may be different depending on the dataset.

"Text in quotation marks" indicates something you should type in to a text box or text that appears in the software outside of the menus.

Note: as of 1 September 2015, support for clinical trials data is in BizInt Smart Charts for Clinical Trials or the BizInt Smart Charts Drug Development Suite.



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Company Collaboration – Assignee Cleanup [Patents PT-1]

In this recipe, we use VantagePoint - Smart Charts Edition to extract a list of companies from Assignees in patents filed by Human Genome Sciences, based on a searches in Minesoft Patbase. Company names were cleaned up using VantagePoint - Smart Charts Edition and inventor names were removed from the Assignee list (as shown in the chart below) so that a company analysis could be done.

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| | Title | Patent Assignee | Assignees (Cleaned Up, Companies Only) |
|---|---|---|--|
| 1 | Human dendriac and brainiac-3 | EBNER REINHARD ENDRESS GREGORY A FLORENCE KIMBERLY A HUMAN GENOME SCIENCES INC ROSEN CRAIG A RUBEN STEVEN M SOPPET DANIEL R YU GUO LIANG | HUMAN GENOME SCI INC |
| 2 | Closing device | HUMAN GENOME SCIENCES INC SAINT GOBAIN PAM SAINT GOBAIN PAM CRD SAINT GOBAIN PONT A MOUSSON | HUMAN GENOME SCI INC SAINT GOBAIN PAM |
| 3 | Meth1 and Meth2 polynucleotides and polypeptides | BETH ISRAEL DEACONES MEDICAL C BETH ISRAEL DEACONES MEDICAL CENTER BETH ISRAEL DICKNY MEDICAL CENTRE BETH ISRAEL DICKNY MEDICAL CT BETH ISRAEL DACONESS MEDICAL CENTER FORIWALD JAMES A FRONWALD JAMES A GREGG A HASTINGS HASTINGS GREGG A HUMAN GENOME SCIENCES INC IRUELAARISPE LUISA JAMES A FORNWALD JONAK ZDENKAL JONATHAN A TERRETT JORAK ZDENKAL LUISA IRUELAARISPE RUBEN STEVEN M (CONT.) | BETH ISRAEL HOSPITAL HUMAN GENOME SCI INC |
| 4 | Tumor necrosis factor receptor 5 | BROOKES ROGER DOCKRELL HAZEL MARGUERITE EBNER REINHARD FENG PING GENTZ REINER L GLAXO GROUP LTD HUMAN GENOME SCEINECES INC HUMAN GENOME SCIENCES INC NI JIAN RUBEN STEVEN M SMITH STEVEN MARK WEI YING FEI YU GUO LIANG | GLAXOSMITHKLINE HUMAN GENOME SCI INC |

Cookbook of Disualizations & Reports

Software for Business Intelligence

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Company Collaboration – Assignee Cleanup [Patents PT-1] How did we create this?

SEARCHES:

Minesoft PatBase: Assignee = Human Genome Sciences (and obvious synonyms) - 1507

BIZINT SMART CHARTS FOR PATENTS

- 1. Import your results into BizInt Smart Charts to create a .chp file.
- 2. Display the Patent Assignee and Inventor(s) columns.
- 3. Use File Export to export the chart to Vantage Point XML, chart only.

VANTAGEPOINT - SMART CHARTS EDITION

- 4. If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into VP-SCE using File | Import.
- 5. **Remove Inventors from the Assignee List:** On the Summary page, double-click on Patent Assignee.
- 6. Choose Groups | List Comparison.
- 7. In the middle list, expand the list, and then choose Inventor(s). In the Comparison Type choose Unique. At the bottom right of the panel give the new group a name (such as "NoInv"). You can improve the comparison accuracy by selecting Fuzzy Comparison and then pressing the ... button to select the Person Names Very Aggressive comparison.
- 8. Press OK. This will place a check mark next to every Assignee which doesn't exactly match an Inventor.
- 9. Choose Fields | Create Field From Group Items..., select the Patent Assignee field, and the NoInv group. Enter a new field name "Assignee Companies". At this point, the list contains many variations on the Assignee company names, but may still contain many individual names that weren't an exact match to the inventors.
- 10. Normalize the Assignee Names: Choose Fields | List Cleanup and choose Organization Names (Pharma).fuz as the fuzzy match criteria (you don't need to set any other options). Use the Cleanup Confirm panel to further cleanup company names. Type part of a name into the Find box and click Add. The Custom Set of Items will show everything that matches what you typed this is a great way to find all universities (finding "univ"). Then click Accept.
- 11. **Manually remove remaining Inventors from the Assignees:** Note that you may still have individual names in the list. Review the list, clicking the NoInv box until the mark is blank when the name is an individual.
- 12. Once again, use Fields | Create Field from Group Items to create a new group from the Assignee Companies (Cleaned) : NoInv group. Call this field "Assignees".
- 13. Export cleaned up Assignees back to BizInt Smart Charts: Export the cleaned up Assignees back to BizInt Smart Charts as a new column using File | Export Fielded Records. In the Export Wizard, click Deselect All and then click the checkbox for Assignees. Click OK to export.

BIZINT SMART CHARTS FOR PATENTS

14. When BizInt Smart Charts for Patents comes to the foreground, select the original chart. It will redisplay with a new Assignee Companies column. You can use Text | Highlight Cells to highlight the column in yellow.

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Integrating Patent Data with Claims from Other Patent Databases [Patents-PT-10]

In this example we combine information from Chemical Abstracts, Derwent World Patents Index and fulltext patent sources on the new STN platform into a report that integrates the information from Chemical Abstracts with claims from DWPI and fulltext sources. The Identify Common Patent Families tool is used to identify related publications across databases, as shown in the chart below. The BizInt Smart Charts Reference Rows utility is then used to create a single row integrating claims and other information for each family, shown on the next page.

| | Title | Common Family | Database | Patent Assignee | Priority Date | Claims | Graphic Information |
|---|---|---------------|--------------------------------|---|---------------|---|------------------------|
| 1 | Nasal delivery device for treating inflammatory or infectious condition of nasal cavity, has nosepiece unit with nosepiece that is fitted into nostril of person, and nozzle that ejects substance from delivery unit | GB2434989 | Derwent World Patents Index | OPTINOSE AS | 2006-02-14 | | |
| 2 | Delivery device and method | GB2434989 | GB Patents Fulltext | OPTINOSE AS, Norway (NO) | 2006-02-14 | GB 2434989B 1. A nasal delivery device for delivering substance to the middle meatus in a nasal cavity of a subject in the treatment of a condition, in particular an inflammatory or infectious condition, thereof, the delivery device comprising: a nosepiece unit including a nosepiece for fitting to a nostril of a subject and a nozzle through which substance is in use delivery unit for delivering substance through the nozzle of the nosepiece; wherein the nosepiece is configured, when inserted into the nasal cavity, to extend into the nasal valve and provide for expansion thereof, and the nozzle provides for delivery of the substance as at least one liquid jet or an aerosol spray having a cone angle of not more than about 50 degrees, whereby at [CONT.] | |
| 3 | Sheet or tubular structure consisting of elastic biocompatible material and its use | EP2067494 | Chemical Abstracts | Charite - Universitaetsme dizin Berlin, Germany (DE) | 2007-12-04 | | |
| 4 | Sheet or tubular structure useful for covering e.g. orthopedic implant and pacemaker and for treating e.g. fractured/lost bone and heart disease, comprises elastic biocompatible material and biologically active substance | EP2067494 | Derwent World Patents Index | CHÂRITE-UNIV MEDIZIN BERLIN UNIV BERLIN CHARITE | 2007-12-04 | EP2067494A1 A sheet or tubular structure, which consists of biocompatible material, is elastic and comprises at least one biologically active substance in at least one region. | |



Integrating Patent Data with Claims from Other Patent Databases [Patents-PT-10] How did we create this?

SEARCHES:

• A search for natamycin was conducted in Derwent Chemical Resource and transferred to Derwent World Patents Index and the patent numbers found were searched in Chemical Abstracts and fulltext patent files on new STN.

BIZINT SMART CHARTS FOR PATENTS

- 1. Create a combined chart: Import each set of search results into BizInt Smart Charts and use File | Combine to create a combined chart, selecting the Chemical Abstracts chart first as the key chart.
- 2. Identify related records: Use Tools | Identify Common Patent Families to identify related records and then sort by the Common Family column to review the results.
- 3. Use View Columns to select the columns you want in your chart. For this example, Claims should be visible.
- 4. Save the chart file and then use File | Send to Reference Rows to open the chart in BizInt Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS

- 5. **Integrate information from both databases:** Click Next to continue to the next step in the Create Reference Rows Wizard. *We already identified common patent families so we don't need to Regenerate them.*
- 6. Click Finish in step 2. Because you chose your Chemical Abstracts chart as the key chart it will automically be at the top of your database preferences. This means that reference rows will contain information from CA by default. Reference Rows will draw from the next database if the preferred database is missing the information. This means that Claims will come from DWPI and the fulltext sources.
- 7. When the wizard finishes, you will see the Selection View. Green check marks indicate the items selected by the database ranking.
- 8. Create your report: To see the reference rows integrating your sources, you'll need to export. Use File | Export and choose an export format. For this example we chose HTML, chart and records. Then click OK. Click OK on the next screen to use the default options. You should see a report like the one below with one row per patent family showing claims as well as the additional columns you selected.

| | Title | Database | Patent Assignee | Date | Claims | Graphic Information |
|----|--|--|---|------------|--|---------------------------------|
| 1. | Nasal delivery device for treating inflammatory or infectious condition of nasal cavity, has nosepiece unit with nosepiece that is fitted into nostril of person, and nozzle that ejects substance from delivery unit | 1.1 DWPI 1.2 GBPATF | OPTINOSE AS | 2006-02-14 | GB 2434989B 1. A nasal delivery device for delivering substance to the middle meatus in a nasal cavity of a subject in the treatment of a condition, in particular an inflammatory or infectious condition, thereof, the delivery device comprising: a nosepiece unit including a nosepiece for fitting to a nostril of a subject and a nozzle through which substance is in use delivered to the respective nasal cavity, and a delivery unit for delivering substance through the nozzle of the nosepiece; wherein the nosepiece is configured, when inserted into the nasal cavity, to extend into the nasal valve and provide for expansion thereof, and the nozzle provides for delivery of the substance as at least one liquid jet or an aerosol spray having a cone angle of not more than about 50 degrees, whereby at [CONT.] | |
| | 1.1 DWPI | | 1.1 DWPI | 1.1 DWPI | 1.2 GBPATF | 1.1 DWPI |
| 2. | Sheet or tubular structure consisting of elastic biocompatible material and its use | 2.1 CABS 2.2 DWPI 2.3 EPFU | Charite - Universitaetsmedizin Berlin, Germany (DE) | 2007-12-04 | EP2067494A1 A sheet or tubular structure, which consists of biocompatible material, is elastic and comprises at least one biologically active substance in at least one region. | |
| | 2.1 CABS | | 2.1 CABS | 2.1 CABS | 2.2 DWPI | 2.2 DWPI |
| 3. | Method for treating otitis externa with composition comprising corticosteroid with antifungal agent | 3.1 CABS 3.2 DWPI 3.3 USFU | SLATER P | 2005-01-25 | US8337481B2 What is claimed is:1. A method for treating otitis externa, comprising: diagnosing an instance of otitis externa in a patient, and | 201 203 205 209 211 |
| | 3.1 CABS | | 3.2 DWPI | 3.1 CABS | 3.2 DWPI | 3.2 DWPI |
| 4. | Method for treating a skin ailment | 4.1 CABS | The Procter & Gamble Company, United States | 2010-04-26 | 1) A method for treating a skin ailment comprising: (a) providing a personal care product comprising (i) an | |

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Software for Business Intelligence BizInt Smart Charts

Summarizing Legal Status in a Family [Patents PT-2]

This recipe shows how to use the "Create Subtable from Columns" tool and the "Summarize All Values" rule to create a table summarizing the latest legal status events for a family. Several variations of this recipe are possible, such as only showing the status for a specific authority, or using VP-SCE to filter for a subset of legal status codes in the Legal Status field, rather than using the Latest Legal Status field.

Patent Family Family Legal Status Patent International Title Patent Class Patent Numbe Assignee Patent Kind Date Latest Legal Status Colon and colon cancer HUMAN A61P35/00 AU 200077215 AU 200077215 A5 20020606: - (MK6) APPLICATION A5 2001-04-30 6.1 6.1 6. associated GENOME C07K14/47 LAPSED SECTION 142(2)(F)/REG. US 2003109690 2003-06-12 6.2 polynucleotides and SCIENCES C12Q1/68 8.3(3) - PCT APPLIC, NOT polypeptides EP 1265582 A2 2002-12-18 63 INC ENTERING NATIONAL PHASE CA 2384713 AA 2001-04-05 US 2003109690 A 20020715; (AS) ASSIGNMENT (6.4 6.2 OWNER NAME : HUMAN GENOME WO 0122920 C1 2002-04-11 SCIENCES, INC., MARYLAND DESCRIPTION : ASSIGNMENT OF ASSIGNORS INTEREST ASSIGNORS: RUBEN, STEVEN M .; BARASH, STEVEN C .; BIRSE, CHARLES E .: ANDOTHERS: REEL/FRAME:013088/0134 SIGNING DATES FROM 20020610 TO 20020611) EP 1265582 A2 20030129: - (18W) WITHDRAWN (6.3 EFFECTIVE DATE : 20021126) CA 2384713 AA 20030224: - (AZWI) WITHDRAWN 64 APPLICATION 20040701: (NENP) NON-ENTRY WO 0122920 C1 6.5 INTO THE NATIONAL PHASE IN: (REF COUNTRY CODE : JP) 6.1 Patt 6.1 Patba 6.1 Path WARNER A61K38/00 Identification and use of 20030416: - (AT) APPLICATIONS TERMINATED BEFORE GB 200202910 2002-03-27 GB 200202910 A0 7.1 A0 7.1 7. molecules implicated in LAMBERT CO A61P23/00 GB 200202892 A0 2002-03-27 7.2 A61P25/02 pain PUBLICATION UNDER SECTION GB 200202880 AO 2002-03-27 7.3 A61P25/04 16(1) C07K14/47 GB 200202883 A0 2002-03-27 GB 200202892 A0 20030430: - (AT) APPLICATIONS 7.2 7.4 C07K14/705 TERMINATED BEFORE GB 2377940 2003-01-29 A1 C12N9/00 PUBLICATION UNDER SECTION FP 1281775 A2 2003-02-05 C12N9/12 16(1) C12N9/16 CA 2391216 2003-01-27 AA 7.3 77 GB 200202880 A0 20030430: - (AT) APPLICATIONS C12N9/64 CA 2391112 AA 2003-01-27 C12N15/12 TERMINATED BEFORE PUBLICATION UNDER SECTION C12Q1/68 CA 2391642 2003-01-27 AA 16(1) EP 1284298 A2 2003-02-19 7.10 GB 200202883 A0 20030430: - (AT) APPLICATIONS 7.4 EP 1284297 A2 2003-02-19 TERMINATED BEFORE 7.11 PUBLICATION UNDER SECTION EP 1279744 A2 2003-01-29 7.12 16(1) CA 2391219 AA 2003-01-27 7.13 20031008: - (WAP) APPLICATION GB 2377940 A1 7.5 WITHDRAWN TAKEN TO BE WITHDRAWN OR REFUSED AFTER PUBLICATION UNDER SECTION 16(1) 7.6 EP 1281775 A2 20060823: - (18D) DEEMED TO BE WITHDRAWN (EFFECTIVE DATE : 20060221) CA 2391216 AA 20060921: - (FZDE) DEAD CA 2391112 AA 20060922: - (FZDE) DEAD

SUBTABLE SUMMARIZING LEGAL STATUS IN FAMILY



Summarizing Legal Status in a Family [Patents PT-2] How did we create this?

SEARCH:

• PatBase - number search for publications found in a sequence (H5N1 NS1); rather than exporting the matching families, we export individual publication data including Legal Status

BIZINT SMART CHARTS FOR PATENTS

- 1. Import the search results into BizInt Smart Charts for Patents to create a .chp file.
- 2. **Group Rows by Patent Family:** Even though our search result is from a single database, we need to group records. Use the **Identify Common Patent Families** tool to match the publications into their family groups. If you didn't export the family members as part of the publication data, you can copy the PatBase Family Number column and paste it into the Common Family column. This will ensure that the families in your report match the PatBase families.
- 3. Display the Patent Number and Latest Legal Status columns (View Columns).
- 4. Hide Rows Which Don't Have Legal Status Data: Generally you don't need to show family members for which you don't have any Legal Status data to report.
- 5. Click in the Latest Legal Status column and then select View Sort. Add Latest Legal Status to the Sort Order list and sort.
- 6. Rows which are missing Latest Legal Status will be at the top of the chart. Click in the first row, scroll down to the last row with blank Latest Legal Status, press Shift and click again. Then Edit | Hide Rows to hide these rows in the chart. (You can bring them back with View Rows at a later time).
- 7. Save the .chp file.
- 8. Send the chart to Reference Rows using the toolbar icon (or File | Send to Reference Rows).

BIZINT SMART CHARTS REFERENCE ROWS

- During the Create Reference Rows wizard, do not Regenerate the Common Family if you copied the PatBase Family Number column.
- 10. Finish the wizard you don't need to set any rules at this time.
- 11. Create the Summary Subtable Column and Set Rules: Run Tools | Create Subtable from Columns.
- 12. Select the Patent Number and Latest Legal Status columns in that order and press Apply. A new column will be created.
- 13. Double click on the column header to rename the new column from Untitled Subtable to "Family Legal Status".
- 14. Hide the original Patent Number and Latest Legal Status columns.
- 15. Use Reference Rows Column Rules... to set the rule for the new column to Summarize All Values.
- 16. Use File Export to export the report to HTML and see the subtable column summarizing the latest legal status even for each family member.

Cookbook of Disualizations & Reports

Filtering the Patent Family by Authorities [Patents PT-3]

In this example, we've used VantagePoint - Smart Charts Edition to filter the Patent Family subtable to include only US, EP, WO patents. We've also filtered the patent numbers in the Patent Family to create a new column with only Chinese patents.

PATENT FAMILY FILTERED BY AUTHORITIES (US/EP/WO)

PATENT NUMBERS FILTERED BY AUTHORITIES (CN)

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| | Detabase | Pater | it Famil | у | Pater | Chinese Detecto | | |
|----|-------------------|------------------|----------|----------|----------------|-----------------|----------|-----------------|
| | Database | Patent Kind Date | | | Patent | Kind | Date | Chinese Patents |
| | FAMPAT | WO 2006127537 | A2 | 20061130 | EP 1888785 | A2 | 20080220 | CN 101501214 |
| | | CA2609214 | A1 | 20061130 | EP 1888785 | A4 | 20100203 | |
| | | US 20070037186 | A1 | 20070215 | US 20070037186 | A1 | 20070215 | |
| | | EP 1888785 | A2 | 20080220 | WO 2006127537 | A2 | 20061130 | |
| | | MX 2007014618 | Α | 20080422 | WO 2006127537 | A3 | 20090416 | |
| 20 | | JP 2008545400 | Α | 20081218 | | | | |
| | | WO 2006127537 | A3 | 20090416 | | | | |
| | | CN 101501214 | Α | 20090805 | | | | |
| | | EP 1888785 | A4 | 20100203 | | | | |
| | | BR 200610012 | A2 | 20100518 | | | | |
| | GQPAT Nucleotides | US20070037186 | | 20070215 | EP1888785 | | | CN101501214 |
| | | BRPI0610012 | | | US20070037186 | | 20070215 | |
| 21 | | CA2609214 | | | WO2006127537 | | | |
| | | CN101501214 | | | | | | |
| | | EP1888785 | | | | | | |
| | | JP2008545400 | | | | | | |
| | | MX2007014618 | | | | | | |
| | | WO2006127537 | | | | | | |
| | GQPAT Nucleotides | JP2008545400 | | 20081218 | EP1888785 | | | CN101501214 |
| | | BRPI0610012 | | | US20070037186 | | | |
| | | CA2609214 | | | WO2006127537 | | | |
| | | CN101501214 | | | | | | |
| 22 | | EP1888785 | | | | | | |
| | | MX2007014618 | | | | | | |
| | | US20070037186 | | | | | | |
| | | WO2006127537 | | | | | | |
| | GQPAT Nucleotides | EP1888785 | | 20080220 | EP1888785 | | 20080220 | CN101501214 |
| | | BRPI0610012 | | | US20070037186 | | | |
| | | CA2609214 | | | WO2006127537 | | | |
| ~ | | CN101501214 | | | | | | |
| 23 | | JP2008545400 | | | | | | |
| | | MX2007014618 | | | | | | |
| | | US20070037186 | | | | | | |
| | | WO2006127537 | | | | | | |

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Cookbook of Disualizations & Reports

Filtering the Patent Family by Authorities [Patents PT-3] How did we create this?

SEARCHES: •

Sequence and patent data from GenomeQuest (GeneSeq and GQPAT) and FAMPAT on Orbit.com

BIZINT SMART CHARTS FOR PATENTS (VERSION 3.5.6 OR HIGHER)

- 1. Import your results into BizInt Smart Charts to create a .chp file.
- Use the File Combine feature to create a single combined chart. Run the Identify Common Patent Families tool and sort by 2. the Common Patent Family field. Display the Patent Family column.
- Use File Export to export the chart as Vantage Point XML (creates a .vpxi file.) 3.

VANTAGEPOINT - SMART CHARTS EDITION

- If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into 4. VP-SCE using File | Import.
- Filter the Patent Family by Authorities: On the Summary panel, double-click on Patent Family. 5.
- Select Edit | Find to bring up the Find panel. Click the Clear Selection button to clear any 6. existing selections.
- In the Find panel, check the Use regular expression box. Type the regular expression 7. "^(US|EP|WO)" into the Find what: box and click the Select All button. All of the US, EP, and WO patent numbers should be selected in the Patent Family window.
- Click the Add to Group button and type "BizInt" in the group field. A new column with 8. check marks next to the selected subrows will be created. Click Close to close the Find panel.
- Select Fields | Create Field from Group Items. Select the BizInt item under Patent Family, and 9. click OK.
- 10. Filter Patent Numbers by Authorities: If you want a column in your report with patent numbers from selected authorities, return to the Summary view and right-click on the Patent sub-field under the Patent Family field. Choose Copy Field... and enter a new field name (such as "All Patent Numbers"). Press OK, and select this new field from the Summary.
- 11. Select Edit | Find to bring up the Find panel. Click the Clear Selection button to clear any existing selections.
- 12. In the Find panel, check the Use regular expression box. Type the regular expression "^CN" into the Find what: box and click the Select All button. All of the CN patent numbers should be selected in the All Patent Numbers window.
- 13. Click the Add to Group button and type "Chinese" in the group field. A new column with check marks next to the selected subrows will be created. Click Close to close the Find panel.
- 14. Select Fields Create Field from Group Items. Select the Chinese item under All Patent Numbers, and click OK.
- 15. Export new fields to BizInt Smart Charts: Export back to BizInt Smart Charts using File | Export Fielded Records. In the Export Wizard, click Deselect All and then click the checkboxes to select your new filtered fields. Click OK to export.

BIZINT SMART CHARTS FOR PATENTS

When BizInt Smart Charts for Patents comes to the foreground, select the original chart. It will redisplay with your new 16. filtered patent family and patents numbers as new columns.

| Find | | | × |
|---|------------------------------|--|--|
| Find what: ^(USEPW0) Match Whole Word Only Match case V Use regular expression | Direction O Up O Down | Select All Add to Group Add to Keyword List Clear Selection | Find Add to Selection Close Basic |
| Operator | Search Term | | |



Cookbook of Disualizations & Reports



Charting Companies by Filing Status with a Bubble Chart [Patents PT-7]

This is one example of a bubble chart created with VantagePoint – Smart Charts Edition (VP-SCE) using data exported from BizInt Smart Charts for Patents (see other recipes in this Cookbook for examples with pipeline and clinical trial data.) Here the bubble chart shows companies by filing status based on records from Cortellis and Fampat. A single record for each patent family was created with BizInt Smart Charts Reference Rows and then exported to VP-SCE where we crearted filing status categories from Fampat data and extracted patent assignees from the Company information from Cortellis. Then we used VP-SCE to generate the chart.





Charting Companies by Filing Status with a Bubble Chart [Patents PT-7] How did we create this?

SEARCHES:

- Cortellis Patents: search for patents for indication Ebola, import into BizInt Smart Charts for Patents, run Identify Common Patent Families and run statistics on the Common Family column and save as .csv file.
- Orbit.com: Upload the .csv file of patent numbers from Cortellis to Orbit number search.

BIZINT SMART CHARTS FOR PATENTS

- 1. Import each set of search results into BizInt Smart Charts and use the File Combine feature to create a combined chart.
- 2. Run the Identify Common Patent Families tool and sort by the Common Family field.
- 3. Display the Companies, State, and Status columns.
- 4. Save the chart. Select File | Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS

5. Use File Export to export the visible columns to VantagePoint - XML.

VANTAGEPOINT - SMART CHARTS EDITION

- 6. If the file does not launch automatically in VP-SCE, then import the .vpxi file into VP-SCE using File | Import. Save your .vpt file.
- 7. Combine the State and Status fields: Using Scripts | Concatenate Fields, choose State as the first field and Status as the second field. Type "-" as the field separator.
- 8. Right-click on the State-Status field on the Summary sheet and choose List Cleanup.... Select the General.fuz file, and click Use.
- 9. Create filing status categories: On the Cleanup Confirm panel, change the Display radio button to All Items. Drag and drop to place all the DEAD items in a single group.
- 10. **Rename the categories for the chart:** Click on the DEAD group and use Ctrl+R to rename it "Dead". Repeat to rename "ALIVE-GRANTED" to "Granted" and "ALIVE-PENDING" to "Pending".
- 11. Click Accept. If you're working in this area often, consider saving the cleanup as a Thesaurus.
- 12. Select the three categories you created then right click to select Add Selection to Group.... In the New Group panel, type the word "chart" and click OK.
- 13. Extract Assignees from Companies field: Use Sheets Add List and choose the Companies field.
- 14. Use Ctrl+F to open the Find panel. Type "Assignee" as the text to find and click Select All. Click Add to Group and name the group "Assignees". Click Close.
- 15. Go to Fields | Create Field from Group Items, select the Assignees group, and click OK.
- 16. Use Sheets Add List and choose the Companies:Assignees::Company field.
- 17. Cleanup Assignees: Go to Fields | List Cleanup... and select the Organization Names (Pharma).fuz file, and click Use.
- 18. Use the Cleanup Confirm panel to further cleanup company names and then click Accept.
- 19. Select the top assignees, then right click to select Add Selection to Group.... In the New Group panel, type the word "top" and click OK. *To focus on industry, you can uncheck individuals and academic institutions*.
- 20. Create the Bubble Chart: Save the file. From the Scripts menu, select Bubble Chart and a Browser window will open with options for the script.
- 21. For step 1, select the cleaned assignees field-"Companies:Assignees::Company (Cleaned)" and change the radio button to Select a group.
- 22. For step 2, change the radio button to Select Any, and select State-Status (Cleaned) from the drop-down and change the radio button to Select a group.
- 23. For step 3, you can check the box to show record count in the bubbles and then scroll to the bottom of the window and click OK. A bubble chart showing assignees by filing status will be created.

Cookbook of Disualizations & Reports



Creating a Co-Occurence Matrix to Evaluate Patent Assignees [Patents PT-4]

We can use patent data to find organizations who haven't yet started clinical trials in a particular market. We searched for our target in the claims text, and limited the results to those publications with a Chinese document in the family. We then use VantagePoint – Smart Charts Edition (VP-SCE) to create a co-occurrence matrix from the patent data (in this case, mapping assignee organizations and priority application years) to try to identify possible partners (or competitors) in the field. We use this selection to choose a subset of rows in our original data set in BizInt Smart Charts for Patents, and export that subset with links to WIPO Patentscope, a good source for finding complete addresses.

| Reset | | Patent Assignee (Cleaned) | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---------|---------|------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|
| | | # Records | | 20 | 27 | 31 | 27 | 39 | 54 | 93 | 96 | 12 | 10 | 10 | 12 | 16 | 14 | 26 | 12 |
| Dates/F | # Recor | | 1994 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| 1 | 167 | BAYER AG | | | 2 | 1 | | | | 2 | 2 | 4 | 7 | 19 | 37 | 37 | 54 | 2 | |
| 2 | 77 | ABBOTT LAB | | | 5 | 4 | | | | - | - | 3 | 9 | 5 | 9 | 21 | 18 | 3 | |
| 3 | 44 | ABBVIE INC | | | 1 | | | | | | | 1 | 4 | 1 | 4 | 12 | 18 | 3 | |
| 4 | 28 | NOVARTIS AG | | | | | 2 | | | 10 | 5 | 6 | 3 | 1 | | 1 | | | |
| 5 | 24 | GENENTECH INC | | | | | | | | | 5 | 9 | 2 | 1 | 3 | 2 | 2 | | |
| 6 | 23 | BASF AG | | 1 | 5 | 5 | 1 | | 3 | | | 2 | | 2 | 1 | 3 | | | |
| 7 | 21 | KUDOS PHARM LTD | | | | | 2 | | | 6 | 3 | 1 | 6 | 3 | | | | | |
| 8 | 19 | JANSSEN PHARM NV | | | | | | | | 9 | 8 | | | | 2 | | | | |
| 9 | 18 | MERCK SHARP&DOHME | | | | | | | | | | 4 | 6 | 1 | 1 | 3 | 3 | | |
| 10 | 17 | BIPAR | | | | | | | | | | 3 | 5 | 7 | 1 | 1 | | | |
| 11 | 17 | SANOFI-AVENTIS | 1 | | 1 | | 1 | | | 1 | 6 | | | | 4 | 1 | 2 | | |
| 12 | 16 | PFIZER INC | | | | 1 | | 1 | 2 | 2 | 2 | | 2 | 4 | 1 | | 1 | | |
| 13 | 14 | SCHERING AG | | | | | | | 1 | | 3 | | 6 | 3 | | 1 | | | |
| 14 | 12 | AGOURON PHARMA | | | | 3 | 2 | 2 | | 2 | 2 | | | | 1 | | | | |
| 15 | 11 | CEPHALON INC | | 1 | | | 4 | | | | 2 | | 3 | | | 1 | | | |
| 16 | 11 | CHIRON CORP | | | | | | | | 7 | 3 | 1 | | | | | | | |
| 17 | 10 | INOTEK PHARM CORP | | | | | | 2 | | 4 | 2 | 1 | | 1 | | | | | |
| 18 | 9 | NEREUS PHARM INC | | | | | | | 2 | 1 | 5 | 1 | | | | | | | |
| 19 | 8 | ASTRAZENECA AB | | | | | | | | | | | 2 | 3 | 2 | | 1 | | |
| 20 | 8 | CYCLACEL LTD | | | | | | | 1 | 1 | | 1 | 1 | 2 | 2 | | | | |
| 21 | 8 | IST RICERCHE BIOL MOLECOLARE ANGEL | | | | | | | | | | | 4 | 4 | | | | | |
| 22 | 8 | XOMA TECHNOLOGY LTD | | | | | | | | 6 | | 1 | | 1 | | | | | |
| 23 | 7 | ACUCELA INC | | | | | | | | | | | | 5 | 2 | | | | |
| 24 | 7 | AEGERA THERAPEUTICS INC | | | | | | | 2 | 1 | | 1 | 3 | | | | | | |
| 25 | 7 | PFIZER PROD INC | | | | 1 | | 1 | | | | | 1 | 4 | | | | | |
| 26 | 7 | XENCOR INC | | | | | | | | | 4 | | | 2 | | | 1 | | |
| 27 | 6 | AGENSY'S INC | | | | | | | | | 4 | 2 | | | | | | | |
| 28 | 6 | ALLERGAN INC | | | | | | | | | | | | | | 6 | | | |
| 29 | 6 | BIOMARIN PHARM INC | | | | | | | | | | | | | 3 | | 3 | | |
| 30 | 6 | HOFFMANN LA ROCHE INC | | | | | | _ | | 1 | | | 1 | 1 | | 1 | 2 | | |
| 31 | 6 | IDERA PHARM INC | | | | | | | | 1 | | 3 | | 1 | | 1 | | | |
| 32 | 6 | JIANGSU HENGRUI MEDICINE CO LTD | | | | | | _ | | | | | | | | | 6 | | |
| 33 | 6 | JIANGSU SIMCERE PHARM CO LTD | | | | | | | | | | | | | | | | | 6 |
| 34 | 6 | SHANGHAI HENGRUI PHARM CO LTD | | | | | | | | | | | | | | | 6 | | |
| 35 | 6 | SIRTRIS PHARM INC | | | | | | | | | | 6 | | | | | | | |
| 36 | 6 | SUGEN | | | | | 2 | 4 | | | | | | | | - | | | |
| 37 | 5 | BERG PHARMA LLC | | | | | | | | | | | - | | | 5 | | | \square |
| 38 | 5 | CELL SIGNALING TECHNOLOGY INC | | | | | | | | | | 1 | 2 | 2 | | | | | |

Cookbook of Disualizations & Reports



Creating a Co-Occurence Matrix to Evaluate Patent Assignees [Patents PT-4] How did we create this?

SEARCHES:

Thomson Innovation: Claims contains "PARP" and Country = "CN" - 1203 records

BIZINT SMART CHARTS FOR PATENTS

- 1. Import the search results into BizInt Smart Charts. Since Thomson Innovation generates a ZIP file of the results, you can drag the file and drop it into BizInt Smart Charts for Patents.
- 2. Run Tools | Identify Common Patent Families.
- 3. Display the Patent Assignee and Priority Date columns.
- 4. Use File Export to export the visible columns to VantagePoint XML.

VANTAGEPOINT - SMART CHARTS EDITION

- 5. If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into VP-SCE using File | Import. Save your .vpt file.
- 6. Cleanup Patent Assignees: Follow the instructions in the Company Collaboration Assignee Cleanup recipe to clean up your list of Assignees.
- You may not be interested in all Assignees for example, universities located in the US aren't of interest in this exercise. View the cleaned up Patent Assignee list, and use Edit | Find to find "Univ", then Select All and Add to Group. Name the group (e.g. "no interest").
- 8. You can double-click on the header for the group to bring the selected items to the top, where you can review them. You may want to turn off the group check-box for Univ Shanghai, for example.
- 9. Create a list containing only those Assignees you are interested in. Fields | Create Field From Group, select the no interest group, and select the Use unchecked items radio button. Give the new field a name (e.g. "Selected Assignees") and then hit OK.
- 10. Extract the year for the priority date: Use Sheets | Summary to return to the Summary. Right-click on the Priority Date field and apply Further Processing | Dates | Extract Years.
- 11. Create the Matrix: Select Sheets Add Matrix...
- 12. Under the Rows heading, choose Selected Assignees.
- 13. Under the Columns heading, choose Priority Date: Dates/Extract Years.
- 14. Ensure that the Matrix type is Co-occurrence and Based On is # of Records, then press OK.
- 15. Double-click on the Priority Date: Dates/Extract Years label (near the top left) to sort the columns by year.
- 16. Select interesting cells on the matrix: As you review the matrix you may find cells that are of interest. For example, we found recent patenting activity from Jiangsu Hengrui Medicine and a few other organizations. Click and drag to draw a box around those cells, or use control-click to select multiple cells.
- 17. Right-click on a selected cell and choose Add Row Selections to Group. Create a group name such as "selected" and press OK. You may repeat these two steps to add several selections to the group.
- 18. Send this new field back to BizInt Smart Charts using File | Export Fielded Records. In the Export Wizard, click Deselect All and then click the checkbox for Selected Assignees. Click OK to export.

BIZINT SMART CHARTS FOR PATENTS

- 19. Choose your original chart and the new Selected Assignees field will be created as a separate column.
- 20. View | Sort on the Selected Assignees, using a descending sort. This will put blank cells at the bottom. You can hide the blank rows by selecting the range and using Edit | Hide Rows.
- 21. If not already visible, use View | Columns to add Patent Family to the chart. Double click on the column header and ensure that the Link Patent Numbers option is set. Under Options | Full-text patent links select Patentscope for WO documents.
- 22. Export the chart to HTML, and click on WO publication numbers to find addresses for the assignees.

Cookbook of Disualizations & Reports

Creating a Timeline Showing Patent Lifetimes [Patents PT-5]

Based on a recipe first presented at the 2014 PIUG Annual Meeting

This recipe helps you show patents over time, classified by a mix of status and patent type. The color of each bar can represent status, taken from Orbit (green bars are GRANTED and in effect, the red bars are DEAD). Pending applications are further classified by patent type from Thomson Reuters Cortellis: therapeutic (blue); diagnostic (purple); or all other types (grey).

Software for Business Intelligence

BizInt Smart Charts





Creating a Timeline Showing Patent Lifetimes [Patents PT-5] How did we create this?

SEARCHES:

- Cortellis Patents: search for patents for indication Rabies Infection: 170 records
- Orbit.com: transfer all basic publication numbers from the Cortellis result: 168 records

BIZINT SMART CHARTS FOR PATENTS - create your combined chart

- 1. Import each set of search results into BizInt Smart Charts and use the File | Combine feature to create a combined chart.
- 2. Make the columns Calculated Expiry Date, Priority Date, State, Status, and Patent Type visible using View | Columns.
- 3. Save the chart and select File | Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS - select dates and stitch together unique fields for each family

- 4. In the wizard, you can simply press Generate to identify the patents in the same family (as opposed to running this tool in BizInt Smart Charts for Patents) and then Finish on the next panel. We're going to set the rules up next.
- 5. Right click in the Priority Date and choose **Edit Column Rule**. Change the rule for Priority Date to Earliest Date and repeat to change the rule for Calculated Expiry Date to Earliest Date as well.
- 6. You don't need to set a rule for State, Status, or Patent Type, as the standard behavior of Reference Rows is to "fill in the blanks". This will automatically link the State and Status from Orbit with the Patent Type from Cortellis in each family.
- 7. Make sure that the Common Family column is visible, as this will be used to label the timeline.
- 8. Use File | Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION - create a key for color coding the families in the timeline

- 9. If the file does not launch automatically in VP-SCE, then import the .vpxi file into VP-SCE using File | Import.
- 10. Extract the year for the priority date and expiry date: right-click on Priority Date, and choose Further Processing | Dates | Extract Years. Use Sheets | Summary to return to the summary and repeat this step for the Calculated Expiry Date field.
- 11. Combine the State, Status, and Patent Type fields: We want to color code our timeline by a combination of the Status and the Patent Type, so we want to start by creating a field that combines the three values. Using Scripts | Concatenate Fields, choose State as the first field and Status as the second field. Type "-" as the field separator. Then concatenate the new field with Patent Type in the same way. We refer to the resulting field as the "category" field below.
- 12. **Combine Priority Year and Common Family:** *Optional* To sort the publications in year order, concatenate Priority Date: Dates/Extract Years with Common Family. Call the field "Year+Family". This will be the label on each row in the table.
- 13. Assign States and Patent Types to groups: The timeline script uses groups to color the bars. Open the category field you created above. You can group the rows any way you want (up to five groups), but only assign one group to each item.
- For the example on the left, the first group we created was for all families with State DEAD. In the category field, use Edit Find to find "dead", Select All, and Add To Group using the group name Dead. Do the same for Granted (but press Clear Selection between groups).
- 15. Next we want to find create a group with therapeutic and product types. Once again select Edit | Find, make sure the Use Regular Expression box is checked, and enter "therap|product" in the search area (the vertical bar means OR). At the same time, we don't want to match the Granted or Dead items. Click Advanced to expose additional search terms. Type "granted|dead" in the first search term, and choose And Not as the operator. Select All and Add to Group with the name "Therapy". Repeat this process for our Diagnostic types, using the search "diagnost|screen".
- 16. Finally we want to group the items that weren't assigned to any of the other groups. Right click in the category list and choose Sort Ungrouped. This will move the items without any group to the top of the list. Select all of the ungrouped items, right click, and Add Selection to Group... using the name "Other".
- 17. Rearrage group items: If you would like the colors to be assigned differently to the groups you created, you can use Groups [Edit Groups... to rearrange the order of the groups.
- 18. Create the trial timeline: Select Scripts | Timeline Gantt. Select Year+Family as the field to chart (this will be the label on the left side). Select the fields for the priority year and calculated expiry year, and select the category field as the Category field. Enter a title for the timeline graphic, such as "Patent Timeline", and press OK.
- 19. You can save the timeline as a .jpg file by holding down right mouse button and selecting Save image as....

Cookbook of Disualizations & Reports



Mapping Patents by Authority [Patents PT-6]

This map shows relative density of patent records by country for a search of the sequence of poly ADP ribose polymerase (PARP) and a matching family search on Orbit.com. The records were combined with BizInt Smart Charts for Patents and BizInt Smart Charts Reference Rows was used to create a combined patent family table including unique family members from both sources. Then a single record for each patent family was sent to VantagePoint – Smart Charts Edition (VP-SCE). VP-SCE was used to extract patent authority codes and generate the map.



Map of Country Fields

Cookbook of Disualizations & Reports

BizInt Smart Charts

Software for Business Intelligence

Mapping Patents by Authority [Patents PT-6] How did we create this?

SEARCHES:

- GenomeQuest sequence search for poly ADP ribose polymerase (PARP) from GQPAT and/or GENESEQ.
- Orbit.com families corresponding to the sequences.

BIZINT SMART CHARTS FOR PATENTS

- 1. Import each set of search results into BizInt Smart Charts and use File Combine to create a combined chart.
- 2. Run the Identify Common Patent Families tool and sort by the Common Family field. Review and make changes if needed.
- 3. Display the Patent Family column.
- 4. Save the chart and select File Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS (VERSION 1.2 OR HIGHER)

- 5. Include unique family members from both sources: On the third panel of the wizard, select the Patent Family column and click the Edit button to choose the Summarize Unique Values rule to include all unique family members from each source. When the wizard finishes, you will see the Selection View. Green check marks indicate the items selected by the database ranking and rules.
- 6. Use File Export to export the visible columns to VantagePoint XML.

VANTAGEPOINT - BIZINT SMART CHARTS EDITION

- 7. If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into VP-SCE using File | Import. Save your .vpt file.
- 8. Extract authority codes: Right-click on the Patent child field under Patent Family and select Further Processing | Patent Numbers | Read Country Code.
- 9. Tag Extracted field as a Country field: Use Sheets | Summary to return to the summary. Right-click on the Patent: Patent Numbers/Read Country Code field and choose Set Meta Tags. Select Country on the right-hand column and click the left arrow button and then click OK.
- 10. Create the Map: From the Scripts menu, select World Map. A world map will automatically be generated. You can click on the title to edit or click on a country to zoom and double-click to zoom out.

Cookbook of Disualizations & Reports

Software for Business Intelligence BizInt Smart Charts

Summarizing Sequence Locations in a Patent Family [Patents PT-8]

In this example, we've used two new features in BizInt Smart Charts Reference Rows -- the "Create Subtable from Columns" tool and "Summarize All Values" rule -- to create a subtable summarizing key columns for sequences grouped by the Common Patent Family tool.

| | Title | Database | Pate | nt Fai | mily | Patent Seque | nce Location | | | | |
|-----|---|---|----------------------------|----------|----------------------|--------------------|--|------------|-------------------|------------------------------------|------|
| | Inte | Database | Patent | Kind | Date | Sequence ID | Location | | | | |
| 9. | TRANSLOCATION AND MUTANT ROS KINASE IN | 9.1 FAMPAT | WO 200784631 EP 1973946 | A2 A2 | 20070726 | WO20070084631-0006 | Claim 1; SEQ ID NO 6; 127pp; English. | 9.3 | | | |
| | HUMAN NON-SMALL CELL LUNG CARCINOMA | 9.3 GENESEQ Iii | wO 200784631 | A3 | 20081231 | WO20070084631-0005 | Claim 10; SEQ ID NO 5; 127pp; English. | 9.4 | | | |
| | | 9.4 GENESEQ Iii | nk CN 101528921 | A | 20090625 | US20100143918-0005 | claim: 1; 8 | 9.5 | | | |
| | | 9.5 GPATPRT lin 9.6 GPATPRT lin | US 20100143918 | A1 A4 | 20100610 20100811 | EP1973946-0005 | Claim: 1; 10 TBD (information not | 9.6 9.7 | | | |
| | 9.7 GPATPRT link US 20100298404 A1 20101125 JP2009523446-0017 TBD in Gl 9.8 GPATPRT link US 20100298404 A1 20101125 JP2009523446-0017 TBD in Gl 9.9 GPATPRT link US20120208824-0003 prob 9.10 GPATNUC link US20120208824-0004 prob 9.11 GPATNUC link US20120208824-0004 prob 9.12 GPATNUC link US20120208824-0004 prob 9.13 GPATNUC link uto auto | TBD (information not | 9.8 | | | | | | | | |
| | | probable disclosure (not found by automated parsing) | 9.9 | | | | | | | | |
| | | 9.11 GPATNUC <i>lir</i> 9.12 GPATNUC <i>lir</i> 9.13 GPATNUC <i>lir</i> | nk nk | | | US20120208824-0004 | probable disclosure (not found by automated parsing) | 9.10 | | | |
| | | 9.14 GPATNUC Iir | nk | | | | | | JP2009523446-0003 | TBD (information not in GQ-Pat) | 9.11 |
| | | | | | | EP1973946-0006 | TBD (information not in GQ-Pat) | 9.12 | | | |
| | | | | | | US20100298404-0006 | claim: 1 | 9.13 | | | |
| 2 | | | | | | US20100143918-0006 | claim: 1 | 9.14 | | | |
| | 9.1 FAMPAT | | | | 9.1 FAMPAT | | | | | | |
| 10. | METHOD FOR PREDICTION OF | 10.1 FAMPAT | WO 200743418 | A1 | 20070419 | WO20070043418-0014 | Claim 12; SEQ ID NO 14; 95pp; Japanese. | 10.2 | | | |
| | POSTOPERATIVE PROGNOSIS FOR | 10.2 GENESEQ Iii | nk 31 2007037480 1k | | 20070413 | JP2007097486-0014 | TBD (information not in GQ-Pat) | 10.3 | | | |
| | PATIENT WITH PULMONARY ADENOCARCINOMA, AND COMPOSITION FOR USE IN THE PREDICTION | 10.4 GPATNUC lin | nk | | | WO2007043418-0014 | TBD (information not in GQ-Pat) | 10.4 | | | |
| | 10.1 FAMPA1 | | | | 10.1 FAMPAT | | | | | | |

SUBTABLE SUMMARIZING RELATED SEQUENCES.

Cookbook of Disualizations & Reports

Software for Business Intelligence BizInt Smart Charts

Summarizing Sequence Locations in a Patent Family [Patents PT-8] How did we create this?

SEARCHES:

- GenomeQuest sequence search from GQPAT and/or GENESEQ.
- Orbit.com families corresponding to the sequences.

BIZINT SMART CHARTS FOR PATENTS (VERSION 3.5.6 OR HIGHER)

- 1. Import each set of results into BizInt Smart Charts for Patents to create .chp files.
- 2. Use the File Combine feature to create a single combined chart. Run the Identify Common Patent Families tool.
- 3. Display the Seq. ID Number and Patent Sequence Location columns (View | Columns).
- 4. Change the title on the Patent Sequence Location column to "Location" (by double-clicking on the column header). Repeat to rename the Seq. ID Number column to "Sequence ID".
- 5. Save the .chp file.
- 6. Send the chart to Reference Rows using the toolbar icon (or File | Send to Reference Rows).

BIZINT SMART CHARTS REFERENCE ROWS (VERSION 1.0.6 OR HIGHER)

- 7. During the Create Reference Rows wizard, make sure that FAMPAT is listed as the first database.
- 8. When the wizard finishes, run Tools | Create Subtable from Columns.
- 9. Select the Sequence ID and Location columns in that order and press Apply. A new column will be created.
- 10. Double click on the column header to rename the new column from Untitled Subtable to "Patent Sequence Location".
- 11. Hide the original Sequence ID and Location columns.
- 12. Use Reference Rows | Column Rules... to set the rule for the new column to Summarize All Values.
- 13. Use File Export to export the report to HTML and see the subtable column summarizing the Sequence ID and Location data.

Cookbook of Disualizations & Reports



Creating Clinical Trial Timelines Showing Trial Status [Trials CT-1]

This recipe shows how you can build trial timelines using fields beyond phase. In this example we will map trials by status for trials with drugs targeting poly ADP ribose polymerase (PARP), a target in trials for cancer. A search for selected PARP drugs was conducted in ClinicalTrials.gov, Citeline TrialTrove, and Adis Clinical Trials Insight. BizInt Smart Charts Reference Rows was used to build a more complete single record for each trial using information from all three sources. We then exported to VantagePoint – Smart Charts Edition (VP-SCE) to normalize and extract the data and generate the timeline. A thesaurus is used to group each trial into a normalized status which determines the color coding for the timeline. The same technique is applicable to trials aspects beyond phase and trial status, feel free to contact us about extending this or any recipe.





Creating Clinical Trial Timelines Showing Trial Status [Trials CT-1] How did we create this?

SEARCHES:

 Clinical Trials: We searched ClinicalTrials.gov, Citeline TrialTrove and Adis Clinical Trials Insight for trial records for Niraparib, BMS-673 & Rucaparib (and synonyms) -- three Phase III PARP drugs identified in the pipeline recipe. Trial field names in this recipe are from ClinicalTrials.gov.

RECIPES: Cleaning up Drug Names in Trial Data using Pipeline sourced Synonyms

BIZINT SMART CHARTS FOR CLINICAL TRIALS - create your combined chart

- 1. Import each set of search results into BizInt Smart Charts and use the File Combine feature to create a combined chart.
- 2. Use Tools | Generate Common Trial IDs and then sort by the Common Trial ID column.
- 3. Scroll through the chart to review the matched trials (row shading indicates each set of trials) and revise if necessary by manually editing the Common Trial ID. Re-sort by Common Trial ID.
- 4. Make the columns Primary Completion Date, Start Date, and any columns you wish to use to color code your timeline visible using View | Columns. For this recipe we will use Overall Status. *Fields may be combined with Common Trial ID in VP-SCE to create a more informative timeline*. If you wish to use any additional columns in your timeline, such as Drugs or Company field, make them visible as well. We will use the Drugs field.
- 5. Save and select File Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS - select earliest start date and latest completion date for each trial

- 6. In the wizard, click Next and then click Finish. DO NOT Regenerate the Common Trial IDs if you edited any Common Trial IDs in Step 3.
- 7. Right click in the Start Date column and choose Edit Column Rule. Change the rule for Start Date to Earliest Date and repeat to change the rule for Primary Completion Date to Latest Date.
- 8. Make sure that the Common Trial ID, Start Date, Primary Completion Date, Overall Status, Drugs, and any other fields you plan to use are visible.
- 9. Use File | Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION - clean up the data and create the trial timeline

- 10. If the file does not launch automatically in VP-SCE, then import the .vpxi file into VP-SCE using File Import.
- 11. Extract the year for the start date and completion date: From the Summary sheet, right-click on Start Date, and select Fields | Further Processing | Dates | Extract Years. Repeat this step for the Primary Completion Date field.
- 12. Create groups for the timeline: Go to Sheets Add List and select the Overall Status list, and choose Groups Group using Thesaurus.... Click Next to skip step 1. Then click Browse and select the TrialStatus thesaurus to group the trials by status.
- 13. To have the timeline reflect the correct status order you may need to reorder the groups. Go to **Groups | Edit Groups** and click on group names and use the arrow buttons to reorder as needed. *Any field may be used here, as long as you create groups, either by thesaurus, as above, or manually by selecting rows and selecting Add Selection to Group... from the right-click menu.*
- 14. Create trial labels for your timeline: You can combine Common Trial ID with another field to create a trial label. In this recipe we use drug names, cleaned using the recipe, Cleaning up Drug Names in Trial Data using Synonyms from Pipeline Sources. Whatever field you choose does not need to be unique, but there should be only one value per trial.
- 15. Using Scripts | Concatenate Fields, choose the cleaned Drugs field created with the companion recipe as the first field and Common Trial ID as the second field. Type " " (hyphen with a space on either side) as the field separator. Name the new field "Drug + Trial ID" and click OK.
- 16. Create the trial timeline: Select Scripts | Timeline Gantt. Select Drug + Trial ID as the field to chart. Select the fields for the start and completion years, and from the Select Category Field drop-down select the field where you have created groups, in this case Overall Status. Enter a title for the timeline graphic, such as "PARP trials by status", and click OK.
- 17. You can save the timeline as a .jpg file by right-clicking on the timeline and selecting Save image as....

Cookbook of Disualizations & Reports

Creating Clinical Trial Timelines Showing Enrollment & Study Design [Trials CT-3]

This recipe shows how you can build trial timelines using any field. In this example we will map trials by study type classification and enrollment for trials with drugs targeting poly ADP ribose polymerase (PARP), a target in trials for cancer. The same technique is applicable to other trials aspects as well, feel free to contact us about extending this or any recipe.

Software for Business Intelligence

BizInt Smart Charts

A search for selected PARP drugs was conducted in ClinicalTrials.gov, Citeline TrialTrove, and Adis Clinical Trials Insight. BizInt Smart Charts Reference Rows was used to build a more complete single record for each trial using information from all three sources. We then exported to VantagePoint – Smart Charts Edition (VP-SCE) to normalize and extract the data and generate the timeline.





Creating Clinical Trial Timelines Showing Enrollment & Study Design [Trials CT-3] How did we create this?

SEARCHES:

• Clinical Trials: We searched Clinical Trials.gov, Citeline Trial Trove and Adis Clinical Trials Insight for trial records for Niraparib, BMS-673 & Rucaparib (and synonyms) -- three Phase III PARP drugs identified in the pipeline recipe. *Trial field names in this recipe are from Clinical Trials.gov.*

RECIPES: Cleaning up Drug Names in Trial Data using Pipeline sourced Synonyms **FILE**: study_classification_kw.txt (Contact support@bizcharts for the file and installation directions)

BIZINT SMART CHARTS FOR CLINICAL TRIALS - create your combined chart

- 1. Import each set of search results into BizInt Smart Charts and use the File Combine feature to create a combined chart.
- 2. Use Tools Generate Common Trial IDs and then sort by the Common Trial ID column.
- 3. Scroll through the chart to review the matched trials (row shading indicates each set of trials) and revise if necessary by manually editing the Common Trial ID. Re-sort by Common Trial ID.
- 4. Make the Primary Completion Date, Start Date, Drugs and both Study Design columns visible using View | Columns.
- 5. Save and select File Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS - select earliest start date and latest completion date for each trial

- 6. In the wizard, DO NOT Regenerate the Common Trial IDs if you edited any Common Trial IDs in Step 3.
- 7. Right click in the Start Date column and choose Edit Column Rule. Change the rule for Start Date to Earliest Date and repeat to change the rule for Primary Completion Date to Latest Date and Enrollment to Most Recently Updated.
- 8. Use File | Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION - clean up the data and create the trial timeline

- 9. If the file does not launch automatically in VP-SCE, then import the .vpxi file into VP-SCE using File | Import.
- 10. Extract the year for the start date and completion date: From the Summary sheet, right-click on Start Date, and select Fields | Further Processing | Dates | Extract Years. Repeat this step for the Primary Completion Date field.
- 11. Import the keywords list: Use View | My Keywords to display it if not already checked. Click on the key icon in the top right of the My Keywords panel and select Import Keyword Lists. Choose study_classification_kw.txt. If you don't have the file, contact support@bizcharts.com.
- 12. Extract study design terms: Use Key Icon | Extract My Keywords From and choose Study Design. This will create a new field Study Design : study_classification_kw.
- 13. Create study design groups Right-click on each item in the new field and select Add Selection to Group and use the name of the term as it should appear in the color key for the timeline.
- 14. To have the timeline reflect the correct status order you may need to reorder the groups. Go to Groups | Edit Groups and click on group names and use the arrow buttons to reorder as needed.
- 15. Create enrollment groups: Use Sheets | Add List and select Enrollment to view enrollment numbers.
- 16. Decide on ranges of enrollment numbers to use. Select all the rows in a range, then right-click and add selection to group. Name the group as it should appear in the key, such as "<25" or "25-100". Repeat until all rows are in a group.
- 17. Create trial labels for your timeline: You can combine Common Trial ID with another field to create a trial label. In this recipe we use drug names, cleaned using the recipe, Cleaning up Drug Names in Trial Data using Synonyms from Pipeline Sources. Whatever field you choose does not need to be unique, but there should be only one value per trial.
- 18. Using Scripts | Concatenate Fields, choose the cleaned Drugs field created with the companion recipe as the first field and Common Trial ID as the second field. Type " - " (hyphen with a space on either side) as the field separator. Name the new field "Drug + Trial ID" and click OK.
- Create the trial timelines: Select Scripts | Timeline Gantt. Select Drug + Trial ID as the field to chart. Select the fields for the start and completion years, and from the Select Category Field drop-down select Study Design : study_classification_kw. Enter a title for the timeline graphic, such as "PARP: Study Design", and click OK.
- 20. Repeat the previous step, this time selecting Enrollment as the Category Field.
- 21. You can save a timeline as a .jpg file by right-clicking on the timeline and selecting "Save image as..."

Cookbook of Disualizations & Reports



Summarizing Clinical Trials Across Databases – Enrollment [Trials CT-4]

Other recipes in this Cookbook show how you can create trial timelines grouped by any aspect of the data, including enrollment. But which enrollment number do you use? This recipe shows how you can use Reference Rows to build a single row for each trial that includes a summary table showing enrolloment number and update date from each database. The chart used here is the same set of trials for drugs targeting PARP used in the trial timeline recipes in this Cookbook.

The same technique can be applied to other columns as well. Try it with Start and End dates and you can see why it is informative to incorporate multiple sources.

| T -1 T -1 - | | Common Trial | - 1012) | • - · · · • • | Enrollment | Enrollment - Database Summary | | | |
|---------------------------|--|--------------|---------------------------------------|--|------------------------|----------------------------------|----------------------------------|----------------------|------|
| | Trial Title | ID | Database | Countries | (Most Recent Trial) | Database | Enrollment | Last Changed Date | |
| 21. | Rucaparib(CO- 338;Formally Called | NCT00664781 | 21.1 NCT link | United Kingdom | 114 | ClinicalTrials.Gov | 84 (Anticipated) | 2013-10-07 | 21.1 |
| | AG-014699 or PF-0136738) in | | 21.3 TROVE link | England Multinational | | Adis Clinical Trials Database | 114 | 2013-11-11 | 21.2 |
| | With Locally Advanced or Metastatic Breast Cancer or Advanced Ovarian Cancer | | | Scotland | | Citeline TrialTrove | 84-114 | 2013-10-12 | 21.3 |
| | 21.1 NCT | | | | 21.2 ACT3 | | | | |
| 22. | PARP Inhibition for Triple Negative | NCT01074970 | 22.1 NCT link | United States USA | 135 | ClinicalTrials.Gov | 135 (Anticipated) | 2013-09-12 | 22.1 |
| | Breast Cancer (ER-/PR-/HER2-)With BRCA1/2 Mutations | | 22.3 TROVE link | | | Adis Clinical Trials Database | 135 | 2013-09-19 | 22.2 |
| | | | | | | Citeline TrialTrove | 135-250 patients | 2013-07-06 | 22.3 |
| | 22.1 NCT | | | | 22.2 ACT3 | | | | |
| 23. | A Phase 2 Study | NCT00457470 | 23.1 NCT link | Unknown | 80 | ClinicalTrials.Gov | 80 | 2007-06-25 | 23.1 |
| | And Efficacy Of Novel Drug Treatment In | | 23.2 ACT3 link 23.3 TROVE link | onited otates | | Adis Clinical Trials Database | 80 | 2013-12-31 | 23.2 |
| | Subjects With Diabetic Macular Edema (DME) | | | | | Citeline TrialTrove | 80 | 2012-08-01 | 23.3 |
| | 23.1 NCT | | | | 23.2 ACT3 | | | | |
| 24. | A Study Of Poly (ADP-Ribose) | NCT01009190 | 24.1 NCT link | France Italy | 60 | ClinicalTrials.Gov | 60 (Anticipated) | 2013-11-06 | 24.1 |
| | PF-01367338 In Combination With | | 24.3 TROVE link | Kingdom England | | Adis Clinical Trials Database | 60 | 2013-11-22 | 24.2 |
| | Several Chemotherapeutic Regimens | | | Ireland Multinational Northern Ireland Scotland United States | | Citeline TrialTrove | 65 (30 patients in France) | 2013-11-12 | 24.3 |
| | 24.1 NCT | | | | 24.2 ACT3 | | | | |



Summarizing Clinical Trials Across Databases – Enrollment [Trials CT-4] How did we create this?

SEARCHES:

• Clinical Trials: We searched Clinical Trials.gov, Citeline Trial Trove and Adis Clinical Trials Insight for trial records for Niraparib, BMS-673 & Rucaparib (and synonyms) -- three Phase III PARP drugs identified in the pipeline recipe.

BIZINT SMART CHARTS FOR CLINICAL TRIALS

- 1. Import each set of search results into BizInt Smart Charts and use File Combine to create a combined chart.
- 2. Run the Generate Common Trial IDs tool and sort by Common Trial ID. Review and make changes if needed.
- 3. Display the Enrollment and Last Changed Date columns.
- 4. Save the chart and send to Reference Rows using the toolbar icon (or File | Send to Reference Rows).

BIZINT SMART CHARTS REFERENCE ROWS (VERSION 1.0.6 OR HIGHER)

- 5. During the Create Reference Rows wizard, make sure that Clinicaltrials.gov is listed as the first database.
- 6. When the wizard finishes, you will see the Selection View. Green check marks indicate the items selected by the database ranking and rules.
- 7. Create the Subtable: In the Selection View, run Tools Create Subtable from Columns.
- 8. Select the Database, Enrollment and Last Changed Date columns in that order and press Apply. A new column will be created containing a subtable with these three columns.
- 9. Double click on the column header to rename the new column from Untitled Subtable to "Database Enrollment Update Date".
- 10. Set the Export to Show Enrollment from all Sources: Use Reference Rows | Column Rules... to set the rule for the new column to Summarize All Values. Blue hash marks will appear in the cells.
- 11. Hide any columns you do not want displayed in your final report.
- 12. Use File Export to export the report to HTML and see the selected enrollment from a single database and the summary subtable.

Cookbook of Disualizations & Reports

Summarizing Clinical Trials by Country – Enrollment [Trials CT-10]

Software for Business Intelligence

BizInt Smart Charts

The EudraCT (EU Clinical Trials) database provides trial records for a trial in each member county. BizInt Smart Charts tools help you identify related trials and summarize the data for all EU trials in a single row. In this example, we create a summary table showing the enrollment in each member state for each trial. Other columns show the total enrollment and other data selected from one of the records.

Pertussis Trials - Enrollment in EU (EudraCT - Oct2015)

| | | Betelsee | EU Trial Summary | | | Enrollment | | Bernstetter | Study Design | |
|----|--|---|--|--------------------------|--------------------------|------------|------------|--|---|--|
| | mandentifier | Database | Member State | Enrollment in State | | (Total) | Phase | Population | study Design | |
| 1. | EudraCT 2004-001175-19 102247 | 1.1 EUDRACT link 1.2 EUDRACT link 1.3 EUDRACT link 1.4 EUDRACT link | Spain - AEMPS Italy - Italian Medicines Agency Finland - Fimea Czech Republic - SUKL | 345 2490 300 | 1.1 1.2 1.3 1.4 | 3990 | Phase III | Infants and toddlers Healthy volunteers | Prophylaxis Safety Efficacy Controlled Randomised Double blind Parallel group | |
| | 1.1 EUDRAC | | | | | 1.1 EUDRAC | 1.1 EUDRAC | 1.1 EUDRAC | 1.1 EUDRAC | |
| 2. | EudraCT 2005-001288-73 104703, 104704 | 2.1 EUDRACT link 2.2 EUDRACT link | Austria - BASG Germany - PEI | 100 400 | 2.1 | 500 | Phase II | Infants and toddlers Children Healthy volunteers Subjects incapable of giving consent personally | Prophylaxis Safety Dose response Controlled Randomised open, partially double-blind | |
| | 2.1 EUDRAC | | | | | 2.1 EUDRAC | 2.1 EUDRAC | 2.1 EUDRAC | 2.1 EUDRAC | |
| 3. | EudraCT 2005-003508-12 010 | 3.1 EUDRACT link 3.2 EUDRACT link 3.3 EUDRACT link | Belgium - FPS Health-DGM Austria - BASG Germany - PEI | 100 60 372 | 3.1 3.2 3.3 | 522 | Phase IV | Infants and toddlers Healthy volunteers | Safety Controlled Randomised Double blind | |
| | 3.1 EUDRAC | | | | | 3.1 EUDRAC | 3.1 EUDRAC | 3.1 EUDRAC | 3.1 EUDRAC | |
| 4. | EudraCT 2010-019730-27 113994 | 4.1 EUDRACT link 4.2 EUDRACT link 4.3 EUDRACT link 4.4 EUDRACT link | Germany - PEI Czech Republic - SUKL Poland - Office for Medicinal Products Sweden - MPA | 100 250 400 100 | 4.1 4.2 4.3 4.4 | 600 | Phase II | Infants and toddlers Healthy volunteers Subjects incapable of giving consent personally | Prophylaxis Safety Efficacy Controlled Randomised Parallel group observer blind | |
| | 4.1 EUDRAC | | | | | 4.1 EUDRAC | 4.1 EUDRAC | 4.1 EUDRAC | 4.1 EUDRAC | |
| 5. | EudraCT 2012-001042-18 A3L40 U1111-1122-2362 | 5.1 EUDRACT IInk 5.2 EUDRACT IInk 5.3 EUDRACT IInk | Germany - PEI Czech Republic - SUKL Spain - AEMPS | 265 265 265 | 5.1 5.2 5.3 | 795 | Phase III | Infants and toddlers Healthy volunteers Subjects incapable of giving consent personally | Prophylaxis Safety Efficacy Controlled Randomised blind-observer (group 1 and group 2) and open-label (group 3) | |
| | 5.1 EUDRAC | | | | | 5.1 EUDRAC | 5.1 EUDRAC | 5.1 EUDRAC | 5.1 EUDRAC | |



Summarizing Clinical Trials by Country - Enrollment [Trials CT-10] How did we create this?

SEARCHES:

Clinical Trials: We searched EudraCT (EU Clinical Trials) for pertussis trials and downloaded each page of trials.

BIZINT SMART CHARTS FOR CLINICAL TRIALS (VERSION 4.1 OR HIGHER)

- 1. Import each set of search results into BizInt Smart Charts and use File | Combine to create a combined chart.
- 2. Run the Generate Common Trial IDs tool and sort by Common Trial ID. Review and make changes if needed.
- 3. Display the Member State and Enrollment in State columns.
- 4. Save the chart and send to Reference Rows using the toolbar icon (or File | Send to Reference Rows).

BIZINT SMART CHARTS REFERENCE ROWS (VERSION 1.0.6 OR HIGHER)

- 5. When the Create Reference Rows wizard finishes, you will see the Selection View. Green check marks indicate the items selected by the database ranking and rules.
- 6. Create the Subtable: In the Selection View, run Tools | Create Subtable from Columns.
- 7. Select the Member State and Enrollment in State columns in that order and press Apply. A new column will be created containing a subtable with these two columns.
- 8. Double click on the column header to rename the new column from Untitled Subtable to "EU Trial Summary".
- 9. Change the column rule to summarize enrollment for each trial: Use Reference Rows | Column Rules... to set the rule for the new column to Summarize All Values. Blue hash marks will appear in the cells.
- 10. Hide any columns you do not want displayed in your final report.
- 11. Use File Export to export the report to HTML and see the summary subtable.

Cookbook of Disualizations & Reports

Software for Business Intelligence BizInt Smart Charts

Charting Trial Indications by Phase with a Bubble Chart [Trials CT-9]

This is one example of a bubble chart created with VantagePoint – Smart Charts Edition (VP-SCE) using data exported from BizInt Smart Charts for Drug Pipelines. For another example with pipeline data, see Charting Indications by Phase with a Bubble Chart. Here the chart shows clinical trial indications by phase based on records from ClinicalTrials.gov, Citeline TrialTrove, and Adis Clinical Trials Insight. The subject of the search was trials with selected poly ADP ribose polymerase (PARP) inhibitors. A single record for each trial was created with BizInt Smart Charts Reference Rows and then exported to VP-SCE where we normalized trial phases and used the list cleanup tool to clean indications by creating a custom thesaurus. Then we used VP-SCE to generate the chart.



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Software for Business Intelligence

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Charting Trial Indications by Phase with a Bubble Chart [Trials CT-9] How did we create this?

Note: This recipe is for VP-SCE 9.1 users; if you are using an earlier version, please refer to the October 2015 Cookbook.

SEARCHES:

• We searched Citeline TrialTrove and Adis Clinical Trials Insight for trial records for Niraparib, BMS-673 & Rucaparib (and synonyms) -- three Phase III PARP drugs identified in the pipeline recipe. *Trial field names in this recipe are from ClinicalTrials.gov.*

BIZINT SMART CHARTS FOR CLINICAL TRIALS

- 1. Import each set of search results into BizInt Smart Charts and use the File Combine feature to create a combined chart.
- 2. Run the Generate Common Trial IDs tool and sort by the Common Trial ID field.
- 3. Display the Conditions and Phase columns.
- 4. Save the file and select File Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS

- 5. Change the rule for Conditions to Summarize All Values.
- 6. Use File Export to export the visible columns to VantagePoint XML.

VANTAGEPOINT - SMART CHARTS EDITION

- 7. If the file does not launch automatically in VP-SCE, then import the .vpxi file into VP-SCE using File | Import. Save your .vpt file.
- 8. Ensure phase order sort: Right-click on the Phase field and choose Set Data Type | Phase.
- 9. Right-click on Phase and select Thesaurus... and choose the DrugDevelopmentPhases.the file.
- 10. Cleanup Indications (Conditions): If there are conditions containing data in parentheses, apply Fields | Further Processing | Read Until - First | Paren to remove qualifiers in parenthesis.
- 11. Go to Fields List Cleanup... and select Condition: Read Until First/Paren from the field list. Select the General.fuz file, and click Use.
- 12. Use the Cleanup Confirm panel to clean up indications.
- 13. Cleanup Confirm provides different tools, you can:

- Enter keywords or partial keywords in the Find box, click the Add button, and switch the display to Custom Set of Items. To search additional keywords you can Add to the list or use Remove All to clear the Custom Set.

- Drag and drop terms onto other terms to group them.
- Cut a term and Paste it onto another term to do the same thing.
- Right-click on a term and select Rename Term.
- 14. If you're working in this area often, consider saving the cleanup as a Thesaurus.
- 15. Select the top conditions, then right click to select Add Selection to Group.... In the New Group panel, type the word "top" and click OK. You may also want to uncheck generic indications like "Cancer" or "Unspecified solid tumor."
- 16. Save your .vpt file.
- 17. Create the Bubble Chart: From the Scripts menu, select Bubble Chart and a Browser window will open with options for the script.
- 18. For step 1, select the cleaned conditions field: Condition: Read Until First/Paren (Cleaned) and change the radio button to Select a group. The field name will be different depending on the processing steps you used earlier.
- 19. For step 2, change the radio button to Select Any, and select Phase (1) from the drop-down.
- 20. For step 3, you can check the box to show record count in the bubbles and then scroll to the bottom of the window and click OK. A bubble chart showing conditions by phase will be created.

Cookbook of Disualizations & Reports



Mapping Trial Locations [Trials CT-7]

This map shows relative density of clinical trials by country for trials of poly ADP ribose polymerase (PARP) inhibitors. It was built using a search of ClinicalTrials.gov, Citeline TrialTrove, and Adis Clinical Trials Insight. The records were combined with BizInt Smart Charts for Drug Pipelines and BizInt Smart Charts Reference Rows was used to send a single record per trial to VantagePoint – Smart Charts Edition (VP-SCE). VP-SCE was used to normalize country terminology and generate the map.



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Mapping Trial Locations [Trials CT-7] How did we create this?

Note: This recipe is for VP-SCE 9.1 users; if you are using an earlier version, please refer to the October 2015 Cookbook.

SEARCHES:

 Clinical Trials: We searched ClinicalTrials.gov, Citeline TrialTrove and Adis Clinical Trials Insight for trial records for Niraparib, BMS-673 & Rucaparib (and synonyms) -- three Phase III PARP drugs identified in the pipeline recipe. *Trial field names in this recipe are from ClinicalTrials.gov.*

BIZINT SMART CHARTS FOR CLINICAL TRIALS

- 1. Import each set of search results into BizInt Smart Charts and use File Combine to create a combined chart.
- 2. Run the Generate Common Trial IDs tool, and then sort by the Common Trial ID column.
- 3. Scroll through the chart to review the matched trials (every time the row shading changes, you're in a new group). Most of the groups should be sensible - one to three records on a trial. If you see groups containing larger numbers of records, you may want to make the Trial ID column visible, so you can review Common Trial ID assignment and in some cases manually edit the Common Trial ID column as appropriate.
- 4. Re-sort by Common Trial ID.
- 5. Make the Countries column visible.
- 6. Save your chart and select File | Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS

- 7. In Step 1 of the wizard, DO NOT Regenerate the Common Trial IDs if you edited the Common Trial IDs in Step 3.
- 8. Change the rule for Countries to Most content (lines).
- 9. Use File Export to export the visible columns to VantagePoint XML.

VANTAGEPOINT - SMART CHARTS EDITION

- 10. If the file does not launch automatically in VP-SCE, then import the .vpxi file into VP-SCE using File | Import. Save your .vpt file.
- 11. **Tag Countries as a Country field:** Right-click on Countries and choose Set Meta Tags. Select Country on the right-hand column and click the left arrow button and then click OK.
- 12. Double-click on Countries to view the list. VP-SCE uses a thesaurus to normalize countries which can handle common variations, so you may skip to the final step and use the Countries field directly if you wish, but you won't have the same level of control.
- 13. Bring up the Fields | List Cleanup... panel. Select Countries from the field list on left. Select the General.fuz fuzzy match file, and click Use.
- 14. Change the radio button to Display All Items and click on Item Name to sort. Manually match up country synonyms (like UK and United Kingdom) by drag and drop. When you are done, click Accept (do not save as thesaurus).
- 15. Choose Scripts | World Map. A world map will automatically be generated. You can click on the title to edit or click on a country to zoom and double-click to zoom out.

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Mapping Clinical Trials by State [Trials CT-8]

In this example we mapped clinical trials at the US state level. VP-SCE was used to extract locations from two different clinical trial information sources and two different types of data: fielded data in ClinicalTrials.gov and free text from Citeline TrialTrove. For the free text field, state names and abbreviations were extracted and a thesaurus used to convert abbreviations to full state names. Google Charts JavaScript was used to build the map and display it in a VP-SCE browser window.

This method can also be applied to other countries, though the level of detail supported by Google Charts varies. For Japan, for example, prefectures are supported.



Cookbook of Disualizations & Reports

Software for Business Intelligence BizInt Smart Charts

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Mapping Clinical Trials by State [Trials CT-8] How did we create this?

SEARCHES:

Clinical Trials: We searched ClinicalTrials.gov and Citeline TrialTrove for trial records for Sjögren's Syndrome.

FILES: US States and USPS Abbreviations.txt, Google Chart.vpm (Contact support@bizcharts for the files and installation directions)

BIZINT SMART CHARTS FOR CLINICAL TRIALS

- 1. Import each set of search results into BizInt Smart Charts and use File | Combine features to create a combined chart.
- 2. Save and select File Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS - display trial location fields

- 3. Go to View | Columns and add Trial Locations, Investigators / Contacts, and Location Details if not already visible.
- 4. Use File Export to export as Vantage Point XML, chart only. VantagePoint BizInt Smart Charts Edition (VP-SCE) should open and import the file.

VANTAGEPOINT - BIZINT SMART CHARTS EDITION - extract state locations and map

- 5. Isolate records with US trials: Double-click on Trial Locations to display the field and then click on the row for United States to select it.
- 6. Go to the detail window on the left hand side and shift-click to select all the US records. Right-click and select Create Sub-Dataset from selection.
- 7. Extract states: From Summary sheet right-click on the City field and select Further Processing | Read After First | Comma.
- 8. Flag records with state information: Select All rows in the new field and right-click to Add Selection Group. Name the group "CT".
- 9. Go to Scripts Move Groups and select Yes to move the new group to Investigators/Contacts.
- 10. From the Investigators/Contacts field select Field | Create Field from Group Items, select CT under Investigators/Contacts and change the radio button to Use unchecked items, naming the group "TT". This creates a new group with rows where we need to try to extract states from the Investigators/Contacts field. If there aren't many unpaired TrialTrove records you may wish to do this manually by exporting back to BizInt Smart Charts.
- 11. Make sure the My Keywords panel is visible. Look on the View menu and make sure My Keywords is checked. If you haven't used this feature before, you should see the Sample Keywords list and a blue key icon.
- 12. Click on the drop-down to the left of the key icon. Select US States and USPS Abbreviations. If it's not listed, import it: Click the blue key on the My Keywords panel and select Import Keyword List(s), then browse and open the US States and USPS Abbreviations.txt file.
- 13. Extract states from free text: Go to My Keywords, select the US states and USPS abbreviations list and from the dropdown select Extract My Keywords From | Investigators/Contacts:TT. At this point you can also export back to BizInt Smart Charts to review or continue with the mapping.
- 14. Use Fields Thesaurus and select US States.the to convert abbreviations to full state names.
- 15. Combine the state fields from both sources: Use Fields | Merge Fields and select the two fields with extracted states and edit the new field name to something shorter like "States CT+TT".
- 16. Go to Scripts Google Chart to run the mapping script. Enter "US" for country code and a number to select to map by trial count or site count.

Cookbook of Disualizations & Reports



Creating Pipeline "Piano Charts" in PowerPoint [Pipeline DP-13]

This recipe describes how to build a piano chart visualization of a drug pipeline, which shows one box for each drug, boxes colorcoded by field values, and boxes labeled by multiple fields. In this example we have color coded the boxes by delivery route and included both drug name and originator company in the boxes.

Search results were exported from InfoDesk Pipeline Plus to BizInt Smart Charts for Drug Pipelines and then integrated with Reference Rows. In Reference Rows we applied columns rules and reviewed the data to select representative values for each drug. VantagePoint - Smart Charts Edition (VP-SCE) was used to normalize company names and clean-up and simplify delivery routes.

The chart is then built using the "Create Piano Chart" dialog shown below and exported to PowerPoint (or Excel) where it can be further customized.





Creating Pipeline "Piano Charts" in PowerPoint [Pipeline DP-13]

How did we create this?

NOTE: THIS RECIPE REQUIRES NEW VP-SCE FILES DATED JUNE 2016. GO TO WWW.BIZINT.COM/PIANO FOR INSTRUCTIONS AND TO DOWNLOAD THE FILES, OR CONTACT SUPPORT@BIZINT.COM

This recipe assumes basic knowledge of using the BizInt Smart Charts tools. For more information on using the features below, refer to the BizInt Smart Charts Mini Guides, or contact support@bizint.com.

BIZINT SMART CHARTS FOR DRUG PIPELINES - create your combined chart

- 1. Import each set of search results into BizInt Smart Charts and use File Combine features to create a combined chart
- 2. Use Tools | Identify Common Drug Names.
- 3. Make the drug name, overall highest phase, company/originator, and Route of Delivery/Administration columns visible using View Columns.
- 4. Save and select File Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS - build a single row per drug to send to VP-SCE

- 5. Select your desired Database Ranking in the wizard, then click Finish to see the Selection View.
- 6. Apply Column Rules (for example, Most Recently Updated for the phase field, Least Content (characters) for the company name).
- 7. Choose content to include in the piano chart: Review the selections (indicated by green checkmarks) and edit as needed, either by right-clicking on a different cell and choosing Select this cell or by double-clicking in a cell to edit the contents.
- 8. Use File Export to export as Vantage Point XML, chart only. VantagePoint BizInt Smart Charts Edition (VP-SCE) should open and import the file.

VANTAGEPOINT - BIZINT SMART CHARTS EDITION - clean fields and build the piano chart

- 9. Clean-up fields used in the Piano Chart (drug name, company, phase, delivery route): On the Summary screen, right-click on the field name and select List Cleanup. Select the General fuzzy match file and click Use. Use the Cleanup Confirm panel to clean-up terms -- switch the radio button to All items and drag and drop to combine and then click Accept. Saving the thesaurus is optional. Repeat with the other fields. Note that a box will be created for each drug and originator pair. If you have more than one originator for a drug you will see multiple boxes for that drug. If you have more than one delivery route per drug, only the first will be used to color the boxes.
- 10. Set Phase as the Data Type for your phase field: In the Summary Sheet, right click in the Data Type column for your cleaned up Phase field, and select "Phase" from the "Set Data Type" submenu.
- 11. Build the Piano Chart: Go to Scripts | Piano Pipeline Chart. In Step 1, select the fields you want to include in your chart. Choose the drug name field for the Box Labels and your phase field for the Field for the Phase.
- 12. In Step 2, choose the cleaned originator field to add to the Boxes and the cleaned delivery route as the Field to Color Code the Boxes. Select the check box to add hyperlinks to the boxes if desired. *Note: record links in PowerPoint can be followed in the Slide Show view*.
- 13. In Step 3, enter a title for your chart. In Step 4, select the radio button for Excel or PowerPoint and click "Create Piano Chart".
- 14. VP-SCE will create a new document in PowerPoint or Excel and draw the piano chart. You can edit the chart in PowerPoint. In Excel, use the option to Copy as Picture to create an image that you can paste into another application. You can also save the selection as a PDF from Excel.

Cookbook of Disualizations & Reports



In this example, we've used VantagePoint - Smart Charts Edition to normalize indications and phase terminology, and to create a copy of the Drug Development Phase subtable filtered for a specific indication (hepatitis C). In BizInt Smart Charts for Drug Pipelines, we then run the new "Extract High Phase in Column" tool to extract the highest phase from the filtered subtable into a new column.

SUBTABLE FILTERED FOR HEPATITIS C

CLEANED HIGHEST PHASE

Software for Business Intelligence

BizInt Smart Charts

| | Drug | Development Phas | e | Drug Dev | elopment Phase:H | Highest Phase | Extracted Highest | |
|------------------------|-----------------------------------|--------------------------------------|--|-------------------|------------------|---------------|-------------------|---------------------|
| Drug | Indication | Phase Country | | Indication: Hep C | Phase (Arabic) | Country | (All Indications) | Phase (Hepatitis C) |
| interleukin-2, Medusa, | Cancer, renal | Phase II | | hepatitis C | No Development | | Phase 2 | No Development |
| Flamel | Cancer, melanoma | Phase II | | | Reported | | | Reported |
| | Infection, HIV/AIDS | No Development | | | | | | |
| | | Reported | | | | | | |
| | Infection, hepatitis-C | No Development | | | | | | |
| | virus | Reported | | | | | | |
| Aldesleukin | Malignant melanoma | Marketed | Canada, USA | hepatitis C | Discontinued | Spain | Launched | Discontinued |
| | Renal cancer | Marketed | Asia, Canada, European Union Israel, South America, South Korea, USA | , | | | | |
| | Renal cancer Registered Australia | | Australia | | | | | |
| | Cancer | Phase II | USA | | | | | |
| | Non-Hodgkin's lymphoma | Discontinued(III) | USA | | | | | |
| | Hepatitis C | Discontinued(II) Spain | | | | | | |
| | Ovarian cancer | Discontinued(II) | USA | | | | | |
| | HIV-1 infections | No development reported(III) | Australia, USA | | | | | |
| | HIV-1 infections | No development reported(Clinical) | France | | | | | |
| Alequel | Crohn's disease | Phase II | Phase II | | No Development | | Phase 2 | No Development |
| | Cancer, liver | No Development Reported | | | Reported | | | Reported |
| | Infection, hepatitis-C virus | No Development Reported | | | | | | |
| | Infection, hepatitis-B | No Development Reported | | | | | | |
| | Transplant rejection | Transplant rejection No Development | | | | | | |
| | bone marrow | Reported | | | | | | |
| Alfaferone | Hairy cell leukemia | Pre-registration | Argentina | hepatitis C | Launched | Italy | Launched | Launched |
| | Hairy cell leukemia | Registered | Brazil | hepatitis C | Preregistration | Argentina | | |
| | Hairy cell leukemia | Launched | Italy | hepatitis C | Preregistration | Mexico | | |
| | Hairy cell leukemia | Pre-registration | Mexico | hepatitis C | Preregistration | Poland | | |
| | Hairy cell leukemia | Pre-registration | Poland | hepatitis C | Preregistration | Spain | | |
| | Hairy cell leukemia | Pre-registration | Spain | hepatitis C | Registration | Brazil | | |
| | infection | Pre-registration | Argentina | | | | | |
| | Hepatitis B virus infection | Registered | Brazil | | | | | |
| | Hepatitis B virus infection | Launched | Italy | | | | | |

HIGHEST PHASE COLUMN EXTRACTED FROM THE FILTERED SUBTABLE



Extracting the Highest Phase for an Indication [Pipeline DP-4]

How did we create this?

SEARCHES:

 Indication = hepatitis C. Adis R&D Insight (web): 407 records; Citeline Pipeline (web): 554 records; IMS R&D Focus (Ovid): 393 records; Thomson Pharma (web): 565 records.

BIZINT SMART CHARTS FOR DRUG PIPELINES (VERSION 3.5.6 OR HIGHER)

- 1. Open your combined pipeline chart, with the Drug Development Phase and Highest Phase columns visible.
- 2. Use File | Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION

- 3. If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into VP-SCE using File | Import.
- 4. Normalize Phases: On the Summary Sheet, Right-click on Highest Phase field, select Thesaurus... and choose the DrugDevelopmentPhases_Arabic.the file. This will normalize the phases using Arabic numbers.
- 5. Repeat this for the Phase sub-field in the Drug Development Phase field. Use **Sheets** | **Summary** to return to the Summary.
- 6. Right-click on the Highest Phase (1) field and and select Rename Field to rename the field "Highest Phase (All Indications)".
- 7. Repeat to rename the sub-fields in the Drug Development Phase field. Rename Phase (1) to "Phase Arabic",
- 8. Clean up your selected indication: On the Summary panel, double-click on Indication under Drug Development Phase.
- 9. If there are Indications containing data in parentheses, apply Fields | Further Processing | Read until First | Paren to remove qualifiers in parenthesis after indications.
- 10. Bring up the Fields List Cleanup... panel. Select Drug Development Phase:Indication:: Read Until First/Paren from the field list on left. Select the General.fuz file, and click Use.
- 11. Select the Custom Set of Items radio button on the right side of the panel, type "hep" into the Find box, click the Regular Expression check box, and select Add. Drag and drop all the Hepatitis C items into a single item and then click Accept. *Saving the thesaurus is optional but can save time for future cleanup tasks*. You will now have a new sub-field: Indication:: Read Until First/Paren (Cleaned). *To create the filtered subtable, you do not need to cleanup any other indications beyond Hepatitis C*
- 12. Rename Indication:: Read Until First/Paren (Cleaned) to "Indication Hep C". Note: Rename the subfields in VP-SCE before you export!
- 13. Filter the subtable by your Indication: In the Summary panel, double-click on the Drug Development Phase field. Double-click on Indication-Hep C to sort the subfield alphabetically. Shift-click to select all the Hepatitis C items, and from the right-mouse menu, select Add Selection to Group. Type in "Hep C" under New group and click OK. A new column with check marks for all the Hepatitis C items will be created.
- 14. Select Fields Create Field from Group Items. Select the Hep C item under Drug Development Phase; click OK.
- 15. Export filtered subtable and normalized phases back to BizInt Smart Charts: Select File | Export Fielded Records. In the Export Wizard, uncheck the boxes for all fields except Drug Development Phase: Hep C, Highest Phase (All Indications), and recordID. Click OK to export.
- 16. In the next panel, select BizInt Smart Charts for Drug Pipelines in the Output Type dropdown list, click the Launch Application radio button, and then click Finish.

BIZINT SMART CHARTS FOR DRUG PIPELINES

- 17. When BizInt Smart Charts for Drug Pipelines comes to the foreground, select the original chart. It will redisplay with two new columns -- the **new Drug Development Phase Hep C subtable** and a new **Highest Phase** (All Indications) column.
- 18. Extract the highest phase for your Indication into a new column: Select the Drug Development Phase Hep C subtable and then select Tools | Extract High Phase in Column. A new column will be created showing the Extracted Highest Phase from the Hep C subtable. You can compare this to the Highest Phase (All Indications) column to see where the highest phase for Hepatitis C differs from the highest phase for all indications.

Cookbook of Disualizations & Reports



Highest Phase for an Indication – Database Summary [Pipeline DP-5]

In this example, we've taken the chart from the previous recipe (Extracting the Highest Phase for an Indication) and used BizInt Smart Charts Reference Rows to select a single value for each unique drug. And, we've used tools in BizInt Smart Charts Reference Rows to create a summary of the Hepatitis C Phase and Update Date for each related drug record.

| | Hepatitis C Pipeline HTML exported from Reference Rows | | | | | | | | |
|----|--|--|---------------------------------------|--------------------------------------|---|--|--|---------------------------------|--|
| | Drug | Database | Highest Phase (All Indications) | Highest Phase (Hepatitis C) | Database - I Database | Hep C Phase - L Highest Phase (Hepatitis C) | Jpdate Date Last Update | | |
| 1. | P-1101 | 1.1 TPharm link 1.2 Adis link 1.3 Pipeln link 1.4 IMS link | Phase 2 | No Development Reported | Thomson Pharma Adis R&D Insight Citeline Pipeline IMS R&D Focus | Phase 2 Phase 1 No Development Reported Phase 1 | 2012-03-26 2011-02-07 2012-04-23 2011-12-15 | 1.1 1.2 1.3 | |
| | 1.1 TPharm | | 1.3 Pipeln | 1.3 Pipeln | | | | | |
| 2. | nivolumab | 2.1TPharm link2.2Adis link2.3Pipeln link2.4IMS link | Phase 2 | Phase 1 | Thomson Pharma Adis R&D Insight Citeline Pipeline IMS R&D Focus | Phase 1 Phase 1 Phase 1 Phase 1 Phase 1 | 2012-03-22 2012-03-04 2012-02-22 2012-05-02 | 2.1 2.2 2.3 2.4 | |
| | 2.1 TPharm | | 2.4 IM S | 2.4 IM S | | | | | |
| 3. | REP-9AC | 3.1 TPharm link 3.2 Adis link 3.3 Pipeln link 3.4 IMS link 3.5 IMS link | Phase 2 | Preclinical | Thomson Pharma Adis R&D Insight Citeline Pipeline IMS R&D Focus IMS R&D Focus | Phase 2 Preclinical Preclinical Preclinical | 2012-02-02 2007-09-25 2012-02-22 2006-11-13 2006-11-13 | 3.1 3.2 3.3 3.4 3.5 | |
| | 3.1 TPharm | | 3.3 Pipeln | 3.3 Pipeln | | | | | |
| 4. | XTL-2125 | 4.1 TPharm link 4.2 Adis link 4.3 Adis link 4.4 Pipeln link 4.5 IMS link | Phase 1 | Phase 1 | Thomson Pharma Adis R&D Insight Adis R&D Insight Citeline Pipeline IMS R&D Focus | Phase 1 Discontinued Discontinued Discontinued Phase 1 | 2012-03-20 2008-03-07 2010-05-24 2007-06-11 2007-05-14 | 4.1 4.2 4.3 4.4 4.5 | |
| | 4.1 TPharm | | 4.1 TPharm | 4.1 TPharm | | | | | |

SUMMARY OF HEP C PHASE AND UPDATE DATE



Highest Phase for an Indication – Database Summary [Pipeline DP-5]

How did we create this?

SEARCHES:

 Indication = hepatitis C. Adis R&D Insight (web): 407 records; Citeline Pipeline (web): 554 records; IMS R&D Focus (Ovid): 393 records; Thomson Pharma (web): 565 records.

BIZINT SMART CHARTS FOR DRUG PIPELINES (VERSION 3.5.6 OR HIGHER)

- 1. Open your combined pipeline chart from the previous recipe, with the extracted highest phase for Hepatitis C column visible.
- 2. Right-click on the Extracted Highest Phase column and choose Column Properties. Rename the column "Highest Phase (Hepatitis C)" and click OK.
- 3. Save the .cht file.
- 4. Send the chart to Reference Rows using the toolbar icon (or File | Send to Reference Rows).

BIZINT SMART CHARTS REFERENCE ROWS (VERSION 1.0.6 OR HIGHER)

- 5. During the Create Reference Rows wizard, on the second panel, make sure that Thomson Pharma is listed as the first database. Click Next.
- 6. On the third panel, select the Highest Phase (All Indications) column, click the Edit button and choose the Most Recently Updated rule to select the phase from the most recently updated record. Do the same for the Highest Phase (Hepatitis C) column.
- 7. When the wizard finishes, you will see the Selection View. Green check marks indicate the items selected by the database ranking and rules.
- 8. In the Selection View, run Tools | Create Subtable from Columns.
- 9. Select the Database, Highest Phase (Hepatitis C) and Last Update columns in that order and press Apply. A new column will be created containing a subtable with these three columns.
- 10. Double click on the column header to rename the new column from Untitled Subtable to "Database - Hep C Phase - Update Date".
- 11. Use Reference Rows | Column Rules... to set the rule for the new column to Summarize All Values. Blue hash marks will appear in the cells.
- 12. Hide any columns you do not want displayed in your final report.
- 13. Use File Export to export the report to HTML and see the selected highest phases and the subtable column summarizing the Database/Hep C Phase/Update data.

Cookbook of Disualizations & Reports



Bubble Charts for Top Companies in a Drug Pipeline [Pipeline DP-8]

Techniques from different recipes can be combined to create a more powerful visualization. Here we use the recipe Extracting the Highest Phase for an Indication [Pipeline DP-4] as the basis for building a bubble chart. In this example we'll use pipeline data for prostate cancer drugs. Pictured here are a bubble chart showing companies and highest phase overall and the same chart using highest phase for our target indication, prostate cancer. The picture is quite different, suggesting which companies are supporting an existing prostate cancer franchise and which are looking to expand into a new indication.



Cookbook of Disualizations & Reports

Software for Business Intelligence BizInt Smart Charts

Bubble Charts for Top Companies in a Drug Pipeline [Pipeline DP-8] How did we create this?

Note: This recipe is for VP-SCE 9.1 users; if you are using an earlier version, please refer to the October 2015 Cookbook.

SEARCHES:

 Thomson Reuters Cortellis, Adis R&D Insight, Citeline Pharmaprojects: Indication = Prostate Cancer Field names in this recipe are from Adis R&D Insight.

RECIPES: Extracting the Highest Phase for an Indication

BIZINT SMART CHARTS FOR DRUG PIPELINES

- 1. Import each set of search results into BizInt Smart Charts and use File Combine to create a combined chart.
- 2. Use Tools | Generate Common Drug Names and sort by the resulting Common Drug Name field.
- 3. Display the Companies, Drug Development Phase, and Highest Phase columns.
- 4. Use the steps in the Extracting the Highest Phase for an Indication recipe to create a "Highest Phase (Prostate cancer)" field.
- 5. Select File | Send to Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS

- 6. On the third panel of the Create wizard select Highest Phase and click on Edit to change the rule to Most Recently Updated. Do the same for the Highest Phase (Prostate cancer) field. Click Finish to create the reference rows. *When the wizard finishes, you will see the Selection View. Green check marks indicate the items selected by the database ranking and rules.*
- 7. Review the selections and make any changes especially to the Companies and Highest Phase (Prostate cancer) fields. To change which cell is selected for the reference row, right-click on a cell and choose Select this cell.
- 8. Use File Export to export the visible columns to VantagePoint XML.

VANTAGEPOINT - BIZINT SMART CHARTS EDITION

- 9. If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into VP-SCE using File | Import.
- 10. Normalize company names: Double-click on the Companies field to view the contents. Use Fields | Futher Processing | Read Until First/Paren to remove information in parentheses.
- 11. Go to Fields | List Cleanup, select the General.fuz file, and click Use.
- 12. Use the Cleanup Confirm panel to clean up Companies.
- 13. Cleanup Confirm provides different tools, you can:
 - Enter keywords or partial keywords in the Find box, click the Add button, and switch the display to Custom Set of Items. To search additional keywords you can Add to the list or use Remove All to clear the Custom Set.
 - Drag and drop terms onto other terms to group them.
 - Cut a term and Paste it onto another term to do the same thing.
 - Right-click on a term and select Rename Term.
- 14. If you're working in this area often, consider saving the cleanup as a thesaurus.
- 15. Select the top 20 rows of the cleaned company field, right-click and choose Add Selection to Group and name it "map".
- 16. Return to the Summary sheet using Sheets Summary.
- 17. Ensure phase order sort: Right-click on the Highest Phase (Prostate cancer) field and choose Set Data Type Phase.
- 18. Select phases you want for your bubble chart: Double-click on Highest Phase (Prostate cancer). Select the rows for phases to include, right-click and choose Add Selection to Group and name it "map".
- 19. Save your .vpt file.
- 20. Build the bubble chart: Go to Scripts | Bubble Chart. In step 1, use the cleaned Companies field for the rows and change the radio button to Select a group. (The "map" group should be selected by default). In step 2, change the radio button to Select Any and pick the Highest Phase (Prostate cancer) field. Again change the radio button to Select a group and the "map" group should be selected by default). In step 3. Title your chart and click OK to create the chart.
- 21. Build the chart by overall high phase: Repeat steps 17-20, this time using the Highest Phase field.

Cookbook of Disualizations & Reports

Launch Timeline (I) – Creating a Competitive Launch Timeline [Pipeline DP-12-1]

Software for Business Intelligence

BizInt Smart Charts

This recipe shows how to create a launch timeline visualization showing estimated launch dates for a set of drugs arranged into horizontal categories, or lanes. This type of chart is also sometimes called a "swimlane" or "fishbone" chart. Most of the data is drawn from a drug pipeline table with an added column for the estimated launch date. The launch timeline is created in VP-SCE and can be saved as an interactive HTML report.

This example shows a competitive launch timeline for migraine drugs in May 2015. The estimated launch dates were calculated from trial data using the Launch Timeline (II) recipe.





Launch timeline (I) – Creating a Competitive Launch Timeline [DP-12-1] How did we create this?

SEARCHES:

Searches were conducted in Adis R&D Insight, Citeline Pharmaprojects, and Thomson Reuters Cortellis. A
complementary search was conducted in Citeline TrialTrove and ClinicalTrials.gov for drugs selected for inclusion in
the timeline.

RECIPES: Extracting the Highest Phase for an Indication

BIZINT SMART CHARTS FOR DRUG PIPELINES

- 1. Create a combined chart: Import each set of search results into BizInt Smart Charts and use File Combine to create a combined chart.
- 2. Identify related records: Use Tools Generate Common Drug Names to identify related records.
- 3. Ensure that any columns you want to review are visible. Use View Columns to add or remove as you wish.
- 4. Extract phase in indication: Follow the steps in the recipe Extracting the Highest Phase for an Indication
- 5. Select drugs to include: Hide rows for any drugs that you want to omit from your timeline.
- 6. Save the chart file and then use File | Send to Reference Rows to open the chart in BizInt Reference Rows.

BIZINT SMART CHARTS REFERENCE ROWS

- 7. **Prepare the data for the timeline:** In addition to phase in indication, you will need a column for each component of the timeline. These will be based on pipeline data but may require further selection, such as picking a single company, and cleanup, such as identifying a shorter company name. Rather than editing the original columns, either use Edit | Add Column to create new columns or export to VP-SCE and return as new columns for each timeline component. For our example timeline we will need these columns: drug name, company, phase in indication, route of administration, and mechanism of action.
- 8. Add estimated launch dates: Use Edit | Add Column and rename the created column "Estimated Launch Date". Enter dates for each box that will appear on your timeline. You can calculate dates from clinical trial dates as shown in the following recipe, Launch timeline (II) Calculating estimated launch dates from trial dates.
- 9. Use File Export to export the chart as Vantage Point Smart Charts Edition (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION (VERSION 9.1 OR HIGHER)

- 10. Create the Launch Timeline: Use Scripts | Create Launch Timeline and select the fields that you want to include in your launch timeline. Field selections used in this example are shown on the opposite page.
 - Field for Box Labels: used for the drug box label white text on colored background (e.g. Drug Name in this example)
 - Field for Lane Labels: used to label the lanes on the left of the timeline (e.g. targets)
 - Field for the Launch Date: the estimated launch date, used to plot the drug boxes
 - First Year/Last Year: defines the date range of the launch timeline
 - Fields for boxes/tooltips: optional additional labels for the drug boxes (up to 3). These fields can also be used as "tooltips" when your mouse hovers over the drug box in the HTML version.
 - Field for color code: used to color code the drug boxes (e.g. MOA in this example). For the radio button, you will generally pick "Each item in Field."
- 11. Click on the Create Launch Timeline button to open your launch timeline in a VP-SCE window. In VP-SCE, you can click on each box to get more detail.
- 12. To save the launch timeline as HTML for viewing in a browser, right-click on the timeline and selecte Save As. Saved timelines can be viewed in a browser and retain some of the same interactivity- you can zoom, scroll, and click on a drug name to view the record on the publishers' site.
- 13. You can edit the title, subtitle and other information in the HTML window or the VP-SCE window.

Cookbook of Disualizations & Reports

Launch Timeline (II) – Calculating Estimated Launch Dates from Trial Start and End Dates [Pipeline DP-12-2]

Software for Business Intelligence

BizInt Smart Charts

The estimated launch date information used to build the launch timeline visualization can come from any source. This recipe shows how you can use a thesaurus to calculate estimated launch dates by adding a set number of months to a trial date based on trial phase. You can have different thesauri for trial start and end dates or different therapeutic areas.

In this recipe, we build a thesaurus from our pipeline drug names and synonyms to help identify those drugs in clinical trials data. We then calculate the estimated launch dates used to build the sample migraine launch timeline in the previous recipe.

| | Trial Title | Drug (Pipeline) | Database | Patient Population | Countries | Trial Phase | Completion Date | Calculated Launch Date |
|----|--|----------------------------|------------------------------------|--|---|-------------|----------------------------|---------------------------|
| 1. | A Multi Centre, Double Blind, Randomised, Placebo Controlled Crossover Study to Evaluate the Efficacy and Tolerability of Picotamide in the Prophylaxis of Migraine in Patients Presenting with Migraine with Aura | PP-012 | 1.1 TROVE link | E <i>link</i> Patients presenting with Denmark migraine with aura. Hungary | | Phase 2 | 2012-03-28 (Start Date) | 10/28/2017 |
| | 1.1 TROVE | 1.1 TROVE | | 1.1 TROVE | 1.1 TROVE | 1.1 TROVE | 1.1 TROVE | 1.1 TROVE |
| 2. | A Multicenter Study to Evaluate the Efficacy of a 91-Day Extended Cycle Oral Contraceptive for Menstrually- Related Migraine Headaches | DR-105 | 2.1 NCT link 2.2 TROVE link | Women with menstrually- related migraine headaches. | United States | Phase 2 | 2011-08 | 3/1/2017 |
| | 2.1 NCT | 2.1 NCT | | 2.2 TROVE | 2.1 NCT | 2.1 NCT | 2.1 NCT | 2.1 NCT |
| 3. | Dose-ranging Study of Oral COL-144 in Acute Migraine Treatment | Lasmiditan | 3.1 NCT link 3.2 TROVE link | Patients with migraine with or without aura fulfilling Most (87.5%) of the patients were female and the mean age was 40 years. | Belgium Finland France Germany Spain | Phase 2 | 2010-02 | 9/1/2015 |
| | 3.1 NCT | 3.1 NCT | | 3.2 TROVE | 3.1 NCT | 3.1 NCT | 3.1 NCT | 3.1 NCT |
| 4. | Efficacy and Safety of Eslicarbazepine Acetate as Preventive Therapy for Subjects with Migraine: A Doubleblind, Randomised, Placebo-controlled, Parallel- group, Multicentre Clinical Trial | Eslicarbazepine acetate | 4.1 TROVE link | Population in clinical trial: Adults (18-65 years) Male and female patients with migraine. Adult patients with migraine with or without aura. | Austria Bulgaria Czech Republic Germany Italy Lithuania Portugal Russia Slovakia Spain | Phase 2 | 2013-04-05 | 11/1/2014 |
| | 4.1 TROVE | 4.1 TROVE | | 4.1 TROVE | 4.1 TROVE | 4.1 TROVE | 4.1 TROVE | 4.1 TROVE |
| | | | | | | | | |



Launch Timeline (II) Calculating estimated launch dates from trial dates [DP-12-2] How did we create this?

SEARCHES:

- Searches were conducted in Adis R&D Insight, Citeline Pharmaprojects, and Thomson Reuters Cortellis. A
 complementary search was conducted in Citeline TrialTrove and ClinicalTrials.gov for the selected drugs in the launch
 timeline.
- FILES: Calculate Date Estimate.vpm (Contact support@bizint.com for the file and installation directions)

BIZINT SMART CHARTS FOR DRUG PIPELINES

- 1. Open the pipeline chart you created for the launch timeline and use View Columns to add the Common Drug Name, Synonyms, and the column with the drug name, if not already visible.
- 2. Use File | Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION

- 3. Create a Drug Name Thesaurus from your pipeline chart: Once import completes use Fields | Merge Fields. Add the drug name and Synonyms fields by selecting them from the left hand column and clicking the Add button. Then click OK to merge the two fields.
- 4. Go to Scripts | Make Thesaurus, use Common Drug Name as First Field and the merged drug and synonyms as second. Click OK to create the thesaurus. You will apply this later, in step 10. Return to BizInt Smart Charts to create your clinical trials chart.

BIZINT SMART CHARTS FOR CLINICAL TRIALS

- 5. Create your combined clinical trials chart: Import each set of clinical trial search results into BizInt Smart Charts and use File Combine to create a combined chart.
- 6. Identify related trials records: Use Tools | Generate Common Trial IDs to identify related records.
- 7. Go to View | Columns and add the Drugs field if not already visible.
- 8. Export your trials chart to VP-SCE: Use File | Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION

- 9. Cleanup Drug Names: When the export of your trials chart opens in VP-SCE, right-click on the Drugs field in the Summary sheet and use Further Processing | Read Until First | Paren and then use Fields | Further Processing | Read Until First | Comma.
- 10. Apply your pipeline Drug Name Thesaurus to trials: Then go to Fields Thesaurus and choose the file created in the previous step. Before clicking Use, change two options on the left hand panel: uncheck the option to Include Unmatched Items in New Field and change the name of the New Field to "Drug (Pipeline)".
- 11. Use File Export Fielded Records... and remove all fields except Drug (Pipeline) and recordID from the list to export back to BizInt Smart Charts.

BIZINT SMART CHARTS FOR CLINICAL TRIALS

- 12. Select your clinical trials chart to import into. You should see Drug (Pipeline) appear as a new column.
- 13. Ensure that any columns you want to review are visible. Use View Columns to add or remove as you wish, adding at least the start and end date columns and phase if not already visible.
- 14. Select trials to use to calculate dates: Hide rows for any trials that you don't want to use to calculate estimated launch dates. You can use the Drug (Pipeline) field you created to help you identify trials, but note that some relevant trials may not have a drug name identified.
- 15. Use File Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION

- 16. Calculate Estimate Launch Dates from trial dates: First, clean-up the trial dates. To remove text in parentheses, right-click on the completion date field and choose Further Processing | Read Until First | Paren
- 17. Use Sheets | Summary and then right-click on the phase field and select Thesaurus. Use DrugDevelopmentPhases.
- 18. Go to Scripts Calculate Date Estimate. Choose the cleaned date and phase fields and click OK. Select a date estimate thesaurus, Launch Estimate from trial end.the in our example. The script creates a new Estimated Date field with calculated launch dates.

Cookbook of Disualizations & Reports

Technique: Phase and Company Cleanup across Databases [Pipeline DP-2]

Software for Business Intelligence

BizInt Smart Charts

This table shows the highest phases of drugs and companies (originators and licensees) in the Human Genome Sciences pipeline, based on searches in Thomson Pharma (Drugs), R&D Insight, R&D Focus (Ovid), and Citeline Pipeline. Phase descriptors and company names were cleaned up using VantagePoint - Smart Charts Edition and BizInt Smart Charts Reference Rows was used to select a single phase and company list for each drug retrieved from multiple databases. The top table shows how BizInt Smart Charts Reference Rows "selection view"; the bottom table shows the exported HTML.

| Human Genome Sciences - Pipeline (TP, RDI, RDF, CP - Aug 2012) | | | | | | | | | | | | | | |
|--|-----------------------------|-------------------|----------------------|--------------|----------------------------|--|---------------------------|-----------------------------------|---|-----------------------------|---|-----------------|---|-------------|
| | Drug | Database | Stat | us | Status (Arabic) | Companie | s | Co | ompanies (Cleaned) | | Update Date | | | |
| 1 | balugrastim 🐳 | ' Thomson Pharma | Phase 3 | Clinical | Phase 3 💙 | Aventis Behring LLC CoGenesys Inc Human Genome Scien Teva Pharmaceutical Ir | nces Inc ndustries Ltd | Aventis CoGen Humar Teva | Behring LLC hesys Inc h Genome Sciences | ~ | 2012-08-07 | | | |
| 1 | ALBUGRANIN | IMS R&D Focus | Preclinica | al | Preclinical | Human Genome Scien | nces (USA) | Humar | n Genome Sciences | | 2003-08-18 | | | |
| 1 .3 | albumin-GCSF fusion, HGS | Citeline Pipeline | No Devel Reported | lopment i | No Development Reported | Human Genome Scien | nces | Humar | n Genome Sciences | | 2004-10-14 | | | |
| 2 .1 | Darapladib ┥ | Adis R&D Insight | Phase III | | Phase 3 | GlaxoSmithKline (Origi Human Genome Scien (Originator) | inator) 💙 nces | GlaxoS Humar | mithKline n Genome Sciences | * | 2012-08-14 | | | |
| 2 .2 | SB 435495 | Adis R&D Insight | Discontin | nued I | Discontinued | GlaxoSmithKline (Origi Human Genome Scien (Originator) | inator) nces | GlaxoS Humar | mithKline n Genome Sciences | | 2009-05-05 | | | |
| 2 | darapladib (pINN) | IMS R&D Focus | Phase III | ~ | Phase 3 🗸 | GlaxoSmithKline (UK) Human Genome Scien | nces (USA) | GlaxoS Humar | SmithKline n Genome Sciences | | 2012-08-23 | | | |
| 2 | darapiadio | Citeline Pipeline | Phase III | | Phase 3 | Human Genome Scien | nces | Humar | n Genome Sciences | | 2012-07-20 | | | |
| 3 | FP-1039 | Thomson Pharma | Phase 2 | Clinical | Phase 2 🗸 | FivePrime Therapeutic Human Genome Scien | is Inc 🗸 🗸 | Five Pr Humar | ime Therapeutics n Genome Sciences | ~ | 2012-08-03 | | | |
| 3 .2 | FP 1039 | Adis Rob Insight | Fliase | | Flidse I | Human Genome Scien (Licensee) | nces | Humar | n Genome Sciences | | 2012-08-07 | | | |
| 3 | FP 1039 | IMS R&D Focus | Phase II | | Phase 2 | FivePrime (USA) Human Genome Scien | nces (USA) | Five Pr Humar | ime Therapeutics n Genome Sciences | | 2012-06-12 | | | |
| 3 | FP-1039 | Citeline Pipeline | Phase II | | Phase 2 | Five Prime Therapeutic Human Genome Scien | CS ICES | Five Pr Humar | ime Therapeutics | | 2012-06-05 | | | |
| 4 | lexatumumab ؇ | Thomson Pharma | Phase 2 | av A | Drug | Database | Status | ~ · | Status | Com | panies | | Companies (Cleaned) | Update Date |
| 4 | Lexatumumab | Adis R&D Insight | Disconti | | | | Di 0.01 | | (Arabic) | | | | | |
| .2 | | | | 1. | balugrastim | 1.1 TPharm link | Phase 3 Clir | nicai | Phase 3 A | venti: CoGer Huma | s Benring LLC 1esys Inc n Genome Scier | ices | Aventis Benring LLC CoGenesys Inc Human Genome Sciences | 2012-08-07 |
| 4 | lexatumumab (USAN) | IMS R&D Focus | Phase I | | | 1.3 Pipeln link | | | li I | nc Feva P ndust | 'harmaceutical ries Ltd | | Teva | |
| 4.4 | lexatumumab | Citeline Pipeline | Reporte | | 1.1 TPharm | | 1.1 TP | harm | | | 1.1 | TPharm | | 1.1 TPharm |
| | | | | 2. | Darapladib | 2.1 Adis link 2.2 Adis link 2.3 IMS link 2.4 Pipeln link | Phase III | | Phase 3 C | Glaxos Huma Origir | SmithKline (Origi n Genome Scier nator) | inator) 1ces | GlaxoSmithKline Human Genome Sciences | 2012-08-23 |
| | | | | | 2.1 Adis | | 2.3 IM | 15 | | | 2.1 | Adis | | 2.3 IM S |
| | | | | 3. | FP-1039 | 3.1 TPharm link 3.2 Adis link 3.3 IMS link 3.4 Pipeln link | Phase I | | Phase 2 F F | FivePr Huma nc | ime Therapeutic n Genome Scier | s Inc ices | Five Prime Therapeutics Human Genome Sciences | 2012-08-07 |
| | | | | | 3.1 TPharm | | 3.2 Ad | dis | | | 3.1 | TPharm | | 3.2 Adis |
| | | | | 4. | lexatumumab | 4.1 TPharm link 4.2 Adis link 4.3 IMS link 4.4 Pipeln link | Phase 2 Clir | nical | Phase 2 C | Camb Fechn Huma nc | ridge Antibody ology Group plc n Genome Scier | ICES | AstraZeneca Human Genome Sciences | 2012-08-03 |
| | | | | | 4.1 TPharm | | 4.1 TP | harm | | | 4.1 | TPharm | | 4.1 TPharm |
| | | | | 5. | raxibacumab | 5.1 TPharm link 5.2 Adis link 5.3 IMS link 5.4 Pipeln link | Preregistrati | ion | Launched C | Camb Techn Huma nc | ridge Antibody ology Group plc n Genome Scier | nces | Cambridge Antibody Technology Group plc Human Genome Sciences | 2012-08-06 |
| | | | | | 5.1 TPharm | and a shore there | 5.2 44 | lis | | | 5.1 | TPharm | | 5.2 Adis |
| | | | | | -v: i renarm | | 0.2 A0 | | | | 0.1 | | | U.L. HUIS |



Technique: Phase and Company Cleanup across Databases [Pipeline DP-2] How did we create this?

SEARCHES:

- Thomson Pharma (Drugs): Company = Human Genome Sciences Inc. 42 (296 No Development Reported deleted)
- R&D Insight (Adis Insight): Organisation Name = Human Genome Sciences 55
- R&D Focus (Ovid): Company Name = Human Genome Sciences 69
- Citeline Pipeline: Company = Human Genome Sciences Inc. 54

BIZINT SMART CHARTS FOR DRUG PIPELINES

- 1. Import each set of search results into BizInt Smart Charts to create .cht files.
- 2. Use the File | Combine feature to create a single combined chart. Use Tools | Generate Common Drug Names and sort by the resulting Common Drug Name field.
- 3. Display the Companies (includes both Originators and Licensees) and Status columns.
- 4. Use File | Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION

- 5. If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into VP-SCE using File | Import.
- 6. When import completes, double-click on the Companies field in the Summary to view the contents of the field.
- 7. Apply Fields | Further Processing | Read until first paren to remove qualifiers in parenthesis after company names.
- 8. Bring up the Fields | List Cleanup... panel. Select Companies: Read Until First/Paren from the field list on left. Select the Organization Names (Pharma).fuz file, and click Use.
- 9. Use the Cleanup Confirm panel to further cleanup company names and then click Accept. You will now have a new field Companies: Read Until First/Paren (Cleaned).
- 10. Go to Sheets Add List and choose the Status field to view the contents of the field.
- 11. Apply Fields | Thesaurus..., choose the DrugDevelopmentPhases_Arabic.the file and click Use. This will normalize the phases using Arabic numbers (e.g. Phase 2).
- 12. Export the new cleaned up company names and phases back to BizInt Smart Charts as a new column using File | Export Fielded Records.... In the Export Wizard, click to uncheck the box for Companies: Read Until First/ Paren. All the other fields we want to export. Click OK to export.

BIZINT SMART CHARTS REFERENCE ROWS

- 13. When BizInt Smart Charts for Drug Pipelines comes to the foreground, select the original chart. It will redisplay with a new column: Companies: Read Until First/Paren (Cleaned). Use View | Column Properties to rename this column "Companies (Cleaned)", and rename the Status (1) column to "Status (Arabic)".
- 14. Select File | Send to Reference Rows to open the chart in BizInt Smart Charts Reference Rows.
- 15. When the wizard finishes, right-click on the Companies (Cleaned) column and choose Edit Column Rule. Select the Summarize Unique Values rule to include all companies listed for each unique drug.
- 16. Use the Most Recently Updated rule for the Status (Arabic) column to choose the status from the most recently updated record.
- 17. Use File | Export to export the Reference Rows report to HTML.

Cookbook of Disualizations & Reports



Technique: Working with Thesauri

VP-SCE offers multiple ways to create and work with thesauri. In many recipes you will notice that when you clean a field with List Cleanup, you have the option to save as a thesaurus. You can also edit and create thesauri directly with the Thesaurus Editor. Here we will show how it can be used to edit a Drug Development Thesaurus to provide a custom sort in Excel or in VP-SCE visualizations.

| le Thesaurus Editor | | |
|---|---|---|
| File Edit Thesaurus | | |
| D 😅 🖬 🛤 🔉 🛍 👌 👬 😓 🎭 | | |
| Field | Thesaurus | Results |
| Status E | $\label{eq:c:Program} C: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $ | Apply Thesaurus |
| Discontinued I Discontinued I Discontinued II Discovery Marketed No Development Reported Phase 1 Dinical Phase 2 Dinical Phase 3 Dinical Phase III Pre-registration Pre-clinical | ⊕ 0 Bological Testing ⊕ 0 Technicag ⊕ 0 Technicag ⊕ 1 Technicag ⊕ 1 Technicag ⊕ 2 Phase 1 ⊕ 3 Phase 2 ⊕ 4 Phase 4 ⊕ 5 Phase 4 ⊕ 6 Markted ⊕ 7 Discontinued ⊕ 7 Discontinued ⊕ 8 No Development Reported | 0 Preclinical 1 Phase 1 2 Phase 2 3 Phase 3 5 Registration 6 Marketed 7 Discontinued 8 No Development Reported |
| Display Entire List | · · · · · · · · · · · · · · · · · · · | |
| Matched Terms UnMetched Terms | | |
| | | |



Software for Business Intelligence

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Technique: Working with Thesauri How did we create this?

SEARCHES:

• We used the DrugDevelopmentPhases_ExcelSort.the as a starting point to create a thesaurus that will sort the way we want. We could also create a thesaurus from scratch, or edit a thesaurus created as part of List Cleanup.

VANTAGEPOINT - BIZINT SMART CHARTS EDITION

- 1. Go to Tools | Thesaurus Editor to open the Thesaurus Editor in a new window.
- 2. Use File Open Thesaurus and select the thesaurus you want to work with. We'll use DrugDevelopmentPhases_ExcelSort.the.
- 3. Before making changes, save under a new name. From the File menu select Save as.
- 4. There are two levels in a VP-SCE thesaurus, Top Level Items and Sub Items. The center pane of the Thesaurus Editor shows the structure of the current thesaurus. When you open a thesaurus only the Top Level Items are shown. These are the terms that will replace anything matching the associated Sub Items when the thesaurus is used. To expand an item and view the Sub Items associated with a Top Level Item you can click the plus sign.
- 5. Combine Phases: Drag one Top Level Item under another one to consolidate them. Here we drag "0 Biological Testing" onto "0 Preclinical" so that records with either preclinical or biological testing as the phase will be treated as preclinical in our custom thesaurus.
- 6. Change Phase Sorting: Right-cick on the Top Level Item for the phase you want to change and select Rename Item. Then change the numbering to reflect your preferred sort order. We will right-click on "7 Discontinued" and change the 7 to a 0, moving the Discontinued items from the bottom to the top of the list.
- 7. You can use outline numbering convention of 1, 1.1, 1.1.1, and so on to have phases sort between the existing numbers. Because of the text descriptions, phases will sort alphanumerically, so standard numbering 10 and above will not sort as expected.
- 8. Add a New Phase: To add a new phase, from the Thesaurus menu select Insert Top Level Item and enter the preferred term that should replace the existing text when the thesaurus is run. For this thesaurus, we use a number followed by a text description for the added phase. Here we want to add Phase 1/2 as a separate phase, "1 Phase 1/2".
- 9. Check the sort: Right-click on your new Top Level Item and select Re-Sort Thesaurus. To change the sort, change the number.
- 10. Move the Phase 1/2 terms: Use ctrl-click to select all the Phase 1/2 Sub Items from the "1 Phase 1" Top Level Item and drag and drop them to your new "1 Phase 1/2" Top Level Item.
- 11. You can also add Sub Items to the new phase by right-clicking on the new Top Level Item and selecting Insert Sub Item. The drop-down box controls whether you want to match exactly or search within the existing term "contains."
- 12. Sub Items use regular expressions and can be quite complex, but can also be literal matches. For literal matches begin the Sub Item with a carat (^) and end with a dollar sign (\$).
- 13. Check your thesaurus: Use File|Load Field and select a field with matching terms, here choose the Phase field and click the Apply Thesaurus button.
- 14. You'll see the results of applying the thesaurus in the right-hand column, You can also change the radio button on the lefthand side to show only Un-Matched or Matched terms from the field you loaded. This allows you to see what you want to add to your thesaurus.
- 15. Save your thesaurus.

Cookbook of Disualizations & Reports



Technique: Extracting Keywords

You may find yourself wanting to extract a set of keywords from a field. For example, you might want to visualize Endpoint Classifications in search results from Citeline TrialTrove. TrialTrove provides this information as part of the "Study Design" column, in one of two different formats. This Technique shows how to extract a set of keywords from a field in VP-SCE using the My Keywords feature.



FIGURE 1. THE MY KEYWORDS PANEL

| Study Design | Study Design : Study Classifications |
|--|---|
| This is a double-blind, randomized, active controlled, phase 2, multi-centre, dose ranging, safety study. This was an immunogenicity, single dose study. | Safety Study |
| Study Type: Interventional Study Design: Allocation: Randomized Control: Active Control Endpoint Classification: Safety/Efficacy Study Intervention Model: Parallel Assignment Masking: Single Blind (Outcomes Assessor) Primary Purpose: Prevention This is a controlled, multicenter, immunogenicity study. This is an observer blinded and tolerability study. | Efficacy Study Safety/Efficacy Study |
| Study Type: Interventional Study Design: Allocation: Randomized Endpoint Classification: Safety/Efficacy Study Intervention Model: Parallel Assignment Masking: Single Blind (Outcomes Assessor) Primary Purpose: Prevention This is a multicenter, active comparator, immunogenicity study. This is dose response, non-inferiority, tolerability, exploratory study. | Efficacy Study Safety/Efficacy Study |

FIGURE 2. KEYWORDS EXTRACTED USING SIMPLE KEYWORDS

| Study Design | Study Design : Study Classifications | Study Design : Study Classifications (2) |
|--|---|---|
| Study Type: Interventional Study Design: Allocation: Randomized Endpoint Classification: Safety/Efficacy Study Intervention Model: Parallel Assignment Masking: Double-Blind Primary Purpose: Prevention This is an observer blind, multi-center, active controlled, immunogenicity and tolerability study. | Efficacy Study Safety/Efficacy Study | Safety/Efficacy Study |

FIGURE 3. KEYWORDS EXTRACTED USING REGULAR EXPRESSIONS

Cookbook of Disualizations & Reports



Technique: Extracting Keywords How did we create this?

SEARCHES:

For this particular example, we used an export from Citeline TrialTrove. If you would like to follow along, you can
import any results from TrialTrove into BizInt Smart Charts for Drug Pipelines, make the Study Design column visible,
and then export to VP-SCE.

BIZINT SMART CHARTS FOR DRUG PIPELINES

- 1. Import the search results into BizInt Smart Charts to create .cht files.
- 2. Display the "Study Design" column.
- 3. Use File Export to export the chart as "Vantage Point XML" (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION

- 4. If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into VP-SCE using File | Import.
- 5. Double-click on the Study Design field.
- 6. Make sure the My Keywords panel is visible. Look on the View menu and make sure My Keywords is checked. The My Keywords panel is shown in Figure 1 (on the previous page.)
- 7. Click the +kw button or press Insert on your keyboard to insert a new keyword. Type the phrase you would like to extract from the raw data. In the example in Figure 1, you can see that we have entered some of the Endpoint Classifications that we see in our data.
- 8. To extract your keywords from a field, bring up the Manage Keywords menu (under the blue-gray key icon), and hold your mouse over Extract My Keywords From | Study Design. (Move your mouse over Extract My Keywords From and then move the mouse to the field name that you want to extract from). This will create a new field with only the extracted keywords.
- 9. Export the extracted keywords back to BizInt Smart Charts as a new column using File | Export Fielded Records. In the Export Wizard, the Study Design : Study Classifications field should already be checked. Click OK to export.
- 10. In the next panel, select BizInt Smart Charts for Drug Pipelines in the Output Type dropdown list, click the Launch Application radio button, and then click Finish.

GOING FURTHER

- 11. Keywords can be case sensitive or not. You can control whether a set of keywords is case sensitive on the Manage Keywords menu (under the blue-gray key icon), and then follow to the Keyword Options sub-menu. If you look at the Figure 2 (on the previous page), the first row lists "safety study" in all lower case, but our standard keyword is used in the extracted column.
- 12. My Keywords can do more than simply match phrases. For example, if you look more carefully at the example in Figure 2, you will see that we are extracting both "Safety/Efficacy Study" and "Efficacy Study" from records where the original text contains "Safety/Efficacy Study". We can use a regular expression to ensure that we only match the exact term "Efficacy Study". Study".
- 13. To use a regular expression, make sure that there is a check mark next to Regular Expressions on the Keyword Options sub-menu. Then modify your keyword to include the necessary regular expression code. In this case, we want to only match when the character before "Efficacy" is not a "/". You can see the regular expression we used in the keyword on the right



14. When we Extract My Keywords from the Study Design field again, you see in Figure 3 that we now only extract "Efficacy Study" when that exact text is present, and not when the classification is "Safety/Efficacy Study".

Cookbook of Disualizations & Reports



Technique: Using Pipeline Data to Cleanup Drug Names in Trial Data [Trials CT-5]

This recipe shows how to use drug names and synonyms from pipeline records and apply them to clinical trial data. As a result we can go from a field listing all drugs used in each trial to a single drug of interest for each trial as shown in the HTML export pictured.

In this example we used two searches: a pipeline search for the drug target poly ADP ribose polymerase (PARP) and a clinical trials search for selected PARP inhibitors. The results of the pipeline search were combined and then a single record for each trial was created with BizInt Smart Charts Reference Rows. The same was done with the clinical trials set. We then exported the pipeline records to VantagePoint – Smart Charts Edition (VP-SCE) and generated a custom thesaurus using Common Drug Name as the main term and Synonyms as the sub term. Then the clinical trials set was exported to VP-SCE. Using VP-SCE, the data was cleaned and then the thesaurus we just created was applied to transform the Drugs field down to a single term for each PARP inhibitor.





Technique: Using Pipeline Data to Cleanup Drug Names in Trial Data [Trials CT-5] How did we create this?

SEARCHES:

- **Pipeline**: We searched Thomson Reuters Cortellis, Citeline Pipeline and Adis R&D Insight for drug records where Mechanism of Action = ADP ribose polymerase (PARP) inhibitor. *Pipeline field names in this recipe are from Adis R&D Insight.*
- Clinical Trials: We searched Clinical Trials.gov, Citeline Trial Trove and Adis Clinical Trials Insight for trial records for Niraparib, BMS-673 & Rucaparib (and synonyms) -- three Phase III PARP drugs identified in the pipeline recipe. Trial field names in this recipe are from Clinical Trials.gov.

FILE: AdditionalDivideAt.conf (Contact support@bizcharts for the file and installation directions)

BIZINT SMART CHARTS FOR DRUG PIPELINES

- 1. Import each set of pipeline search results into BizInt Smart Charts and use File Combine to create a combined chart.
- 2. Run the Generate Common Drug Names tool and sort by the Common Drug Name field.
- 3. Display the Synonyms column.
- 4. Use File | Export to export the chart as Vantage Point XML (creates a .vpxi file.)

VANTAGEPOINT - SMART CHARTS EDITION

- 5. If the file does not launch automatically in VantagePoint Smart Charts Edition (VP-SCE), then import the .vpxi file into VP-SCE using File | Import.
- 6. Use Scripts | Make Thesaurus and select Common Drug Name for the Main Field and Synonyms for Sub Field and click OK.
- 7. Name your thesaurus and save it in your VantagePoint-SCE/Thesaurus/ folder.
- 8. Switch back to BizInt Smart Charts for Drug Pipelines.

BIZINT SMART CHARTS FOR DRUG PIPELINES

- 9. Import each set of clinical trial search results into BizInt Smart Charts and use File | Combine to create a combined chart.
- 10. Run the Generate Common Trial IDs tool and sort by the Common Trial ID field.
- 11. Display the Drugs column, save and select File | Send to Reference Rows and then use File | Export to export as Vantage Point XML.

VANTAGEPOINT - SMART CHARTS EDITION

- 12. On the Summary page, double-click on the Drugs field.
- 13. Review the list and note where multiple drugs are linked as one item using and, +,vs., etc. We're going to split drug terms on these links, one at a time.
- 14. Use Fields | Further Processing | Divide At | Plus to split any terms joined with +.
- 15. Repeat the previous step on the new list to split remaining joined drugs.
- 16. Apply Fields | Further Processing | Read Until First | Paren to remove anything in parentheses to help the thesaurus match.
- 17. Go to Fields Thesaurus and select the thesaurus you created earlier and click Use.
- 18. Use Fields | List Cleanup..., select the General.fuz file, and click Use. Drag and drop to to complete the cleanup for your drugs of interest and then click Accept. Saving the thesaurus is optional but can save time for future company cleanup tasks.
- 19. Select the rows for your drugs of interest, right-click and select Add Selection to Group..., and name your group.
- 20. Go to Fields | Create Field from Group Items and choose the group you just created.
- 21. Now you have a normalized field with just your selected drugs which you can export back to BizInt Smart Charts or use to build a timeline chart.

Cookbook of Disualizations & Reports

About this Cookbook

This "Cookbook" illustrates how to create some popular visualizations and reports from patent, clinical trials, drug pipeline, and gene sequence data using tools in the BizInt Smart Charts family.

Software for Business Intelligence

BizInt Smart Charts

To use these "recipes", you'll need the following software:

- BizInt Smart Charts for Drug Pipelines 3.7.0 (4.0 required for some recipes)
- BizInt Smart Charts for Patents 3.7.0 (4.0 required for some recipes)
- BizInt Smart Charts for Clinical Trials 4.0 (or later)
- BizInt Smart Charts Reference Rows 1.2.0 (or later)
- VantagePoint Smart Charts Edition (9.1 required for some recipes)

BIZINT SMART CHARTS TRIAL SOFTWARE

You can download BizInt Smart Charts trial software at: http://www.bizint.com/try

You can request a trial of VantagePoint - Smart Charts Edition at http://www.bizint.com/vpsce or contact us (email: support@bizint.com).

BIZINT SMART CHARTS PRODUCT DOCUMENTATION

You'll find more information on how to use BizInt Smart Charts software tools at: http://www.bizint.com/tips

Note: These recipes are constantly being tested and revised based on user feedback. We suggest that you check the website to see if there is a more recent version of your recipe. If you find any errors or need help, please contact us!

December 2016

Cookbook of Disualizations & Reports

Download the Software

- Customer downloads: http://www.bizint.com/downloads/ You will need to enter the userid and password supplied to your company.
- Trial downloads: http://www.bizint.com/try We encourage you to evaluate BizInt Smart Charts using your own data!

Keep up with the Latest Releases

- Latest release information web page: provides details on all releases. http://www.bizint.com/product/patents/latest_release.php http://www.bizint.com/product/drugdevsuite/latest_release.php
- Subscribe to release announcements by email or RSS feeds.
 http://www.bizint.com/support/SubscribeReleases.php

Using the Software

• Creating Reports from Databases and Hosts web page: follow the links on the left side of the web page for step by step instructions for each database/host. http://www.bizint.com/support/create/

Go to www.bizint.com/tips for links to these useful documents —

- Mini Guide: provides a step-by-step overview of the key features of each BizInt Smart Charts product.
- **Combining and Updating Reports**: a detailed discussion of features and options for creating combined and updated reports.
- Distributing Reports: a guide to choosing and using the export formats available with BizInt Smart Charts, including HTML, Word, Acrobat, and Excel.
- **BizInt Smart Charts Reference Rows Mini Guide:** a guide to using the Reference Rows utility for creating single rows combining information from related records.
- Gene Sequence Reports: describes the latest features for using BizInt Smart Charts with IP sequence databases.
- Cookbook of Reports and Visualizations: www.bizint.com/Cookbook



Contact Us for Help

- Email us at support@bizint.com
- Call us at +1 (714) 289 1000 (office hours are 8 am 5 pm Pacific)





Cookbook of Reports & Disualizations

The Cookbook of Reports & Visualizations illustrates how to create some popular visualizations and reports from drug pipeline, clinical trials, and patent data using tools in the BizInt Smart Charts family.

The Cookbook provides step-by-step recipes showing how you can create these reports and visualizations with your own data.

www.bizint.com/Cookbook