

# FedCASIC 2018

## Creating a redesigned questionnaire for the Consumer Expenditure Survey using Colectica

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# Gemini redesign of the CE surveys

- As part of the redesign, we plan to update and streamline the CAPI instrument based on cognitive and online testing done by Westat and BLS.
- CE instrument redesign gives us the opportunity to move towards more efficient and comprehensive documentation of survey metadata.

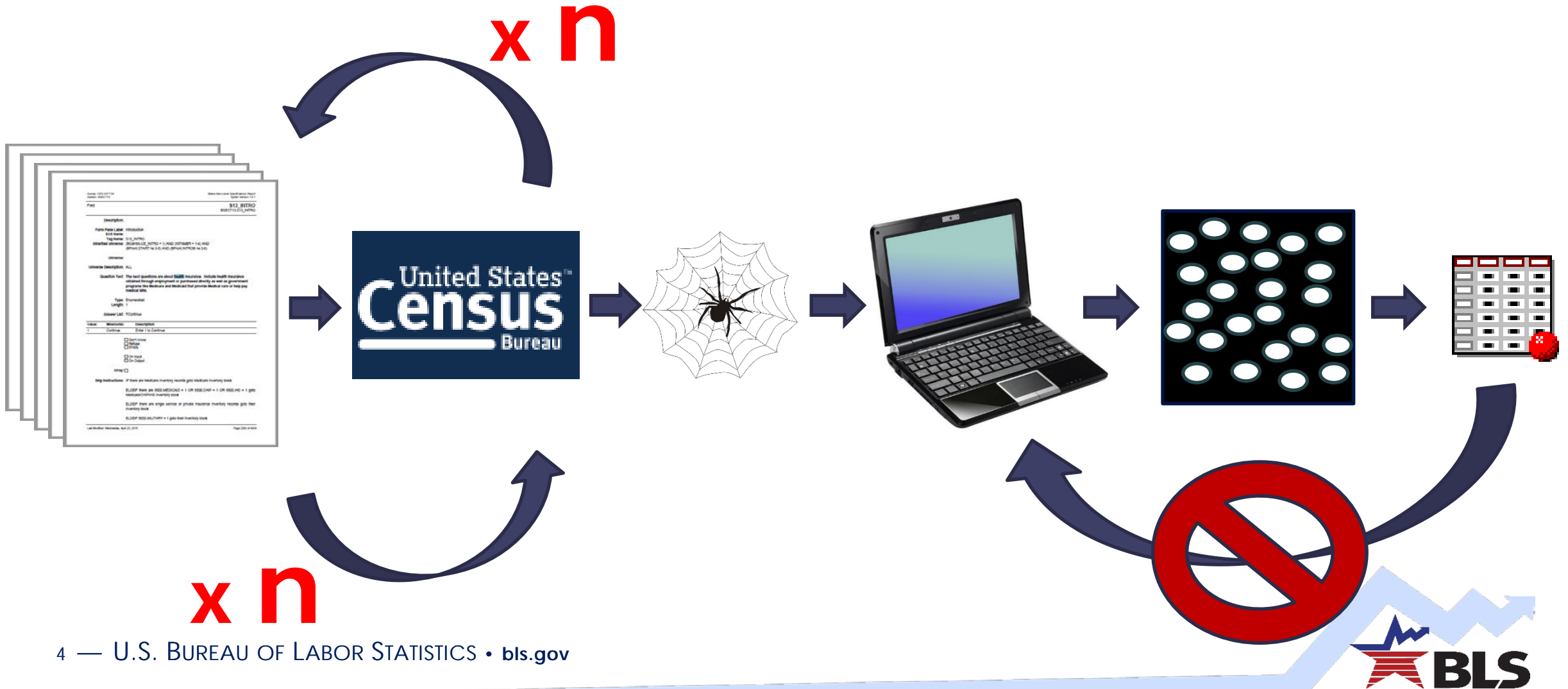


# Current Questionnaire Development Process

- The Interview Survey is long and instrument contains complex skip patterns designed to reduce respondent burden.
- Changes to questionnaire items such as wording, order, skip patterns, or new questions are often needed.
- CE provides detailed requirements, which Census then enters into their own specification system (SPIDER), and then programs the Blaise instrument. Changes are usually made every 2 years.
- No major redesign of CAPI instrument in over 10 years.



# BLS-Census CAPI development and data delivery



# Interview Survey Questionnaire Development

## Challenges

- No question bank that allows us to retrieve questions or compare questions across years
- No integrated mapping of questionnaire metadata
  - ▶ Multiple documents in different locations
- The changes document for each revision is in word/pdf
  - ▶ Difficult to navigate: current full specifications ~ 4,000 pages
  - ▶ Iteratively making design changes is difficult
- No direct link between questions and variables in the data set



# Metadata and DDI

- Metadata is data that provides information about other data. Metadata can be descriptive, structural, or administrative.
- The Data Documentation Initiative (DDI) is an international standard for describing the data produced by surveys.
- Enables us to document and manage different stages in the research data lifecycle from survey design to survey products.
- Produces machine readable output (xml files) which can be read by CAI systems.



# Why use DDI?

- Drive data collection
- Design reusable instruments
- Create interactive codebooks
- Maintain question banks
- Facilitate harmonization and concordance of variables across time
- Manage longitudinal or panel data



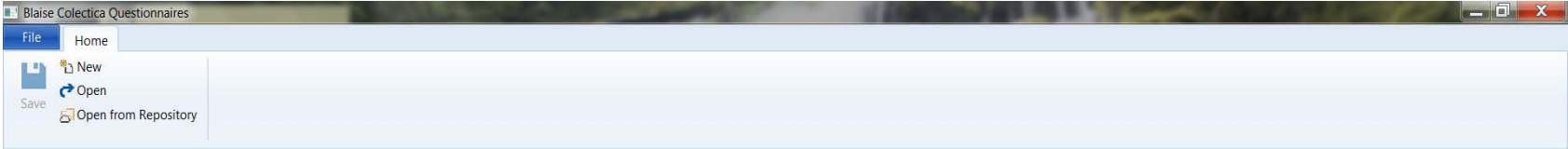


# Using Colectica

- CE has been exploring the use of the Colectica suite of software for better documentation of metadata.
- Colectica Questionnaires, is part of the Colectica suite of software based on DDI. Collaboration with Blaise at Statistics Netherlands.
- Testing the use of Colectica Questionnaires to create requirements for the streamlined CAPI instrument.
- Create proper documentation of metadata prospectively rather than having to do it retroactively.



# Colectica Questionnaires



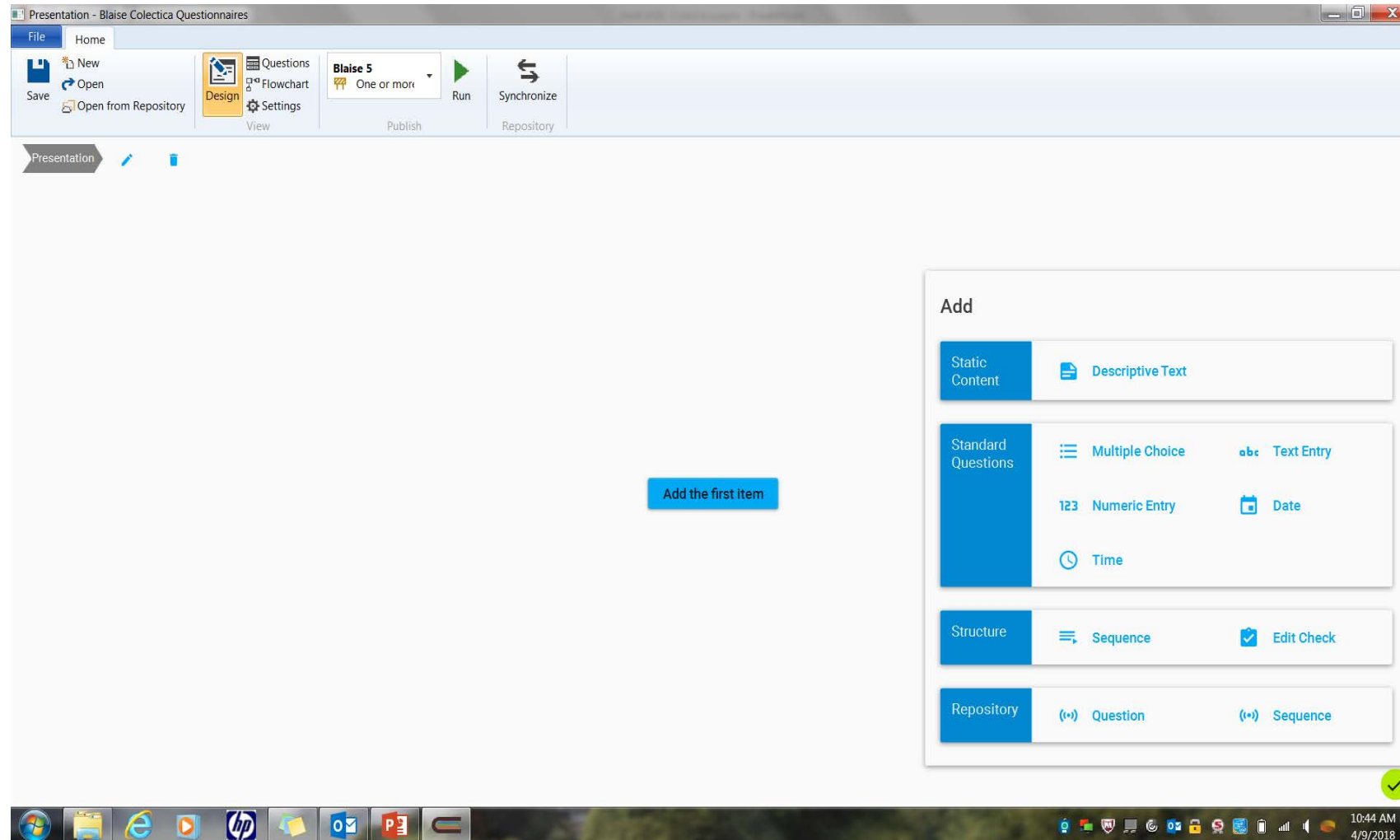
Welcome

Create a New Survey

Open a Survey



# Adding a new item



# Adding a multiple choice question

The screenshot shows a web-based interface for creating a multiple choice question. The window title is "Multiple Choice". The main section is titled "Question Attributes".

**Question Attributes:**

- Name:** Q1
- Question:** Since the first of November, have you had expenses for any of the following?
- Instructions:** Read each item on list
- Selection Style:** Select all that apply

**Choices:**

ID	Name	Label
1		Gardening or lawn services
2		Housekeeping services

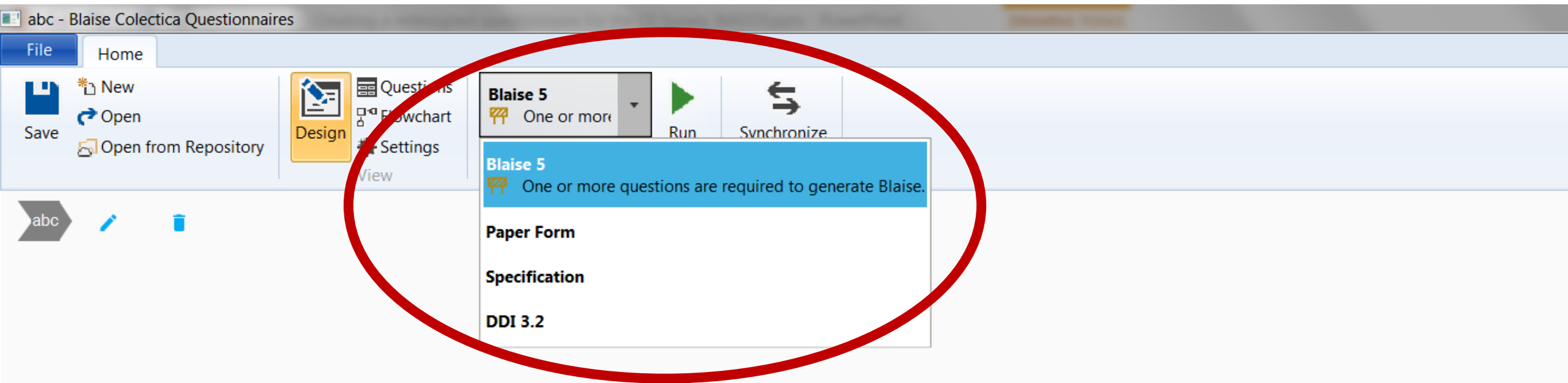
The interface includes a "Close" button in the bottom right corner. The Windows taskbar at the bottom shows the time as 10:49 AM on 4/9/2018.

# Colectica Questionnaires: Advantages

- Creates DDI based survey specifications.
- Multiple output formats:
  - ▶ Blaise 5
  - ▶ Machine readable xml files
  - ▶ PDF specifications and a paper form
- Rapid design iterations: Easy to make changes in the software and then generate new specifications.
- Uses a repository of questions so we can retrieve questions and blocks.
- Integrates with the rest of the Colectica software suite including Repository, Portal, and Designer which manage metadata through the survey lifecycle.



# Some advantages: Output formats



Add the first item

# Specifications

## OPSSSEC

Now I will ask you about expenditures for household maintenance, repairs and service contracts. Please remember to include any payments you made online or had automatically deducted. Also, please include any shipping and handling charges with the cost of any item that was shipped.

## OPSCSC

### Question

During [Month1], [Month 2], or [Month 3], did (you/you and any members of your household) have any expenses for--

**Instructions** \*Read each item on list

### Selection Type

SelectAllThatApply

1 Gardening or lawn care services?

2 Housekeeping services?

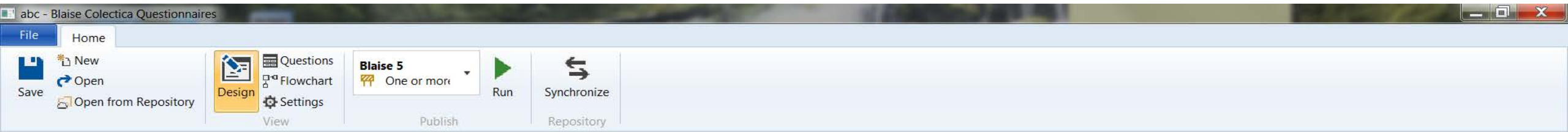


# DDI xml output

```
<ddi:Fragment>
-<ddi:Fragment xmlns:r="ddi:reusable:3_2">
-<Sequence xmlns="ddi:datacollection:3_2" versionDate="2018-01-31T15:45:12.5258909Z"
isUniversallyUnique="true">
<r:URN>urn:ddi:int.example:fa922901-9f13-4f7a-a4ae-f0007bbf15d9:1</r:URN>
<r:Agency>int.example</r:Agency>
<r:ID>fa922901-9f13-4f7a-a4ae-f0007bbf15d9</r:ID>
<r:Version>1</r:Version>
-<r:Label>
<r:Content xml:lang="en-US">Household operations</r:Content>
</r:Label>
+<r:OutParameter isUniversallyUnique="true">
```



# Another advantage: Repositories



Add the first item

## Add

Static Content

 Descriptive Text

Standard Questions

 Multiple Choice

 Text Entry

123 Numeric Entry

 Date

 Time

Structure

 Sequence

 Edit Check

Repository

 Question

 Sequence





# Colectica Questionnaire: Limitations

- Trial version cannot handle some of the more complex questionnaire design elements, such as:
  - ▶ grid questions
  - ▶ reusable lists of response options
  - ▶ adding custom fields for specifications
  - ▶ setting don't know and refusals globally
  - ▶ ability to store and cumulate display logic
  - ▶ rosters and loops
  - ▶ adding comments to questions
  - ▶ dynamic text
- We got around the limitations by programming what we could in the software and providing a cover sheet for each section with additional information that could not be entered in the software.
- Ideally, we want to enter all the information into the software so that it is fully captured in the specifications and xml file.

# Cluster screener (grid question) in the CE

42 ? [F1]

Since the first of November, have you had expenses for any of the following, either for you or for someone outside your household?

♦ Read each item on list.

- 1. Fresh flowers or potted plants?
- 2. Professional photography?
- 3. Services of lawyers or other legal professionals?
- 4. Accounting fees?
- 5. Occupational expenses, such as union dues or professional licenses?
- 6. Gardening or lawn care services?
- 7. Housekeeping services?
- 8. Home security system service fees?
- 9. Other home services or small repair jobs around the house, not previously reported?
- 10. Moving, storage, or freight?
- 11. Stamp or coin collecting?
- 12. Lotteries or games of chance?
- 95. Continue list

Section 19, Part A - Miscellaneous Expenses

Item	Misc exp/Item	Description	Month	Who	Amount	C	Combined Codes	Store	Online	Location	Any more
6	Garden/lawn serv	Garden/lawn serv	1	1	\$500						2
7	Housekeep serv	Housekeep serv	2	1	\$300						2
7	Housekeep serv	Housekeep serv	1	1	\$200						2
8	Home security	Home security	2	1	\$50						2

# Grid question in Colectica Questionnaires

The screenshot displays the Colectica Questionnaires software interface. At the top, there is a ribbon menu with tabs for 'File' and 'Home'. The 'Home' tab is active, showing several groups of icons: 'Save' (Save, Open, Open from Repository), 'Design' (Design, Questions, Flowchart, Settings), 'Publish' (Blaise 5 dropdown, Run), and 'Repository' (Synchronize). Below the ribbon, there is a 'Household operations' section with a pencil icon and a trash icon. The main content area shows a list of questions. The first question is 'OPSSEC' with a pencil icon and a three-dot menu icon. The text of this question is: 'Now I will ask you about expenditures for household maintenance, repairs and service contracts. Please remember to include any payments you made online or had automatically deducted. Also, please include any shipping and handling charges with the cost of any item that was shipped.' The second question is 'OPSCSC' with a list icon, a pencil icon, and a three-dot menu icon. The text of this question is: 'During [Month1], [Month 2], or [Month 3], did (you/you and any members of your household) have any expenses for--'. Below this text is a numbered list: '1 Gardening or lawn care services?', '2 Housekeeping services?', '3 Termite or pest control services?', '4 Water softening services?', '5 Home security system service fees?', and '6 Moving, storage or freight?'. A green banner below the questions contains the text: 'Follow up questions Display if OPSCSC Contains Any 1 Gardening or lawncare services? or 2 Housekeeping services? or 3 Termite or pest control services? or 4 Water softening services? or 5 Home security system service fees? or 6 Moving, storage or fr'. The final question is 'Conditional' with a list icon, a pencil icon, and a three-dot menu icon. It has a blue arrow pointing down and the text 'OPSCSCFL 12 items'. A green plus sign is visible in the bottom right corner.

File Home

Save New Open Open from Repository Design Questions Flowchart Settings View Publish Run Synchronize Repository

Household operations

OPSSEC

Now I will ask you about expenditures for household maintenance, repairs and service contracts. Please remember to include any payments you made online or had automatically deducted. Also, please include any shipping and handling charges with the cost of any item that was shipped.

OPSCSC

During [Month1], [Month 2], or [Month 3], did (you/you and any members of your household) have any expenses for--

- 1 Gardening or lawn care services?
- 2 Housekeeping services?
- 3 Termite or pest control services?
- 4 Water softening services?
- 5 Home security system service fees?
- 6 Moving, storage or freight?

Follow up questions Display if OPSCSC Contains Any 1 Gardening or lawncare services? or 2 Housekeeping services? or 3 Termite or pest control services? or 4 Water softening services? or 5 Home security system service fees? or 6 Moving, storage or fr

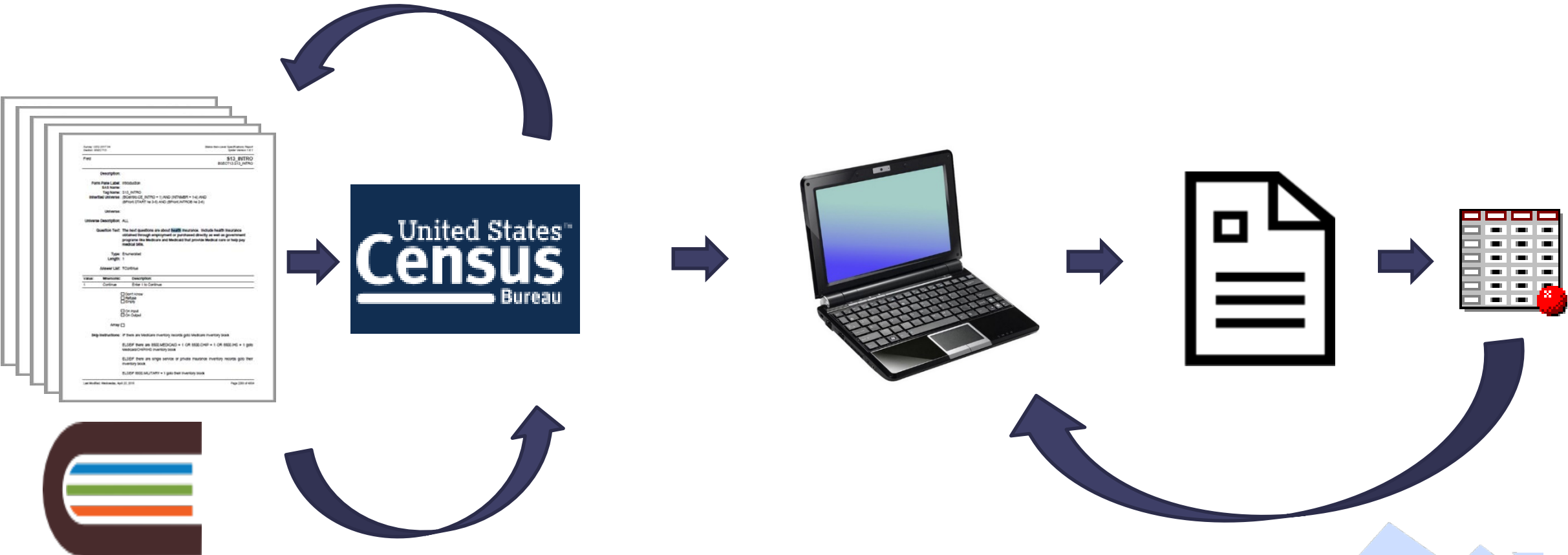
Conditional

OPSCSCFL 12 items

# Next steps

- Current and future versions of Colectica Questionnaires will address limitations of the software.
  - ▶ grid questions--**next version**
  - ▶ reusable lists of response options-- **next version**
  - ▶ adding fields for specifications—**next version**
  - ▶ setting don't know and refusals globally--**current release**
  - ▶ ability to store and cumulate display logic--**TBD**
  - ▶ rosters and loops—**next version**
  - ▶ adding comments to questions—**TBD**
  - ▶ dynamic text—**next version**

# Ideal world: CAPI development and data delivery



# Consumer Expenditure Surveys

Contact :

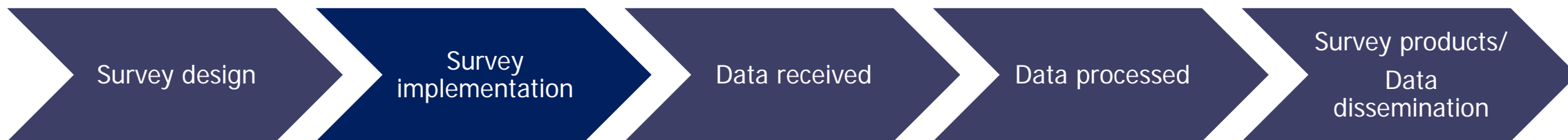
[krishnamurty.parvati@bls.gov](mailto:krishnamurty.parvati@bls.gov)



# Extra slides

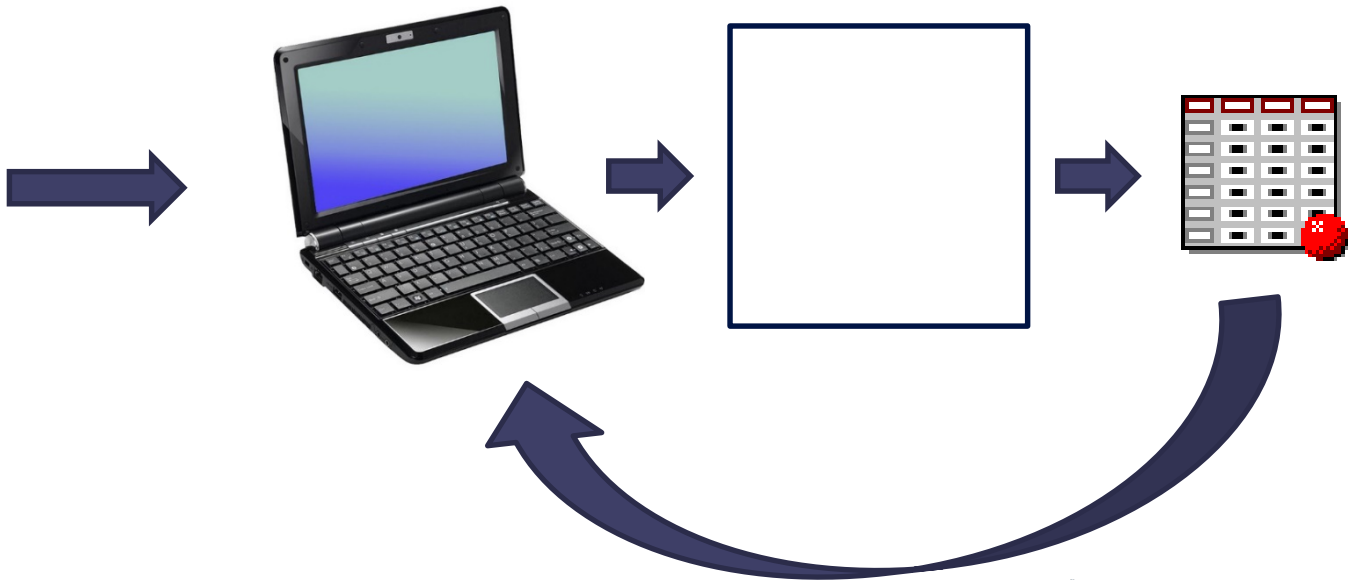
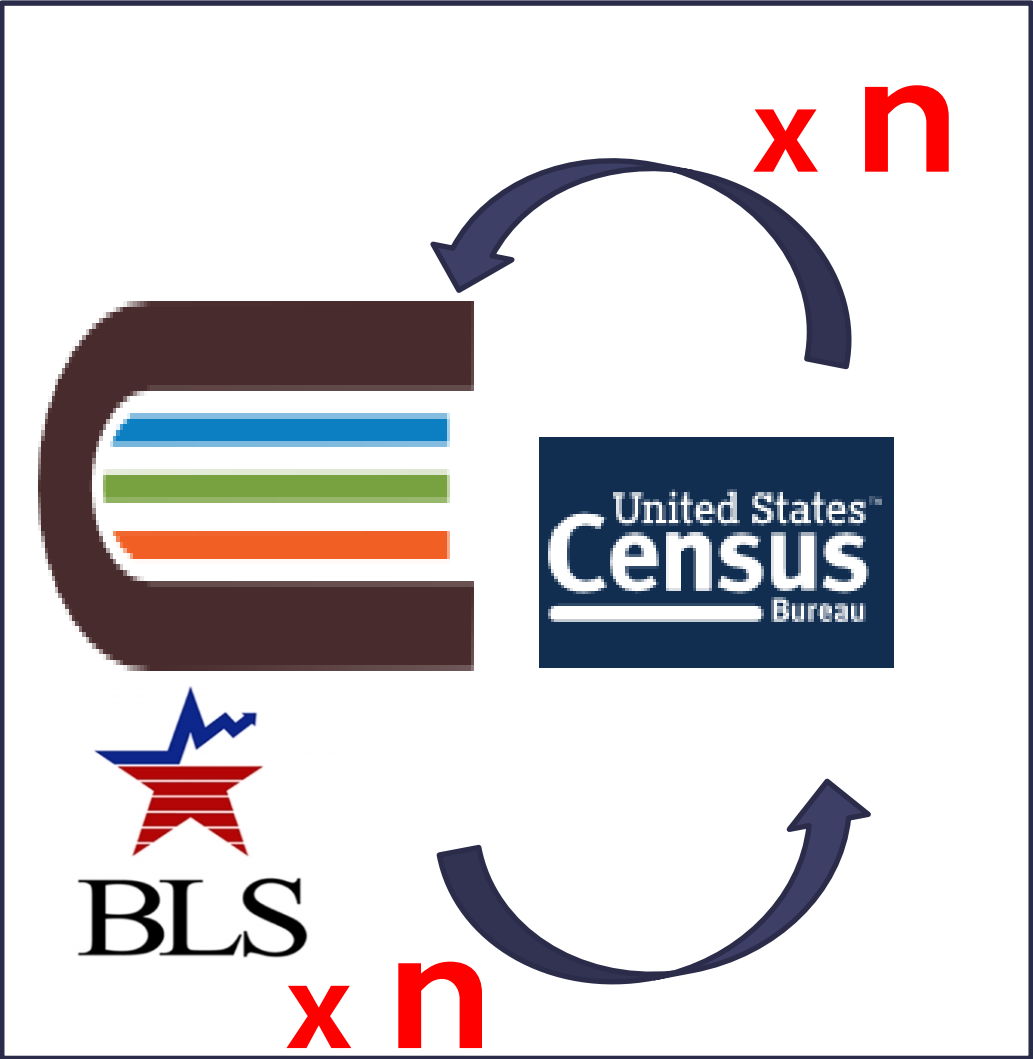


# Survey data lifecycle





# Ideal world: CAPI development and Data Delivery



# Cover page

## Household Operations: Cover Page

### A. Section Instructions:

This section is a laundry list section that follows the laundry list standards.

Design will be a table/grid format

Repeat OPSCSC through OPSOTH until OPSCSC = 99.

After OPSOTH, the FR is expected to continue reading the list of expenditures from the cluster screener (OPSCSC)

### B. Section Format:

Table with a maximum of 14 rows

### C. Don't knows and refusals:

1. Do not allow Don't Know or Refusal on:  
OPSCSC, OPSIDE, OPSECE, OPSCOM, OPSSEC
2. Do not display Don't Know or Refusal options on screen
3. Where Don't Know and Refusal are allowed, use keyboard shortcuts:

Don't know = CTRL + D

Refusal = CTRL + R

Bookmark=CTRL + B



# Cover page (continued)

**D. Fills:** 1.OPSCOM, OPSOUN and OPSOTH:

OPSCSC =	Category Name	OPSIEX Less than	OPSIEX Greater than
1	Gardening or lawn care services?	15	600
2	Housekeeping services?	20	1260
3	Termite or pest control services?	16	742

**E. Fills:** For OPSCOM, OPSOUN and OPSOTH: fill in...

**F. Outlets eligibility:** Outlets questions will be assigned based on a rotation matrix with POPS categories by PSU by quarter. The following categories are outlets eligible:

**G. Item description:** For OPSIDE: The text field should be a blank, non-required field to allow entry of the item description by the FR. After the FR enters a list number the instrument should place the cursor in the blank item description field. FRs can choose to hit enter to skip this. In case the item description is needed for a subsequent fill, the item code title will be used.