IIT Institute of Design

insight matrix
a user guide

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What is it?

- » a tool for finding patterns in qualitative data
- » a tool for bringing analytic rigor to qualitative research
- » an Excel Plug-in

What does it do?

- » allows researchers and project team members to set up a matrix of ideas
- » facilitates the scoring of these ideas against each other
- » sorts like ideas together
- » allows users to create clusters of the sorted ideas to use as frameworks

Who made it?

- » Professor Vijay Kumar and ID alumnus Brandon Schauer

A note on qualitative data

Learning about people in their own context is, without a doubt, the easiest way to uncover unmet or under-served needs. Thus, this type of research and related insights are a boon to user-centered product and offering teams. Unfortunately, anyone who has taken part in the collection and use of qualitative research understands the difficulty of turning observational data about people's lives into meaningful information for development.

The Insight Matrix Excel plug-in was created to address some of these difficulties.

A quick summary of use

Use of the Insight Matrix plug-in follows research and an initial sharing of observations, insights, and thoughts by a research or development team. A group familiar with the data in question selects no more than 100 observations or insights that are key to the project on which they are working. This initial step is achieved through informed judgement. These insights are then set up in an Insight Matrix in Excel and then scored together based on similarity. These scorings allow the Matrix to be sorted and clustered in a way that assist research and product teams to create systems of insights or frameworks to drive product definition.

Note The Insight Matrix plug-in is in beta and is not a fully developed application. Neither its creators nor the Institute of Design provide any guarantees with regards to use and function. Several bugs are known and are being worked on. Please save your file often.
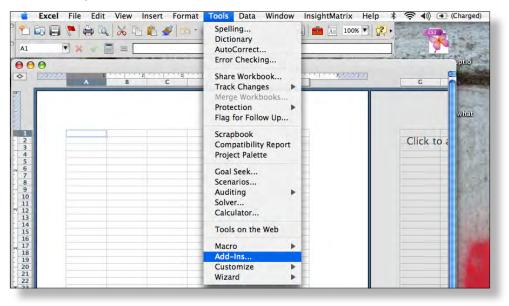
Preparing your data

While there are many applications for the Insight Matrix tool for ordering different types of information, this document will focus on qualitative user research. This research could be a set of interviews, ethnographic in context observations, video, or audio. Regardless, a team must turn individual "point observations" into "point insights". As the Insight Matrix tool is an Excel plug-in, it is easiest to compile a final list within Excel itself. See the example below for a few observations and their related insights.

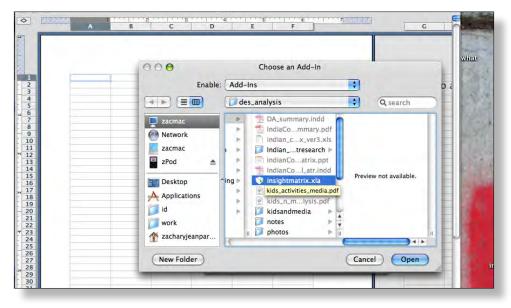| estamp	Interview	Observation/Quote	Insight
–30:05	8	He has developed a document with 25 suggestions of how to improve the software development process. He discussed the document with the third or fourth level management and hasn't	The unresponsiveness to some extent frustrates idea owners
–03:18	8	An idea management mechanism is used to establish 5-yr goals. However, people responsible for it are so entrenched in the status quo that they are resistent to ideas requiring dramatic changes.	People's obessesion with status quo has become the obstacle to new ideas
–10:21	8	Some developers hardly use the developer network while others often do. ▓▓ developers deeply involved in older technologies are not interested in ▓▓ which is more Java-focued and new-tech oriented. As a comparison, ▓▓ colleagues are more recept	People are resistent to "not-invented-here" ideas and tend to stick to what they have been familiar with.
–26:09	3	When a complete new idea is presented, people are likely to throw out their criticism on the viability of the idea, which is often times proved right in the end. This has a negative impact which keeps one from presenting his new idea / prototype for feedb	Ideas are killed because of criticism
–22:55	8	Processes in ▓▓ have been changing and evolving. And people have to constantly adjust themselves to the new processes without really understand why those changes and how diffferent they are from previous ones.	Process transparency is an issue
–01:52	12	There was a committee responsible for evaluating all the ideas. Those ideas which passed the second phase went directly to ▓▓ Other than that, ▓▓ didn't know the rest steps of the competition since his idea didn't go through the second step.	Special events allow for a limited set of new ideas to go directly to senior management.
–29:04	12	More user interviews should be conducted with focus on the areas where ▓▓ could deliver on remarkably improved user experience. As a comparison, trying to do everything usually results in the loss of focus.	Loss of focus negatively influences the efficiency and quality in delivering results.
–11:48	3	▓▓ is now in the "usage analysis" phase which has lasted for two years and will last another half a year. He only spends part of	Projects that go long in time lose touch with market and user requirements.

It is important to note that scoring can be a lengthy process as the number of observations increase. The tool can handle a matrix no larger than 100 x 100 and it is suggested that users have as few as possible while still retaining nuances in the research data.

Installing the tool

With Microsoft Excel open, select the Tools menu and the Add-Ins option.
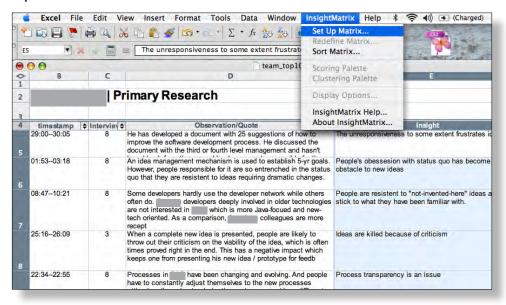

Navigate to the location of the Insight Matrix plug-in on your computer. Place the plug-in file where it will not have to be moved as Excel accesses the file each time you start Excel.
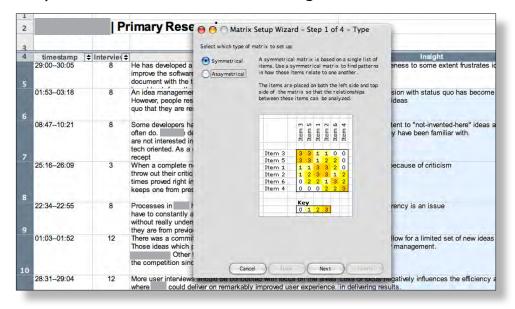

Note On Windows PC's, users may have to update security options for the Insight Matrix plug-in to load and function properly. In the Tools menu, access Options, Security, and Macro Security. Set security settings to Medium or low.

Setting up a matrix

Following install of the plug-in, you will now have an "InsightMatrix" menu option. Open this menu and select Set Up Matrix.

Select the type of Matrix you would like to create. Symmetrical Matrices scores data against itself where Assymetrical score two sets of data against each other.

Select the size of the matrix and the data you wish to include in it. Select Finish when complete.
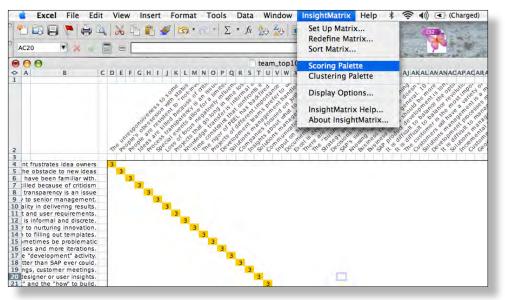

Your Matrix is now set up but you will most likely wish to format it for easier scoring. Format the left and right columns as you see fit.
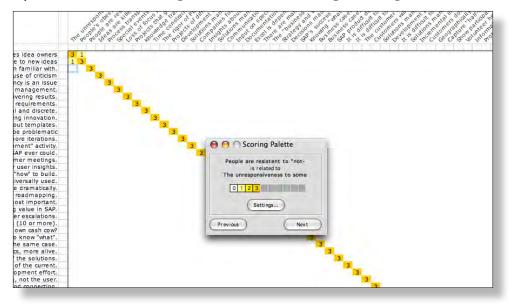
Scoring

Scoring observations, insights, or concepts against each other is best done as a group activity. This helps combat the innate biases we each have individually. That said, scoring can be a lengthy, time-consuming process and may need to be split up as the size of the Matrix grows. At a minimum, spend the first two hours together as a group to establish a common understanding of the scoring range. In general, line items that are more similar receive a higher score while those which have no similarity receive a zero The values in between offer users an ability to make finer distinctions in similarity.

After formatting your blank Matrix, select the Scoring Palette option in the InsightMatrix menu.
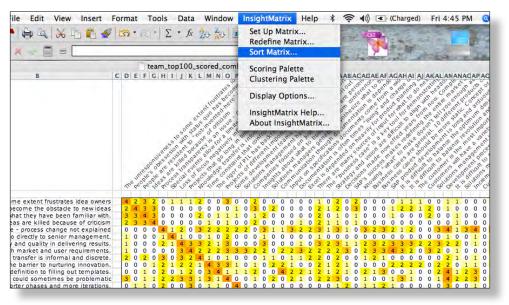
The Scoring Palette displays the partial text from two line items and allows users to select the value via mouse click. Each click automatically moves the user to the next scoring relationship. Users can move forward and back using the Next and Previous buttons as well as select a limited number of options within Settings. Save often during scoring.
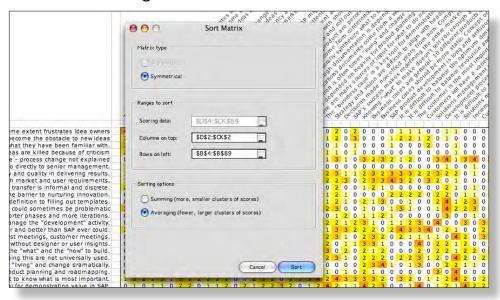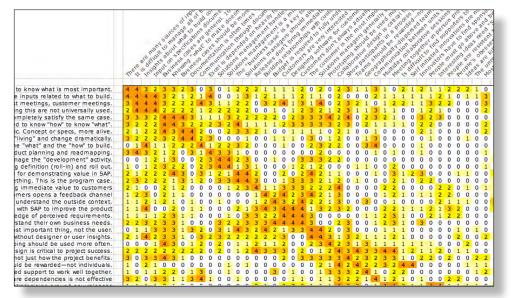

Sorting & Clustering

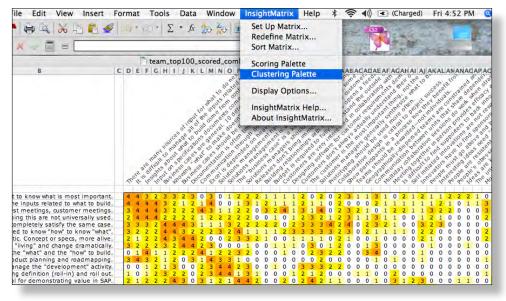Once scoring is complete, select the Sort Matrix option from the InsightMatrix menu.

The Insight Matrix plug-in offers two types of sorting options, but at this point, Summing has a software bug. Select Averaging for consistent results. There will be a progress bar but know that large matrices can take minutes to sort.
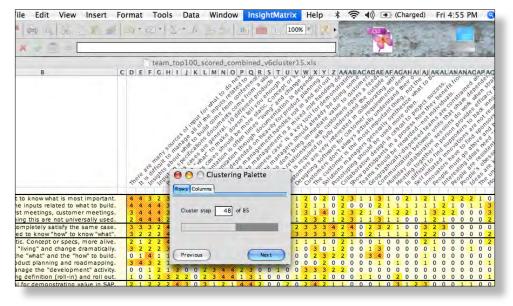

The newly sorted Matrix will look significantly different visually. The plug-in has placed similar items close to each other. It is best to duplicate this sheet before clustering.

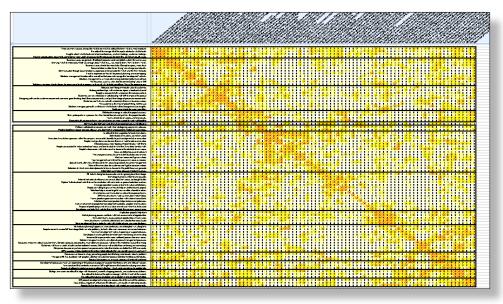Next, select Clustering Palette in the InsightMatrix menu.

Using the Clustering Palette is like setting setting a threshold of similarity. Initially, each line item is its own cluster. Moving through each "step" in Clustering creates fewer and larger clusters. The final step will result in one cluster of all line items - this is not valuable. With a large matrix, clustering can be done at two levels of fidelity: first to produce a matrix with 10 - 20 groups, second to produce one with 4 - 8 groups. The clustering process is guided by informed judgement. One stops the clustering when the groupings are similar within them, and different when compared. Save the clusters.
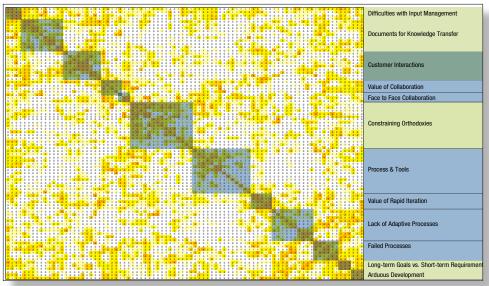
Naming clusters

Following this fairly lengthy set up, scoring, sorting, and clustering process, giving the groupings by naming them is often an exciting and fruitful group activity.

Clusters of insights come together to produce system level frameworks which can represent the mental model of subjects, activities in a system, stages in a process, or functions needed to be fulfilled. The result will depend largely on the type of data entered.

A note on frameworks

The quality of results in using the Insight Matrix tool largely depends, as in many systems, on the quality of input. That said, using this tool, even with less than perfect data can provide users with a clearer picture of how qualitative data is best organized.

The final named clusters can be used for a variety of purposes. Teams many times use the set as one side of a concept matrix for framed idea generation. Turning these clusters into positive statements can provide criteria for design. Regardless, the benefit of having rigorous frameworks generated from qualitative data is significant.