

Models integration using Jalapeno

Case study

Case study description (1)

- Existing company works in making predictions of house prices using external data and some pre-existing software. Existing process:
 - user goes to the web site
 - download the data
 - run analysis programs in some sequence and display the results
- This has to be done several times by different people with different parameters by different users (with typically low-level IT skills) so it is labour-intensive and error-prone.
- The system to be developed should allow predefined sequences to run. Each sequence has::
 - Automated access to a Web site to download data containing property prices
 - The application of one or more existing programs to the data to make some kind of prediction.
 - The presentation of the results in some form that is understandable by the customer (e.g. PDF document, or a graph)

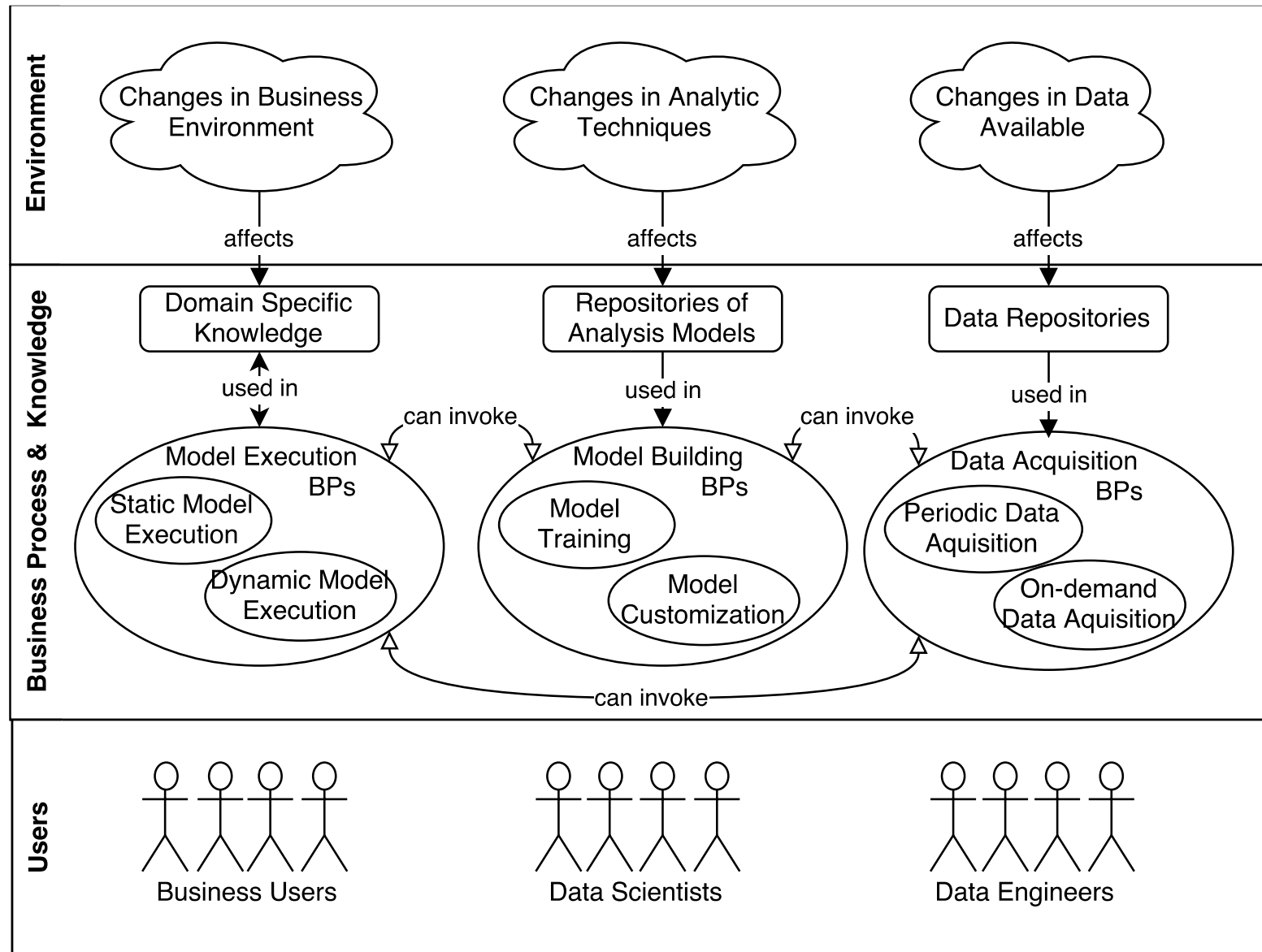
Case study description (2)

- The external data source in this case is Domain.com and we assume we have 3 data processing programs:
 - “Regression”: this program takes a dataset with clean data (e.g. type “house prices cleaned”) and returns results (e.g. dataset type “house price predictions”).
 - “Neural Network”: this program takes the same inputs as the previous program but works differently. The format of the output is the same (but the results are different)..
 - “Preprocessing”: converts data from Domain.com (e.g. from type “house prices domain” into dataset type “house prices cleaned”).

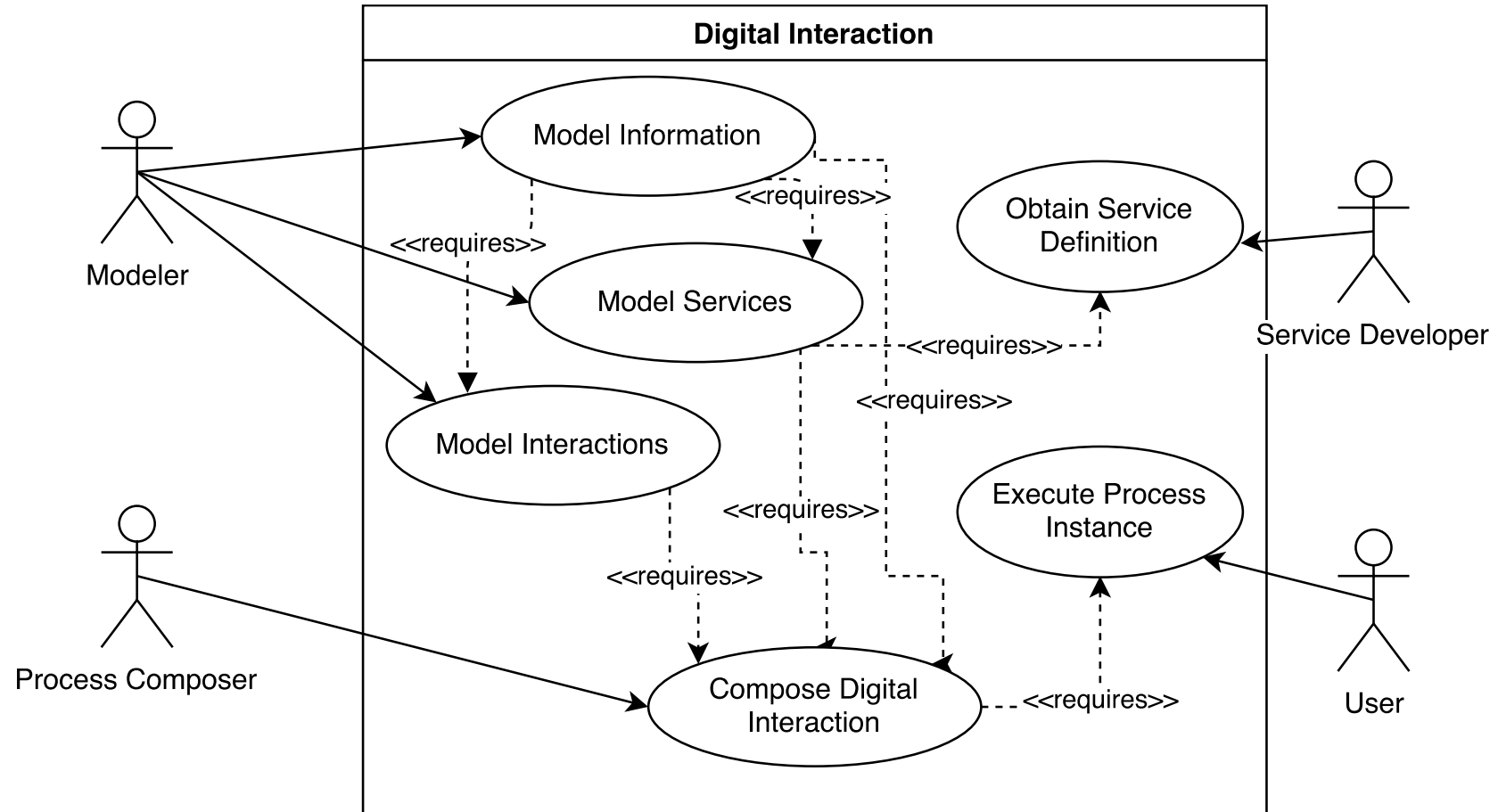
Case study description (3)

- User must be able to:
 - Import datasets: accessing Domain.com, supplying some user-defined parameters like the time period of interest, downloading data and creating a new dataset that can be referenced by its name (the dataset name is autocreated by the system).
 - Execute models: the user is given two options of running a sequence of data processing programs on any imported dataset. In the first option, the programs “Preprocessing” followed by “Regression” are executed. In the second one, “Preprocessing” followed by “Neural Network” are executed. Executing a sequence creates a new dataset with an automatically generated name and of type “house prices cleaned”.
 - Downloading or visualising datasets: the user is given 2 options. Choosing amongst two programs: one that converts a dataset of type “house prices predictions” into a PDF file or one that converts it into a graph.

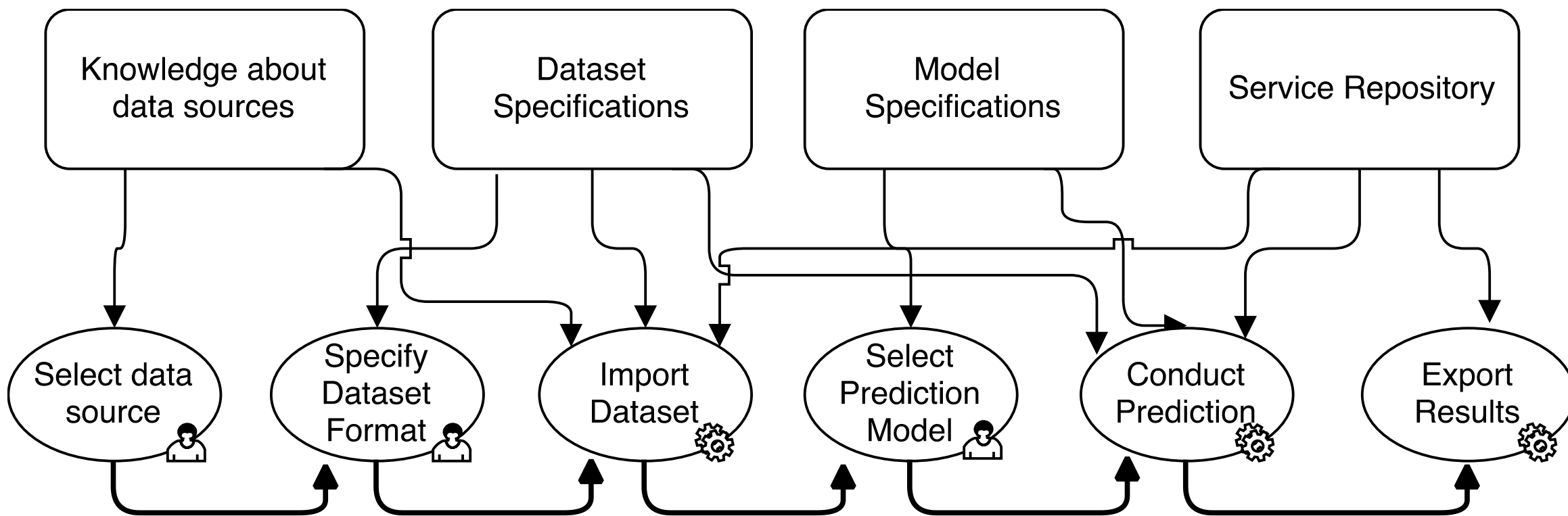
Context



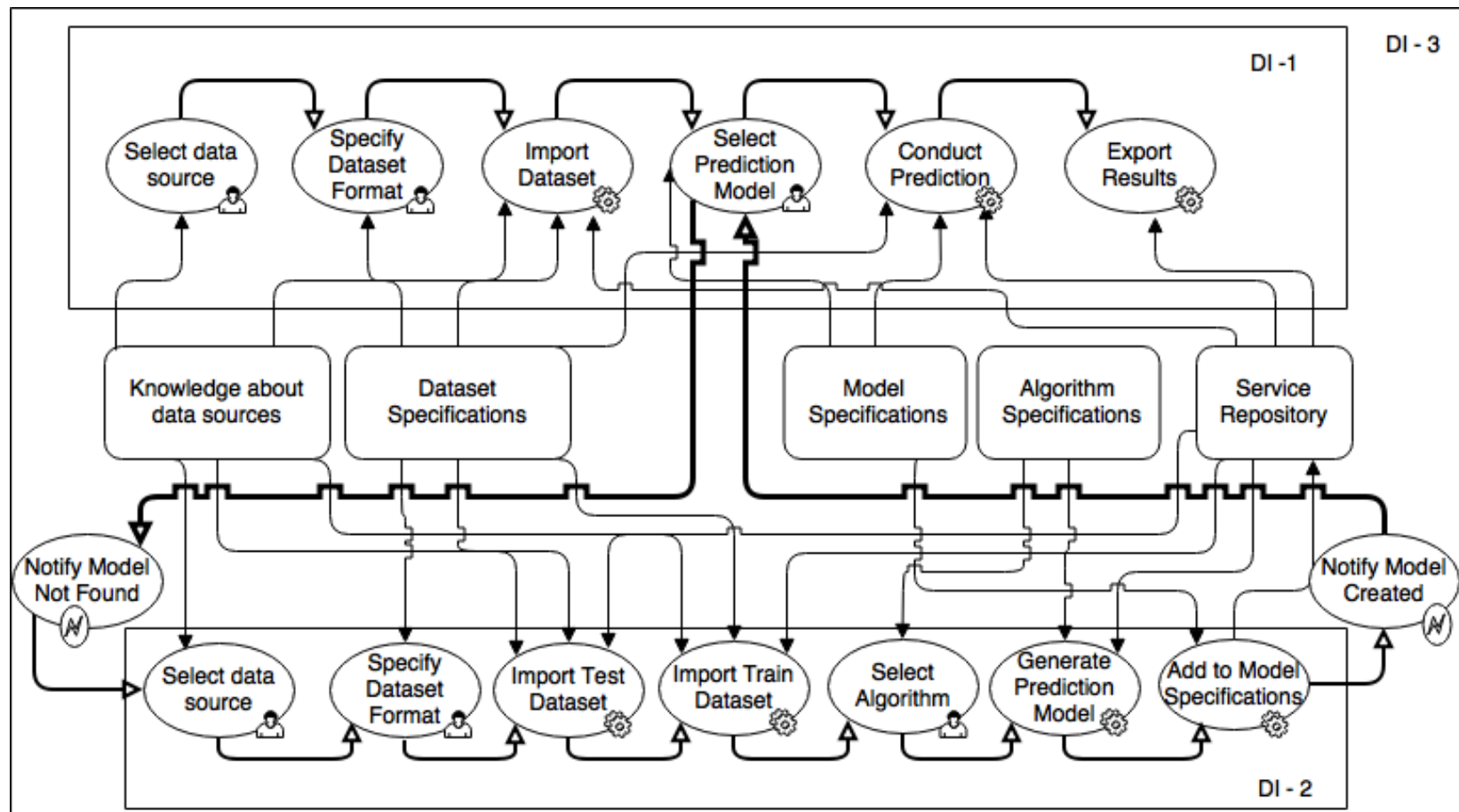
Digital interactions



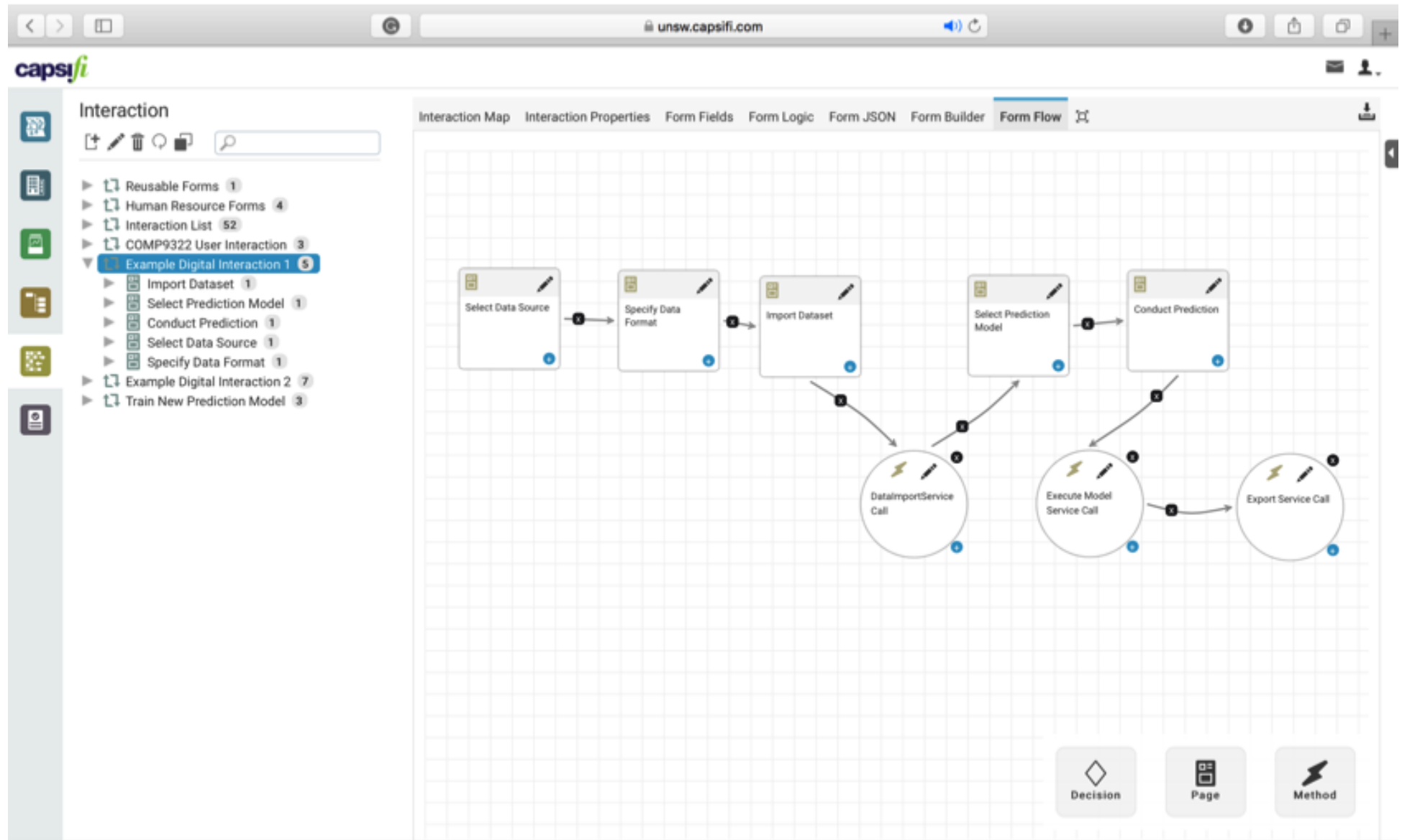
Information model / microservices / BPs



Reusability of BPs/services



Modelling Digital interactions in Jalapeno



Interaction

- Reusable Forms 1
- Human Resource Forms 4
- Interaction List 52
- COMP9322 User Interaction 3
- Example Digital Interaction 1 5
 - Import Dataset 1
 - Select Prediction Model 1
 - Conduct Prediction 1
 - Select Data Source 1
 - Specify Data Format 1
- Example Digital Interaction 2 7**
 - Import Dataset 1
 - Select Prediction Model 1
 - Conduct Prediction 1
 - Notify Model Created
 - Notify Model not Found
 - Select Data Source 1
 - Specify Data Format 1
- Train New Prediction Model 3

