Visualizing a SAP Network

Vaden Masrani

SAP®

Loblaws

Indigo
Books · Gifts · Kids

Kellogg's

THE HOME DEPOT®

adidas®

Bell

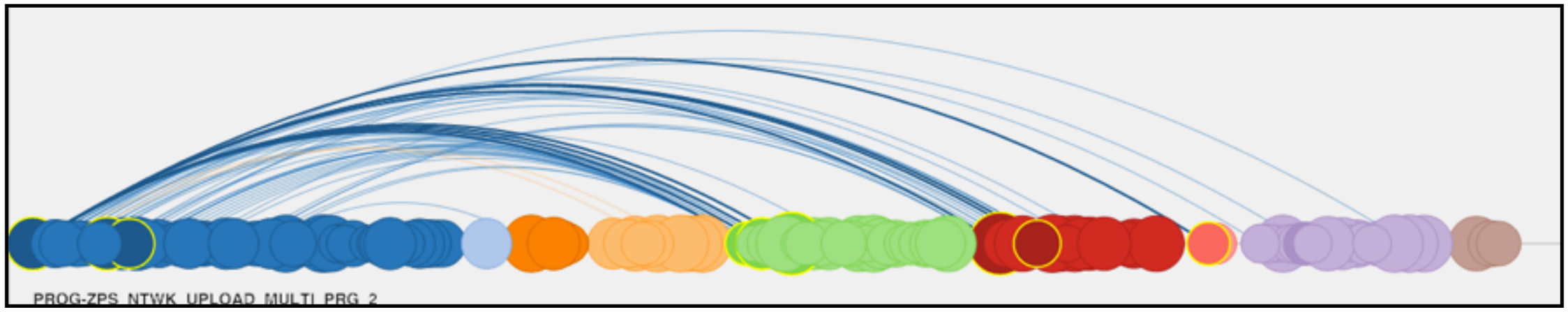
- **Why**: To help SAP developers understand the structure of their system in order to find inefficiencies and direct test suites.

- *“What programs are underperforming?”*
- *“What programs will be affected if I change X?”*
- *“Is this duplicate code?”*
- *“What items haven’t been used recently?”*

- **What**: Network data with nodes, links, and attributes

- **How**: Interactive arc diagram

- “No unjustified 2D”



Search Show All Export

Performance

Usage

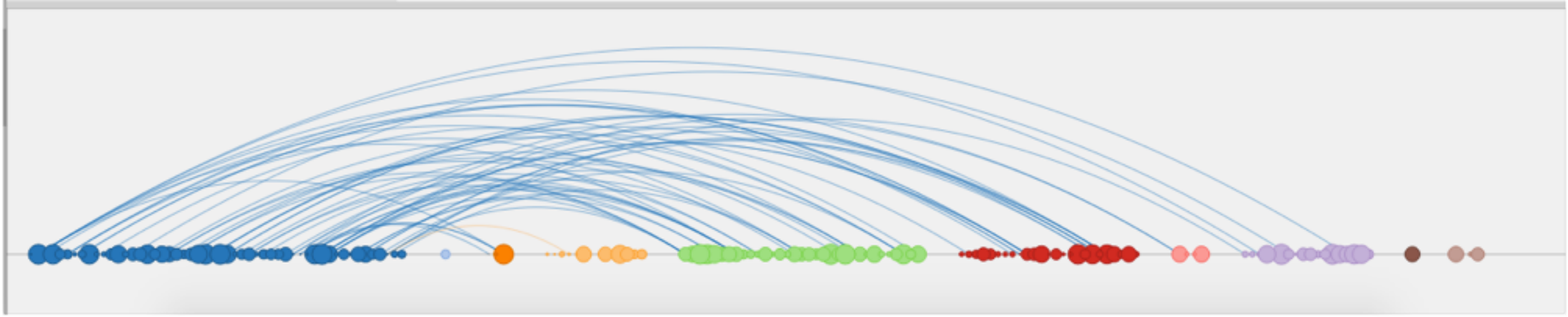
Sort Usage

Value Performance

Group All selected (12)

Hide lines

ID	Group	Performance	Usage	Lines of Code	Database Rows	Violation Density	Creation date
PROG-ZPV_PS_CHKGO_NTWK_NEW	PROG	0.281127	0.845571	6181		1410.206709	2014-02-11
PROG-ZPS_NTWK_LIST_HEADER_TEST1	PROG	0.316039	0.938528	4643		890.220433	2015-07-21
PROG-ZPS_NWH_MASS_UPD_SUBROUTINES	PROG	0.162553	0.866756	3492		0.308008	2013-06-10
PROG-ZPS_PAST_DUE_RESVN_TOP	PROG	0.0441443	0.884204	5143		0.825753	2013-03-18
PROG-ZPSNBEXT	PROG	0.156327	0.986886	3879		220.404869	2015-11-23
PROG-ZPSSREDAFF1_1	PROG	0.111517	0.814119	5796		260.26673	2010-11-17
PROG-ZPSSUB_NETWORKS_FORMS	PROG	0.333309	0.896822	4355		0.174648	2011-11-10
PROG-ZPV_CREATE_FFXA_MILESTONES	PROG	0.107318	0.99032	1862		230.712832	2015-02-22
PROG-ZPV_PS_CHKGO_NTWK_BST	PROG	0.02069	0.814675	9132		1200.548836	2010-11-19
PROG-ZPVA_EXP_ML_UPDATE2	PROG	0.151601	0.90432	5847		1240.645981	2010-10-15
PROG-ZPS_NTWK_LIST_SHARE_V2	PROG	0.211541	0.903976	2500		0.36216	2015-08-04



Search Show All Export

Performance

Usage

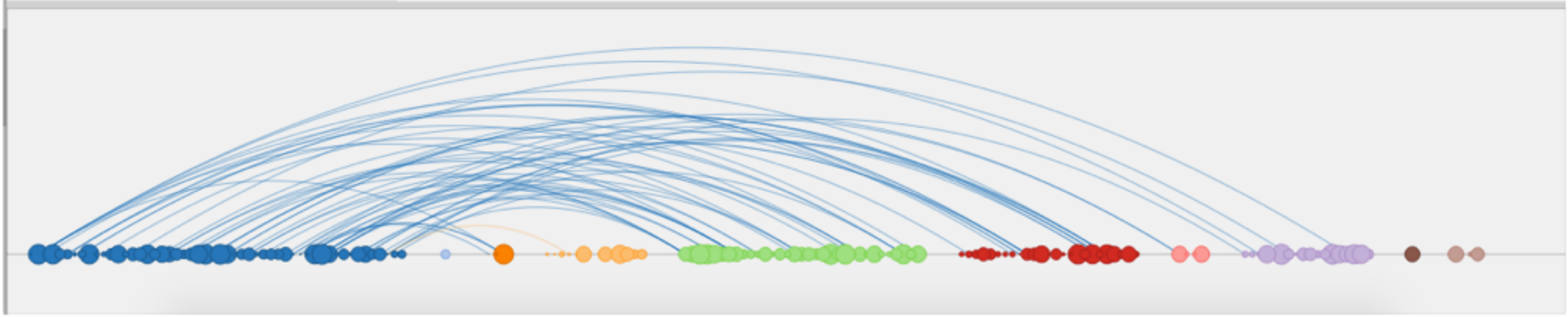
Sort Usage

Value Performance

Group All selected (12)

Hide lines

ID	Group	Performance	Usage	Lines of Code	Database Rows	Violation Density	Creation date
PROG-ZPV_PS_CHKGO_NTWK_NEW	PROG	0.281127	0.845571	6181		1410.206709	2014-02-11
PROG-ZPS_NTWK_LIST_HEADER_TEST1	PROG	0.316039	0.938528	4643		890.220433	2015-07-21
PROG-ZPS_NWH_MASS_UPD_SUBROUTINES	PROG	0.162553	0.866756	3492		0.308008	2013-06-10
PROG-ZPS_PAST_DUE_RESVN_TOP	PROG	0.0441443	0.884204	5143		0.825753	2013-03-18
PROG-ZPSNBEXT	PROG	0.156327	0.986886	3879		220.404869	2015-11-23
PROG-ZPSSREDAFF1_1	PROG	0.111517	0.814119	5796		260.26673	2010-11-17
PROG-ZPSSUB_NETWORKS_FORMS	PROG	0.333309	0.896822	4355		0.174648	2011-11-10
PROG-ZPV_CREATE_FFXA_MILESTONES	PROG	0.107318	0.99032	1862		230.712832	2015-02-22
PROG-ZPV_PS_CHKGO_NTWK_BST	PROG	0.02069	0.814675	9132		1200.548836	2010-11-19
PROG-ZPVA_EXP_ML_UPDATE2	PROG	0.151601	0.90432	5847		1240.645981	2010-10-15
PROG-ZPS_NTWK_LIST_SHARE_V2	PROG	0.211541	0.903976	2500		0.36216	2015-08-04



What: Data	Node/Link data; quantitative, ordinal and categorical attributes
Why: Tasks	Find extremum, find outliers, compare network topology, find similar items
How: Encode	Arc diagram layout, colour encodes type, size encodes user-selected quantitative attribute
How: Facet	Arc diagram faceted with a table and control panel
How: Reduce	Filtering
How: Manipulate	Zoom, pan, select
Scale:	~3000 nodes, ~15000 links
Technical	D3, Bootstrap, jQuery, DataTables.js, small widget packages

Lessons / Limitations

- Rapid prototyping vs performance vs elegance vs robustness

- Incomplete dataset

- Develop using dataset of correct scale… :/

- HTML5 Canvas vs SVG elements

- Lack of users

From here

- Integrate into existing CodeExcellence toolkit
- Test with real users and real data
- Clean up code and improve performance
- Scented widgets / improve search / arc direction
- Brush export