

How to make smart surveys with rules?

My first modem, a device that connected my computer to the world, produced a funny 'beep-beep-beeeeeep' music ([listen!](#)). I had received it from a market research institute. They would send me weekly questionnaires via the modem. Since then I associate surveys with the 'beep-beep-beep' noise.

Each week I completed the questionnaire in about an hour and that resulted in a welcomed contribution to my student budget. The market research institute created a competition among participants and I won with a survey about artificial intelligence. This was 1992 and my first survey.

Do you also get tired of every online purchase resulting in a request to complete a lengthy survey?

What I learned is that a survey should be short and to the point. I never stopped creating surveys and it is true:

life is easier with the introduction of tools like SurveyMonkey.

This is the sixth post in a series on the way rules are used in apps and software 'for the millions'. Earlier posts dealt with [Outlook](#), [Salesforce](#), [Shopify](#), [Excel](#) and [IFTTT](#).

How does SurveyMonkey use rules to customize their product?

SurveyMonkey is an online survey development cloud-based software product providing free customisable surveys, as well as paid programs that include data analysis and data representation functionality.

I use SurveyMonkey to speed up the knowledge acquisition process prior to a workshop for working out details. Many other individuals and companies use SurveyMonkey, so you can imagine that it needs to deal with a high variety of audiences, questions and styles.

Survey-Monkey has rules to deal with this variety. What kind of rules do they support?

Question skip logic

A survey consists of questions with answer options on a page. Suppose your survey is for adults and you start your survey with a drop down question for an age category. Then you can use 'question skip logic' to an answer option by selecting the next page for each answer.

This is very simple parameterized logic.

Condition action rules

It gets more advanced when you use the advanced branching option. This option is recommended by the publisher since it allows you to get an overview of all rules, whereas the question skip logic is 'hidden' behind an answer option. A condition has the structure: SUBJECT - OPERATOR - VALUE. The subject is the answer to a question or data about respondents (passed by an external program - named variables - or stored in the contact list). There is a list of eight actions to choose from that defines what the user sees next (a page or question).

Entering a rule is simply supported by using dropdown boxes that make sure your syntax is always correct.

See example in screenprint:

Add Rule

The 'Add Rule' interface is divided into two main sections: 'Condition' and 'Actions'.
Condition Section: It features a 'Switch to Script Mode' link. The first condition is 'Q1. What is your g...' with the operator 'is exactly' and the value 'Female'. A second condition is 'Q2. What is your ...' with the operator 'is one of' and a list of values: '18 to 24', '25 to 34', and '35 to 44'. A dark button labeled 'AND' is positioned between the two conditions. A 'CONDITION' label with a plus icon is at the bottom left.
Actions Section: It contains a list of actions, starting with '1. Disqualify res...' and a trash icon. Below it is an 'ACTION' label with a plus icon.
Buttons: At the bottom right, there are 'CANCEL' and 'SAVE RULE' buttons.

After entering one or more conditions and one or more actions and pressing 'save', the rule is translated to a read-only and compact symbolic form. The animation below shows how they ensure that you know what it means.

The 'Advanced Branching Logic' section is part of a larger interface with tabs for 'ADVANCED BRANCHING LOGIC', 'QUESTION RANDOMIZATION', and 'PAGE RANDOMIZATION'.
Advanced branching rules: A single rule is displayed in a read-only field: $Q1 = C1 \text{ AND } Q2 \text{ IN } [C1, C2, C3] \Rightarrow \text{DISQUALIFY RESPONDENT}$.
Buttons: A 'NEW RULE' button with a plus icon is below the rule field. At the bottom right, there are 'CANCEL' and 'APPLY' buttons.
Additional Section: Below the rule list, there is a section titled 'If no other skip rules apply, proceed to this page...' with a 'Clear' button and a dropdown menu currently showing '-- Choose Page --'.

Multiple rules are listed on the same page and executed in the presented order. There is a conflict resolution strategy that will apply the action of the first rule that applies and ignore other rules of the same type.

ADVANCED BRANCHING LOGIC QUESTION RANDOMIZATION PAGE RANDOMIZATION

Advanced branching rules ?

Q1 = C3 => HIDE Q8

Q2 IN [C1, C2] => END SURVEY

⊕ NEW RULE

If no other skip rules apply, proceed to this page... Clear ?

-- Choose Page --

CANCEL APPLY

Result filter rules

The results of the 1992 survey on artificial intelligence came in as a stack of paper from a matrix printer (also fun to [listen!](#)). Can you imagine how much time I spent to analyse them?

In SurveyMonkey rules are also used to analyse survey results. The user may create and store rules that filter the data based on a condition. This condition is the same expression as used in the advanced branching logic. All conditions are applied which means that they are implicitly combined as a conjunction (AND).

There are two more applications of result filter rules but I believe this is more setting a parameter than defining a rule: one is to display only the results from certain questions and the other is to compare side-by-side two or more answer choices for a given question.

Useful functionality, but I can't tell why it's a rule, let alone a business rule.

How do we evaluate this functionality from a business rules perspective and what could be improved?

Hurrah for the advanced branching logic offering a complete listing of all rules.

Most of the tools I studied in this series of posts offer the logic only in the context of an option, which makes it difficult to get an overview of all logic. It makes sense that the publisher recommends the use of this feature over the conditional skip logic.

Improve the rules listing with meta data and exporting

But the publisher also knows that this is not enough. There is a section on testing and it starts with a warning: there is no way to see the applied logic along with the survey results and there is no way to view or export a map of your logic. Of course that is exactly what is needed together with the option to name rules and add a motivation or other meta data about a rule.

Decision tables and other advanced knowledge presentation forms

My intuition is that survey logic is highly homogenous. For each age-category you probably have a different page with slightly different answers. Why not use decision tables, show all options and select the next page? And if we are here: instead of a listing of all the rules, why not generate a decision tree of the complete survey?

Inferencing

We can hide questions and skip pages but there is no way to hide answers. I was surprised because it seems like a natural feature. I do not want to show the answer option 'buy wine' when I know the age of the respondent is less than 18. But I may be wrong here ...

I would love to hear what the real survey marketer needs in this respect.

Next in this series will be about rules making in Google's AdWords.



Copyright Notice: Some of the functionality described is paid functionality that was not in my SurveyMonkey plan. Therefore the screenshots used are copied from the SurveyMonkey manual. For the sounds I would like to thank the [website with sounds of old technologies](#).