TRICENTIS

Digital Disruption

The rise of SaaS and Digital presence in testing

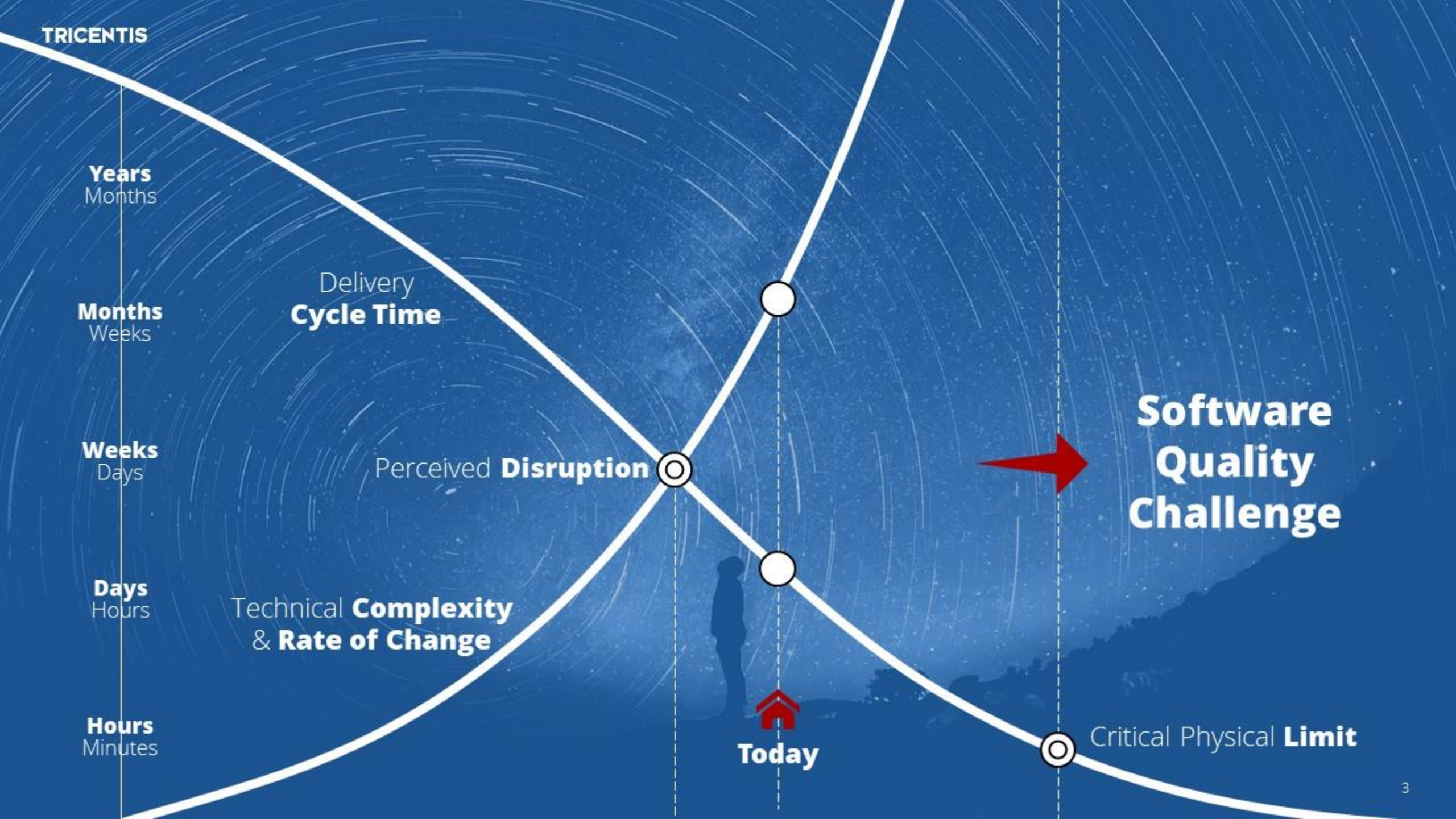
#SIGiST

Sai Niveda

"..the change that occurs when new digital technologies and business models affect the value proposition of existing goods and services" - **TechTarget**

"...an effect that changes the fundamental expectations and behaviors in a culture, market, industry or process that is caused by, or expressed through, digital capabilities, channels or assets." - **Gartner**

"Transformation in the way companies and agencies operate and how they engage with their customers" - **Deloitte**


TRICENTIS
Years
Months
Months
Weeks
Weeks
Days
Days
Hours
Hours
Minutes
Delivery
Cycle Time
Perceived Disruption
Technical Complexity
& Rate of Change
Today
Critical Physical Limit
Software
Quality
Challenge

"...Do it fast, simple, and right the first time (and did we mention fast?)."

- Marc Benioff– Founder, CEO Salesforce.com

Salesforce Platform/Ecosystem

~90% of Fortune 100 companies use at least 1 Salesforce app

Over 65% of all CEO prospects shortlist Salesforce as first or second choice

Salesforce is cloud

Quarterly releases & Organization level releases

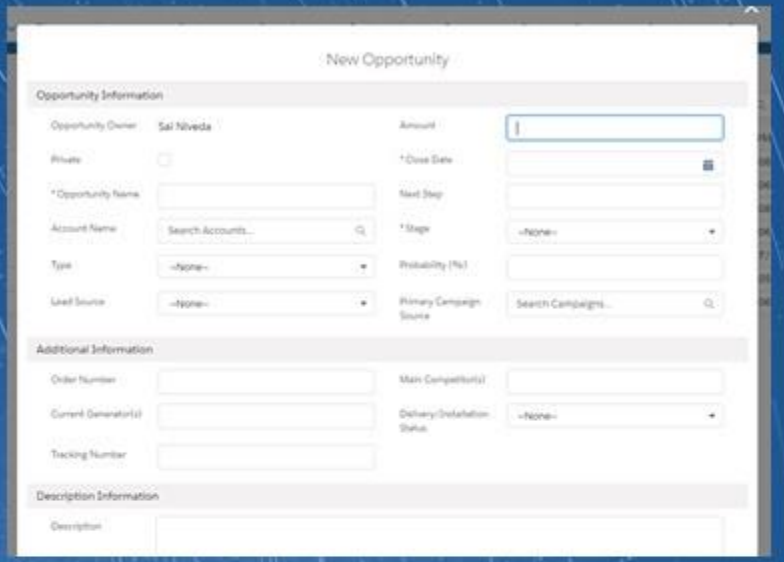
~60% effort for Scanning & Stabilizing Modules

...and a whole host of integrations to other Applications (Partner Apps, Workday etc.)

© Guy **Kawasaki** – "Great innovation occurs when you jump to the next curve"

TRICENTIS

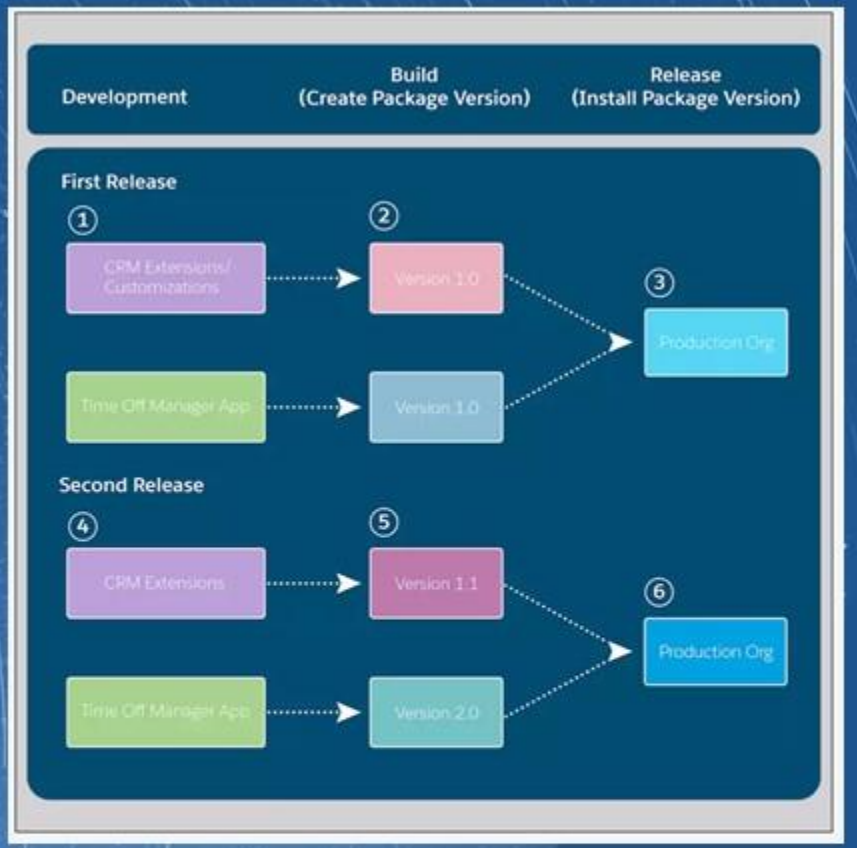
Lightning Experience



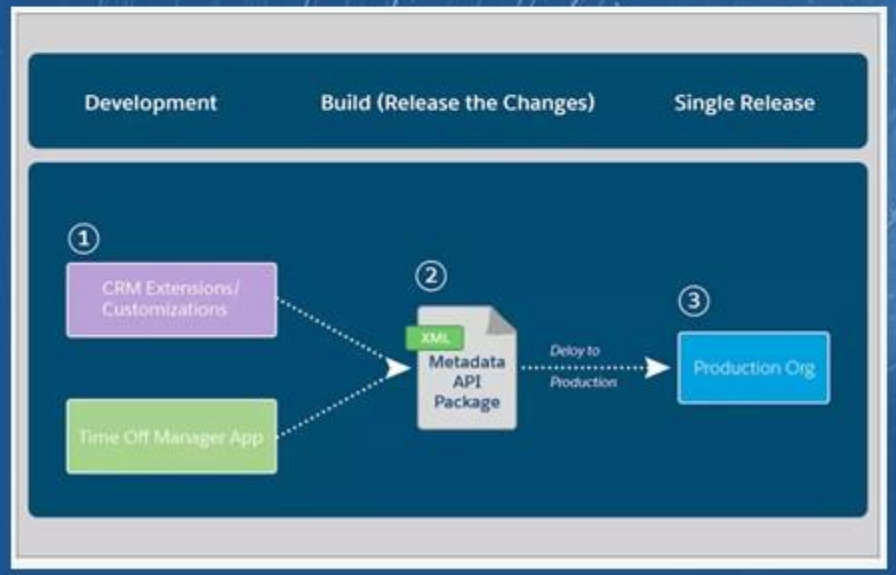
Salesforce Classic

TRICENTIS

Decoupled Release Process



Traditional Release Process



Source: Salesforce Trailhead

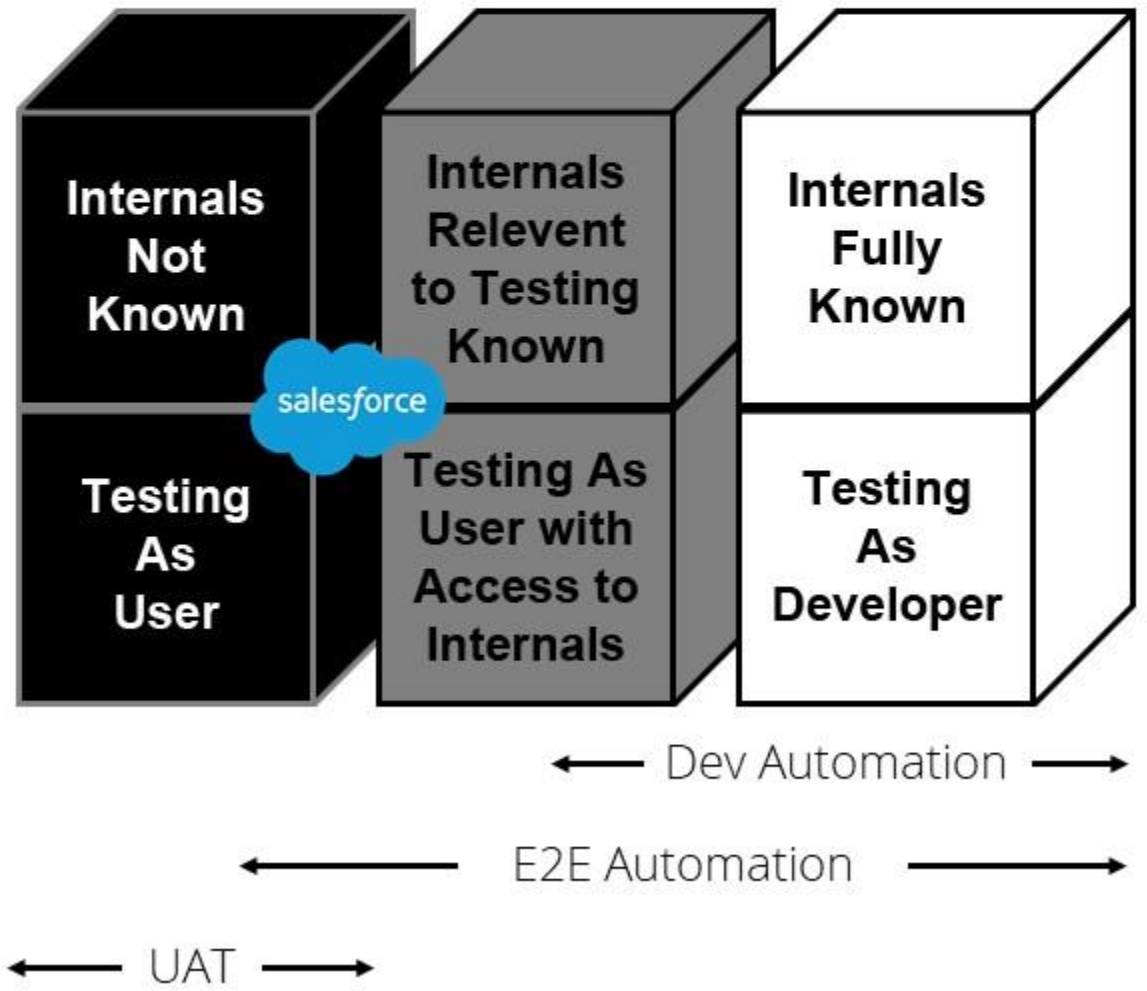
Key **Challenges for Test Automation** Tools

"When I design the test cases with the **objects identified**, they execute unreliably in Salesforce. Elements do not get consistently found in the UI"

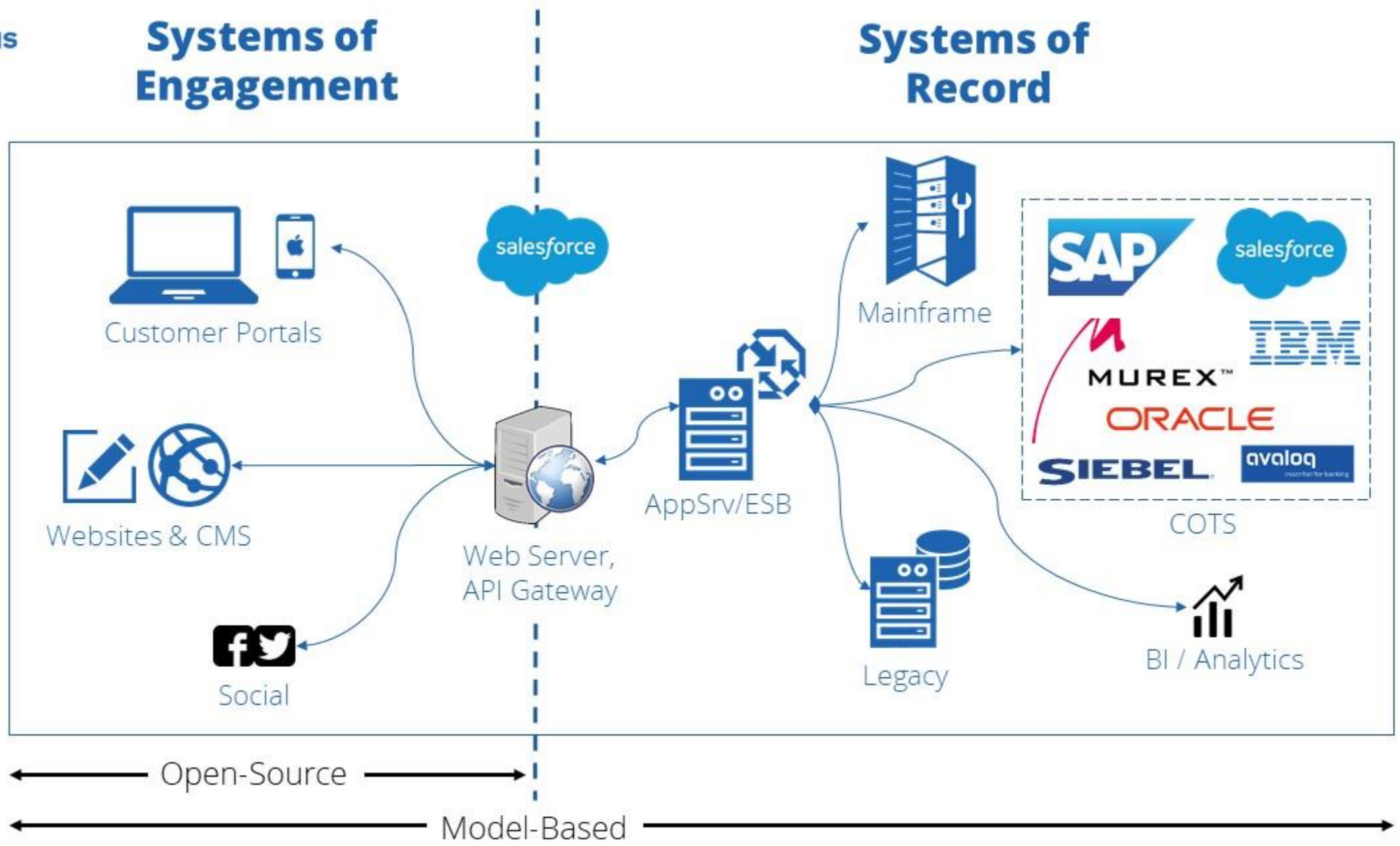
".. All pages have **dynamic parameters** (such as id, name) and objects are not recognised consistently and test [classes] fail"

Cause: Highly dynamic interface & in certain cases, lack of knowledge in the Technical aspects of Salesforce

Shades of **Grey**



TRICENTIS



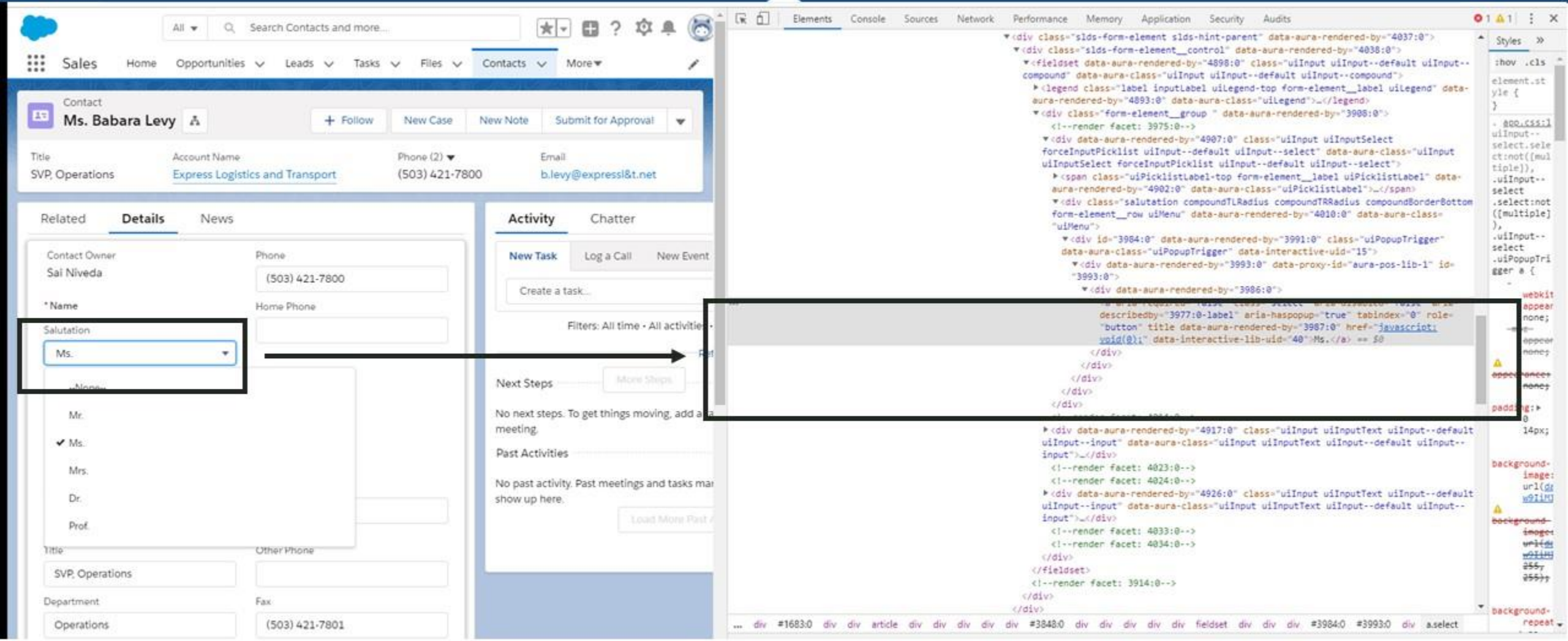
Scalability? Open Source can require a unique framework for each system

Challenge #1

Salesforce's HTML is challenging to interpret

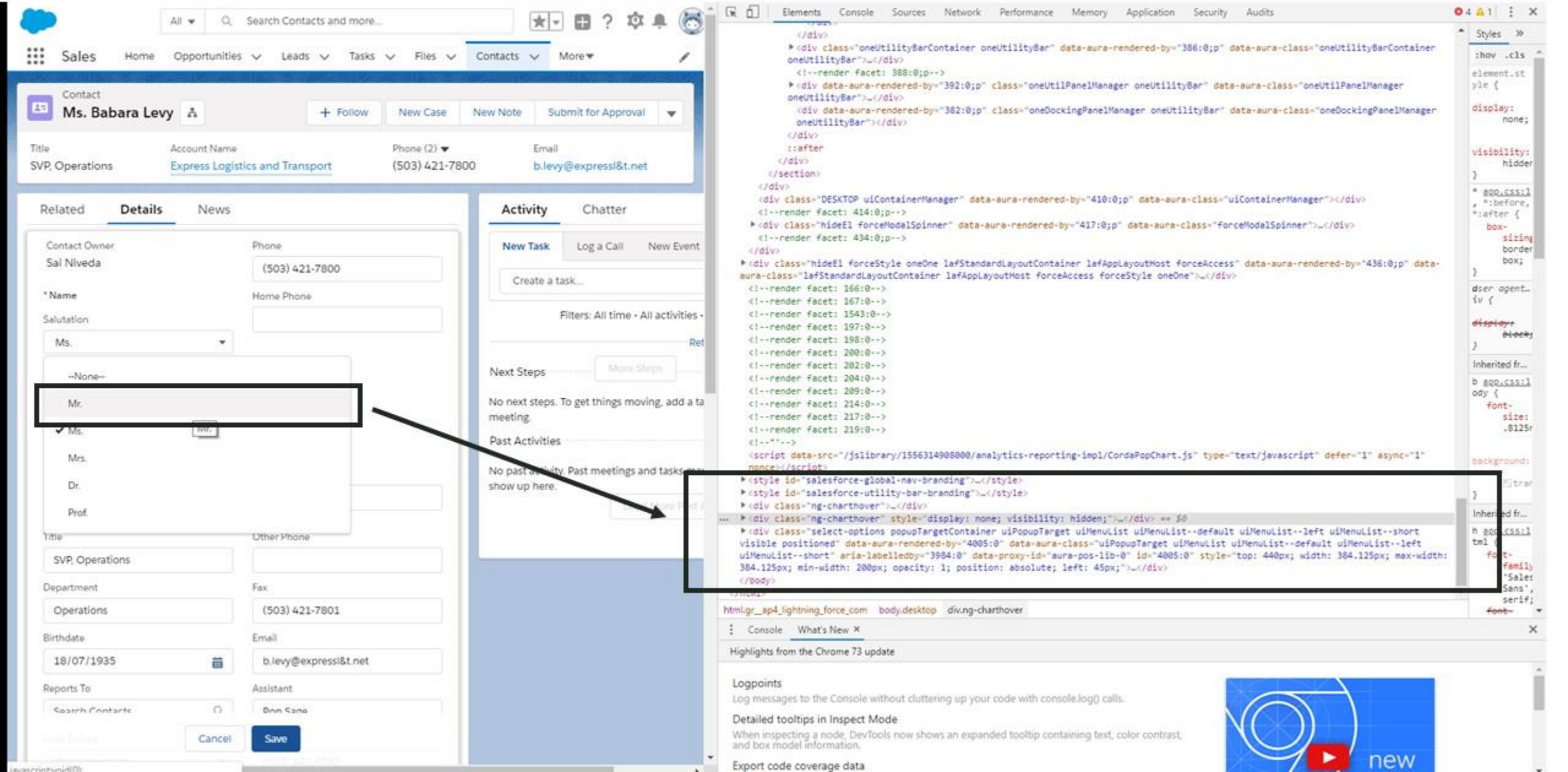
TRICENTIS

Dropdown – value range



TRICENTIS

Dropdown – value range

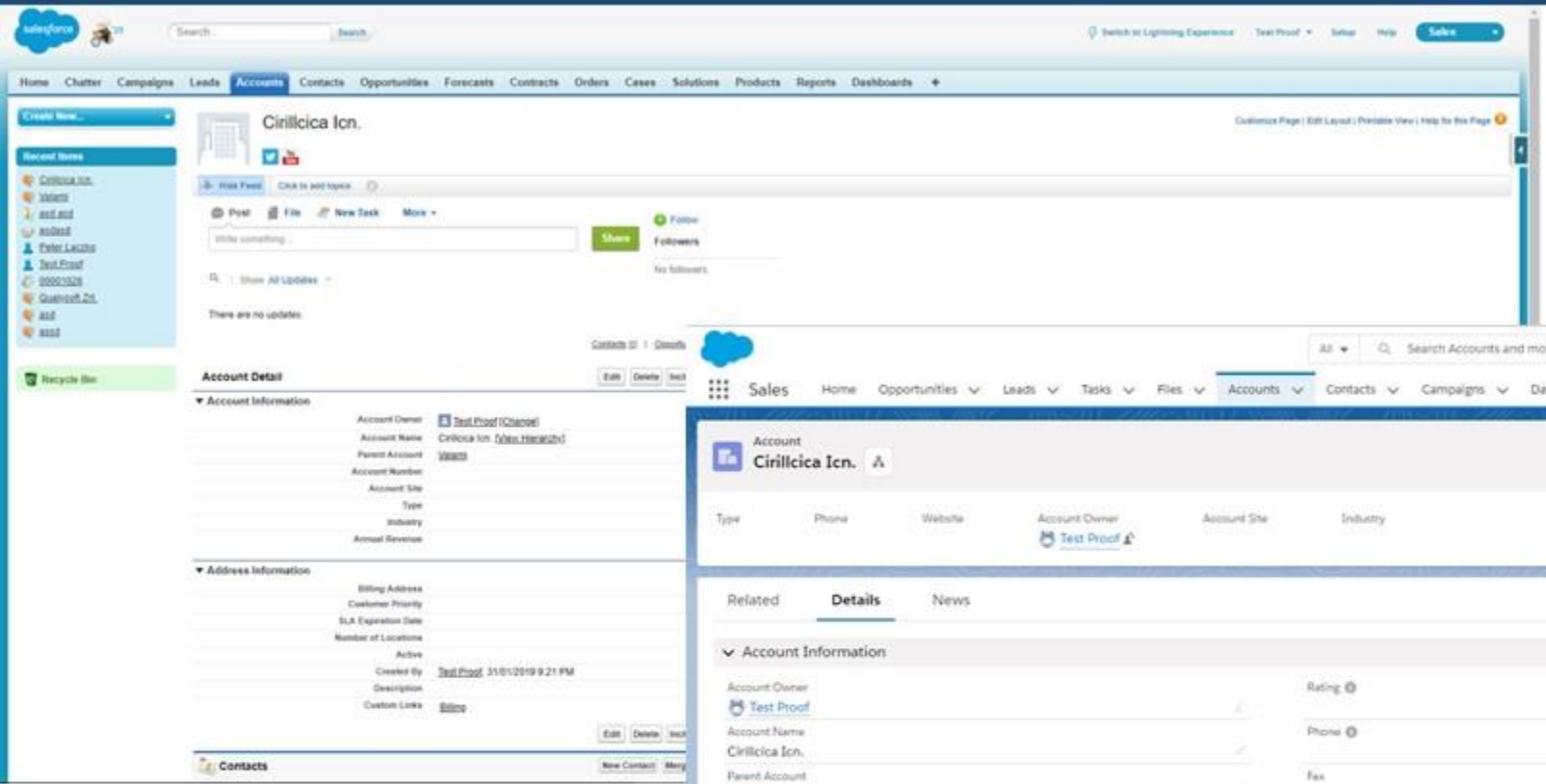


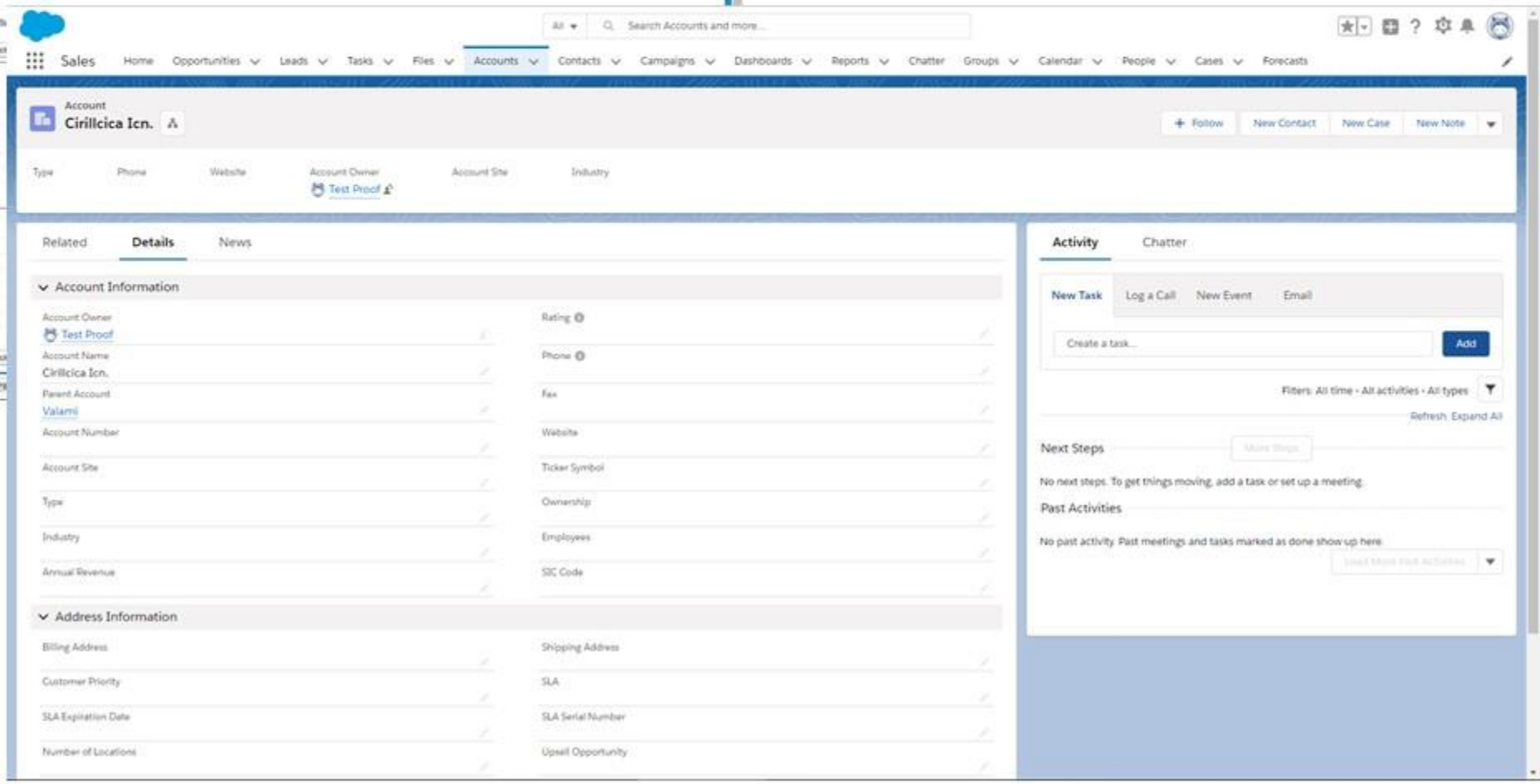
Challenge #2

Classic to Lightning – Migration ready?

TRICENTIS

Classic/Lightning UI

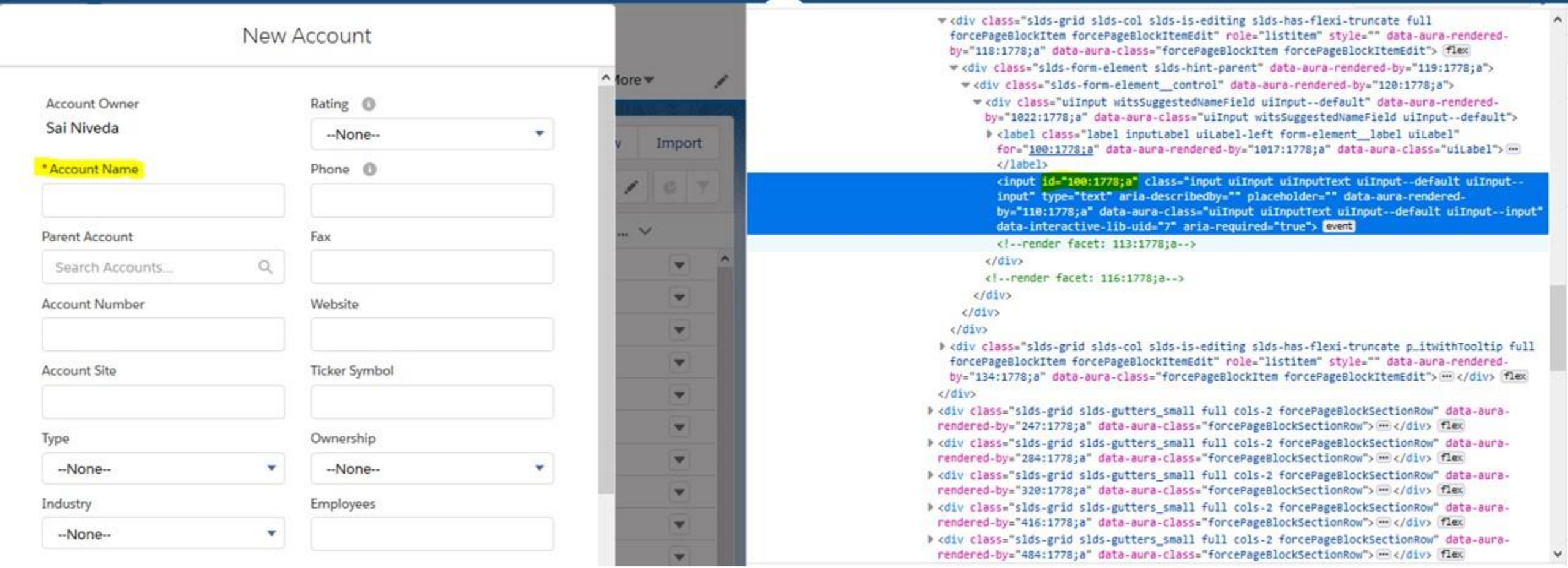




Challenge #3

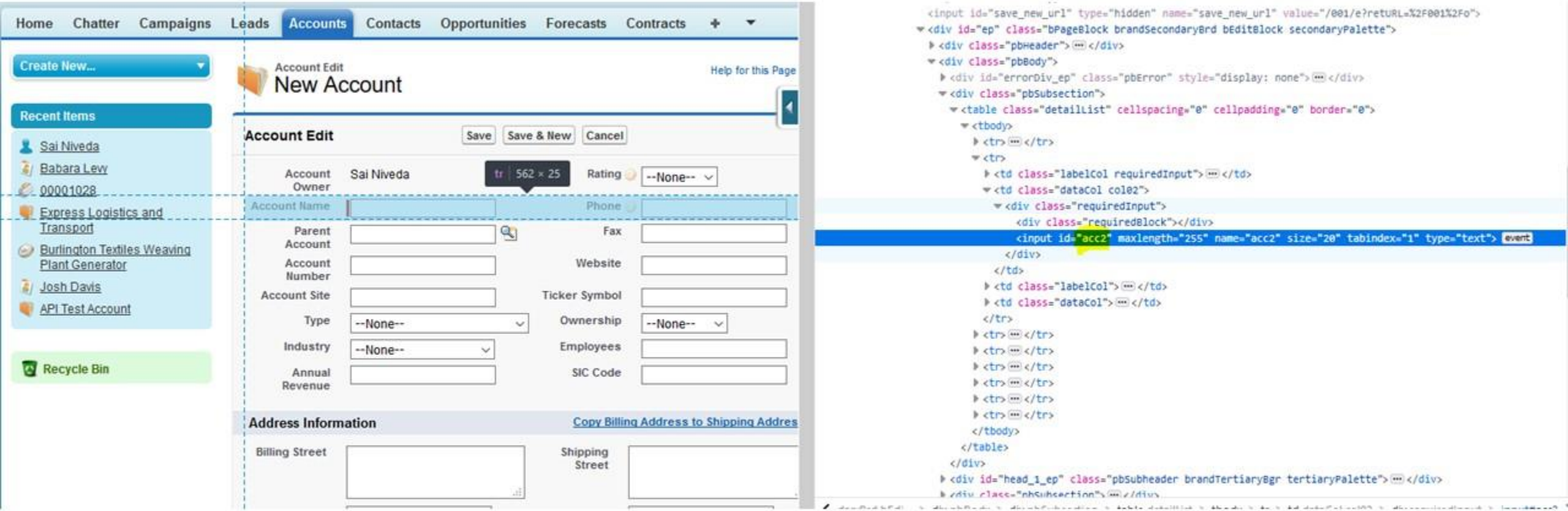
Stability of Technical Identifiers

Identifiers are Dynamic and will change



Utilizing a standard solid identifier such as 'ID' is common practice, however in the SFDC world these are dynamic and will change with SF releases, or based on dynamic data types, causing high maintenance within automation frameworks.

Identifiers are Dynamic and will change

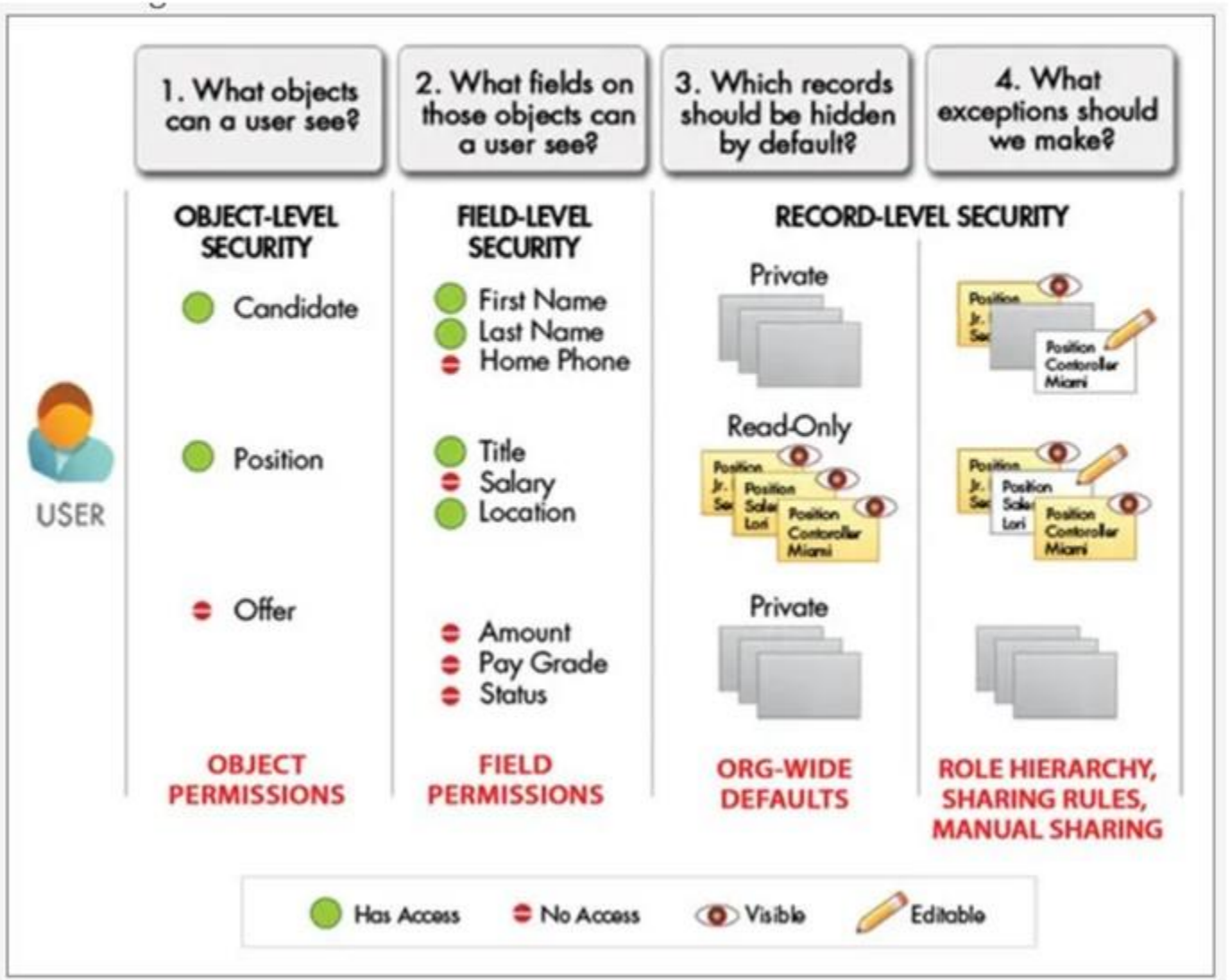


Same SFDC environment, but different ID from Classic to Lightning engines, we cannot create a shared control model in the traditional methods of automation, this causes overheads during migration or uplift activities.

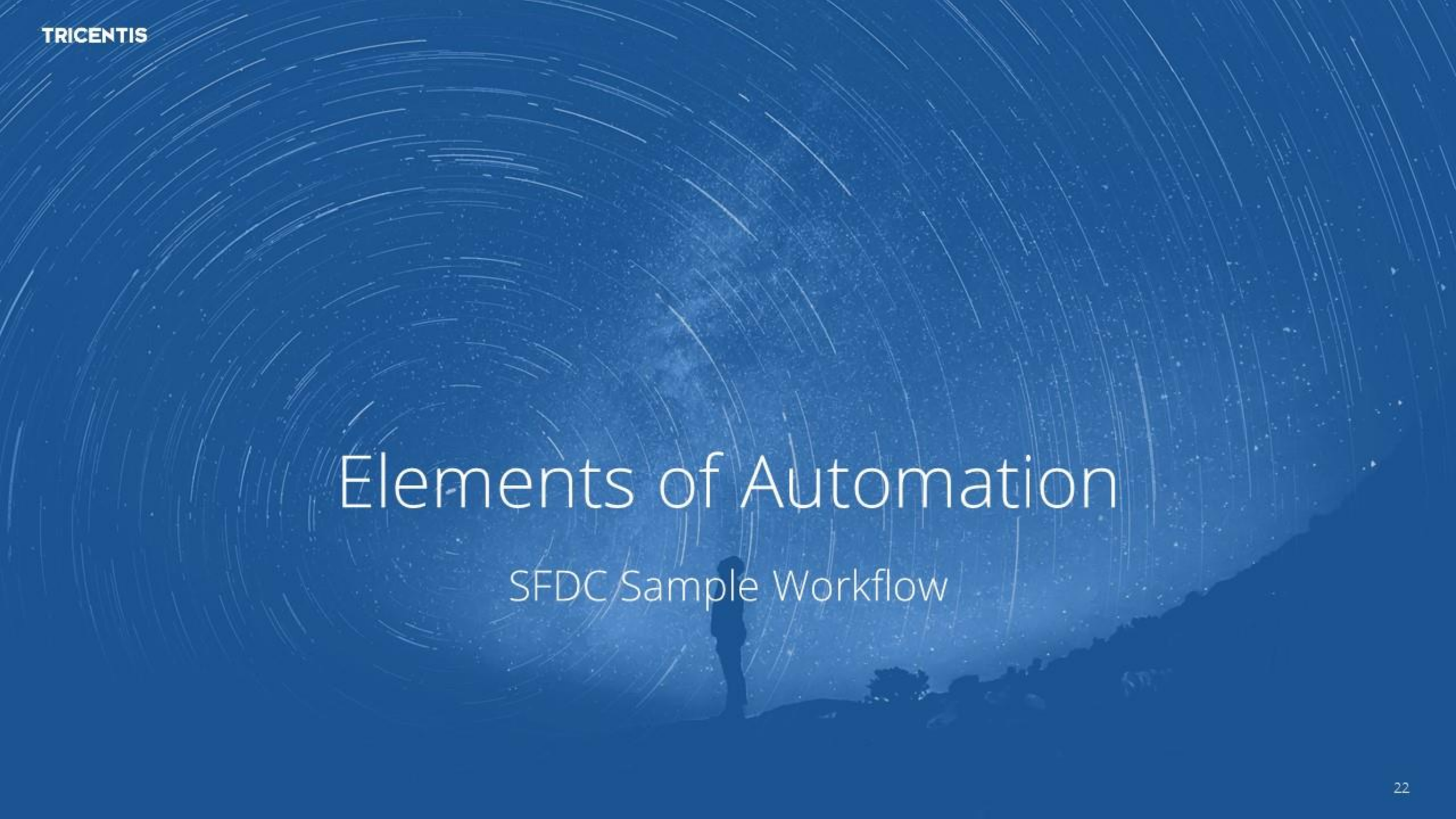
Challenge #4

Data Security & Access Control Testing

SFDC Data Security & Access Control



Source: Salesforce Trailhead



Elements of Automation

SFDC Sample Workflow

TRICENTIS

Elements of Test Automation

What
Should we interact with?

- Application
- Screens
- Elements (Identifiers: xpath, id, name, class etc)

How
Do we interact with it?

- Actions (Click, Enter etc.)
- Process/Sequence of interactions (Steps)
- Key verifications

Why
Are we doing this?

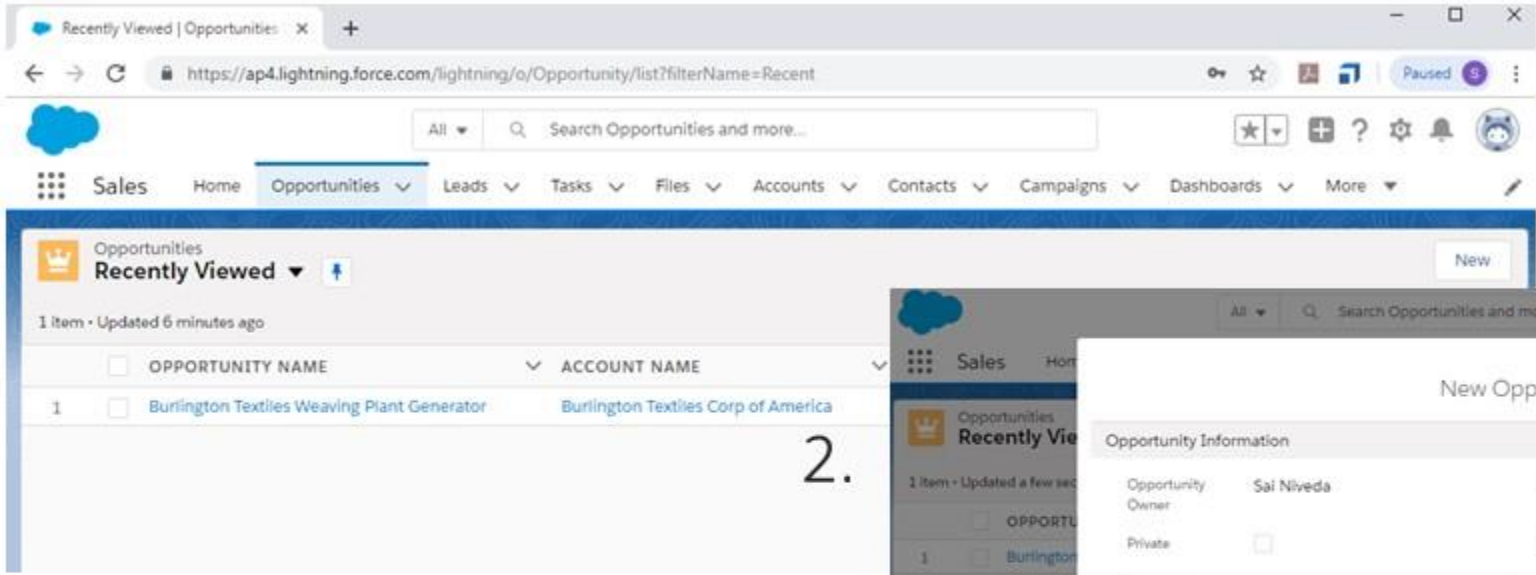
- Lower Business Risk
- Verify Quality....Fast

Sample Test Case: Create Opportunity

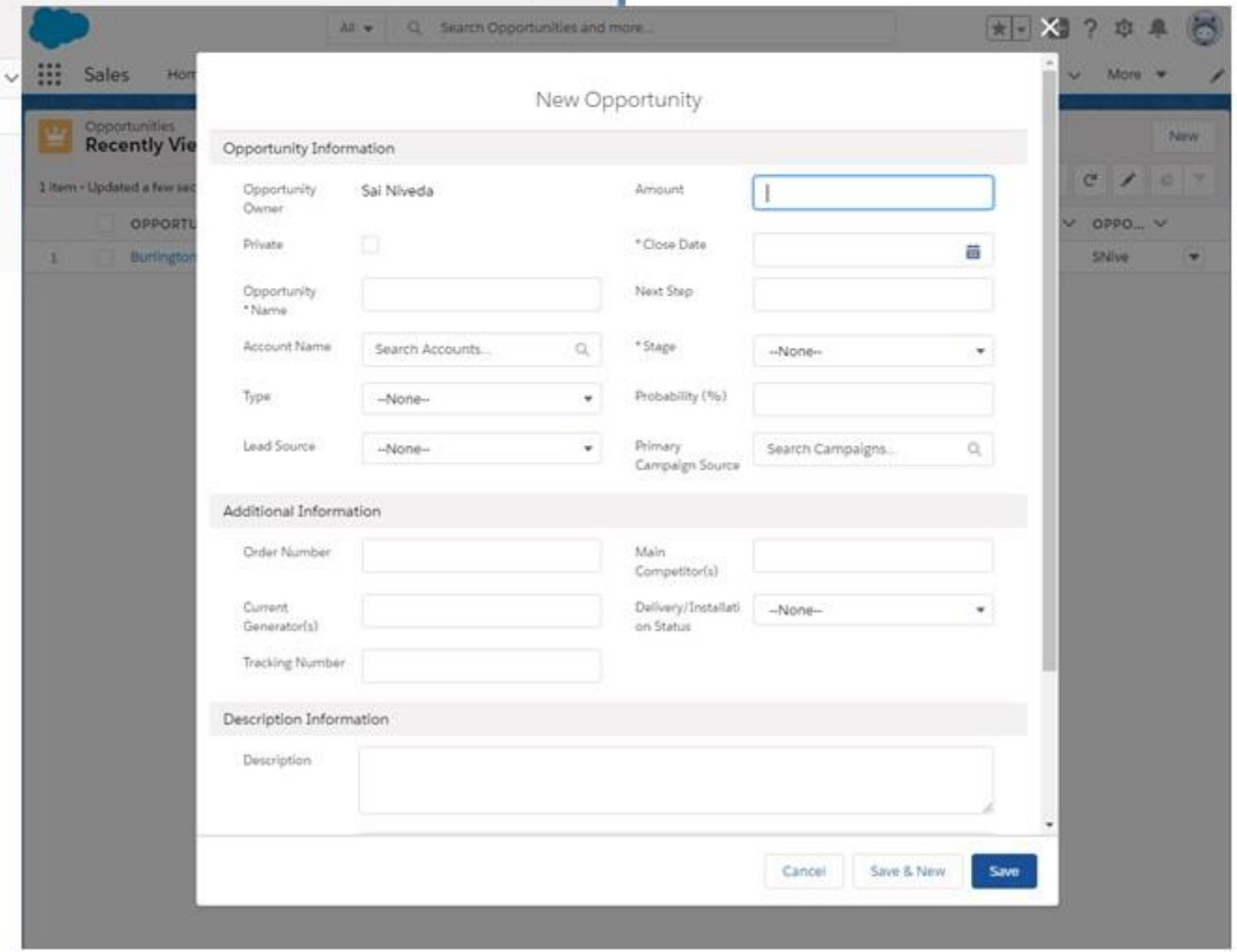
High Level Steps

1. Navigate to the Opportunities screen
2. Click on New
3. Enter necessary fields in Sections
4. Click on Save
5. Verify Details

1.

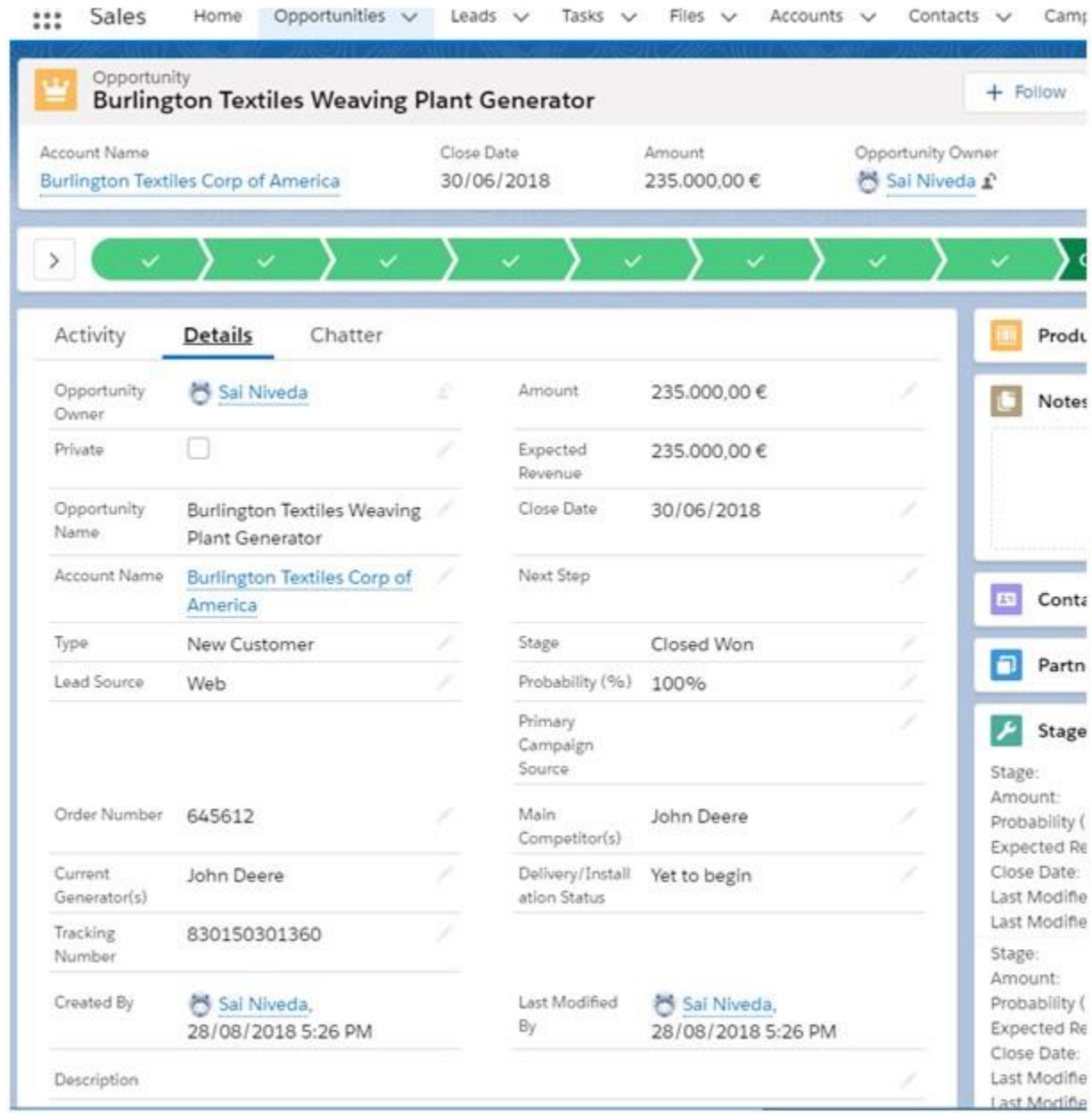

Recently Viewed | Opportunities
https://ap4.lightning.force.com/lightning/o/Opportunity/list?filterName=Recent
Paused
All
Search Opportunities and more...
Sales
Home
Opportunities
Leads
Tasks
Files
Accounts
Contacts
Campaigns
Dashboards
More
Opportunities
Recently Viewed
New
1 item • Updated 6 minutes ago
OPPORTUNITY NAME
ACCOUNT NAME
1
Burlington Textiles Weaving Plant Generator
Burlington Textiles Corp of America

2.


New Opportunity
Opportunity Information
Opportunity Owner
Sai Niveda
Amount
Private
*Close Date
Opportunity *Name
Next Step
Account Name
Search Accounts...
*Stage
--None--
Type
--None--
Probability (%)
Lead Source
--None--
Primary Campaign Source
Search Campaigns...
Additional Information
Order Number
Main Competitor(s)
Current Generator(s)
Delivery/Installation Status
--None--
Tracking Number
Description Information
Description
Cancel
Save & New
Save

TRICENTIS

3.

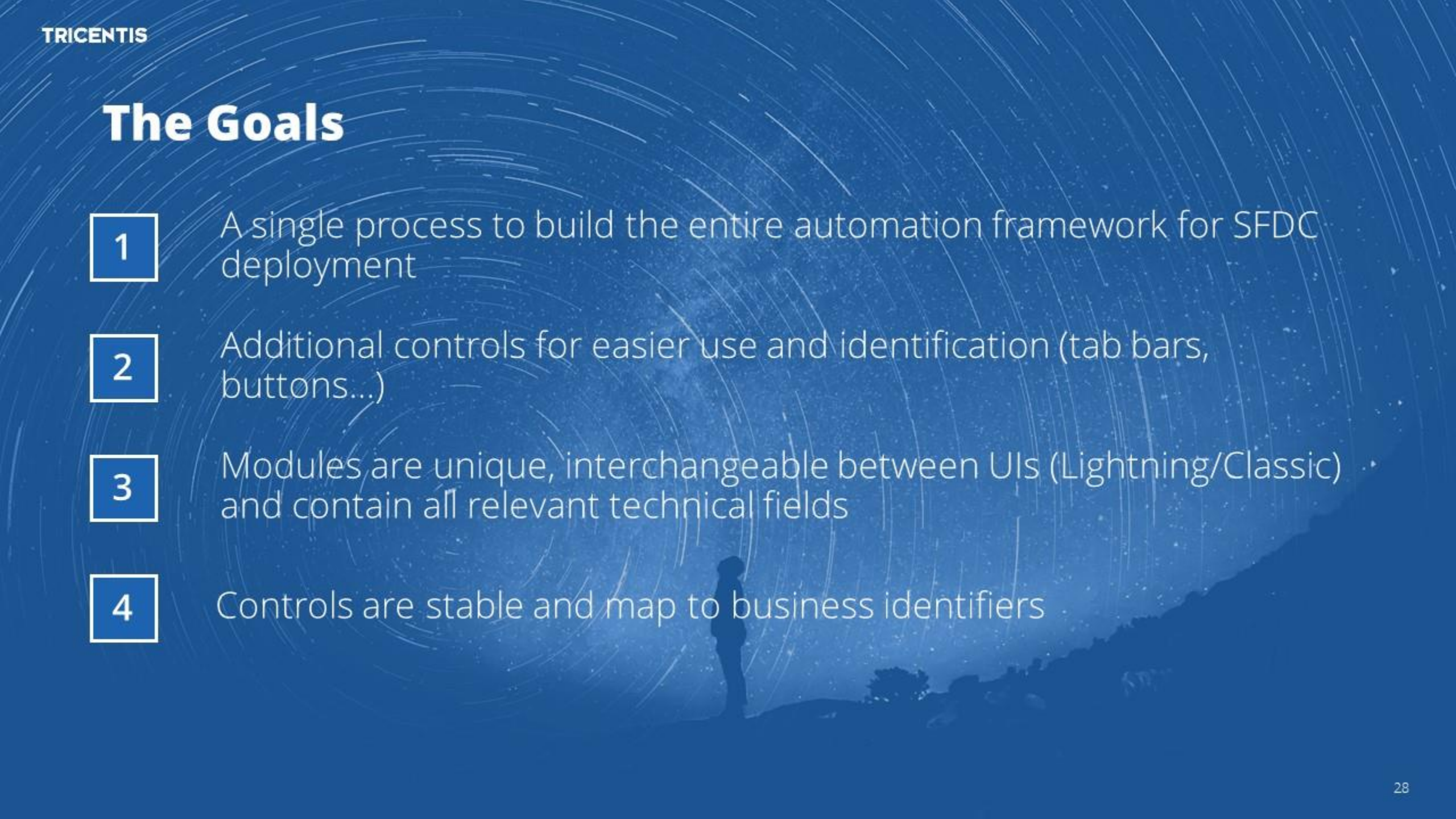

Sales
Home
Opportunities
Leads
Tasks
Files
Accounts
Contacts
Opportunity
Burlington Textiles Weaving Plant Generator
Follow
Account Name
Burlington Textiles Corp of America
Close Date
30/06/2018
Amount
235.000,00 €
Opportunity Owner
Sai Niveda
Activity
Details
Chatter
Opportunity Owner
Sai Niveda
Private
Opportunity Name
Burlington Textiles Weaving Plant Generator
Account Name
Burlington Textiles Corp of America
Type
New Customer
Lead Source
Web
Order Number
645612
Current Generator(s)
John Deere
Tracking Number
830150301360
Created By
Sai Niveda, 28/08/2018 5:26 PM
Description
Amount
235.000,00 €
Expected Revenue
235.000,00 €
Close Date
30/06/2018
Next Step
Stage
Closed Won
Probability (%)
100%
Primary Campaign Source
Main Competitor(s)
John Deere
Delivery/Installation Status
Yet to begin
Last Modified By
Sai Niveda, 28/08/2018 5:26 PM
Stage

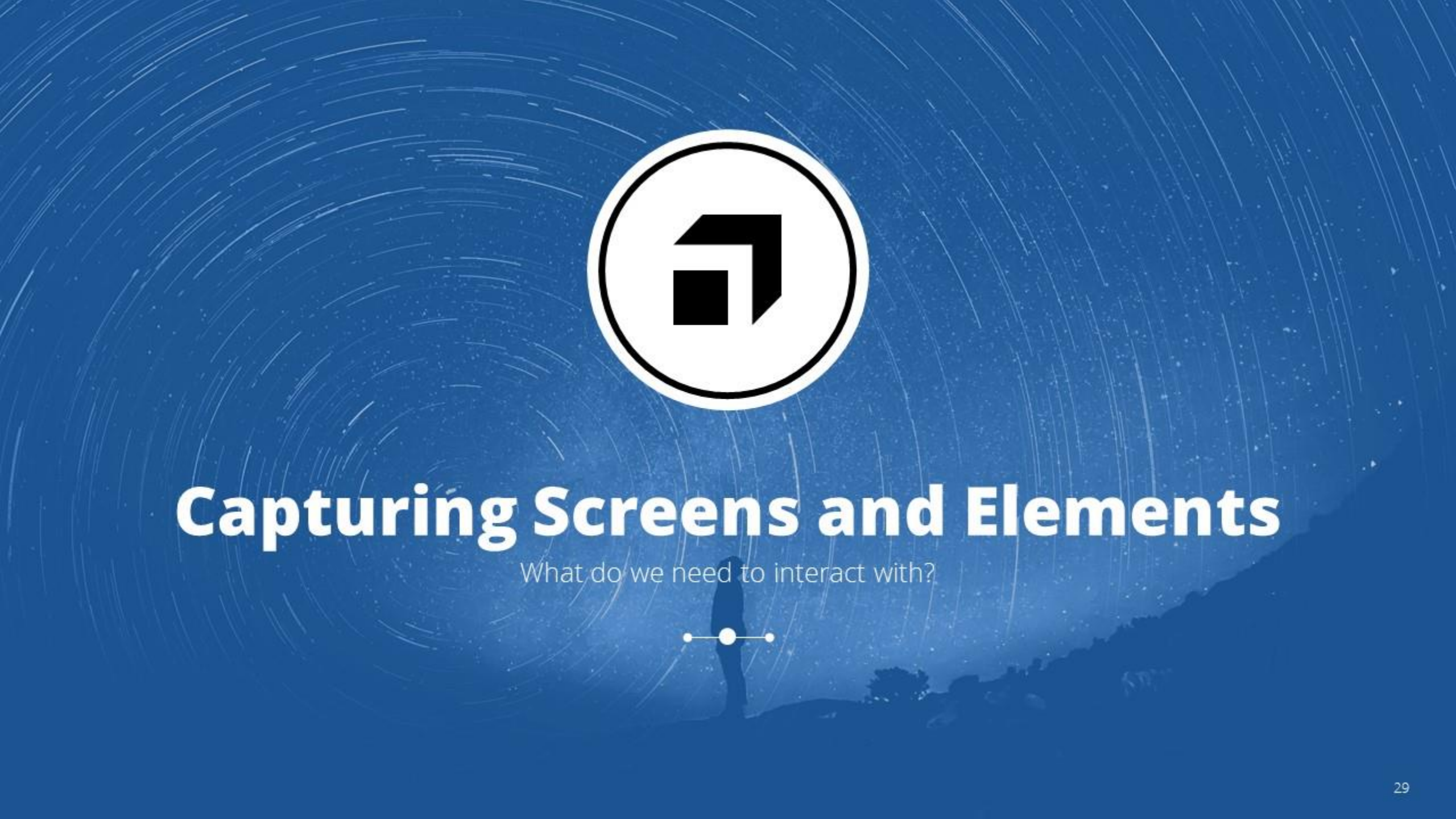
Addressing the Challenges

Get a Head Start: Meet Disruption with Disruption

The Goals

1. A single process to build the entire automation framework for SFDC deployment
2. Additional controls for easier use and identification (tab bars, buttons…)
3. Modules are unique, interchangeable between UIs (Lightning/Classic) and contain all relevant technical fields
4. Controls are stable and map to business identifiers



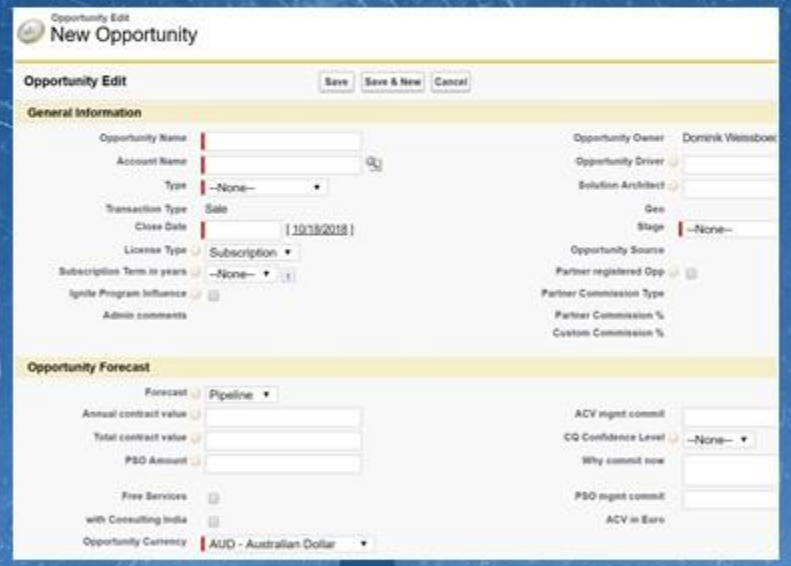


Capturing Screens and Elements

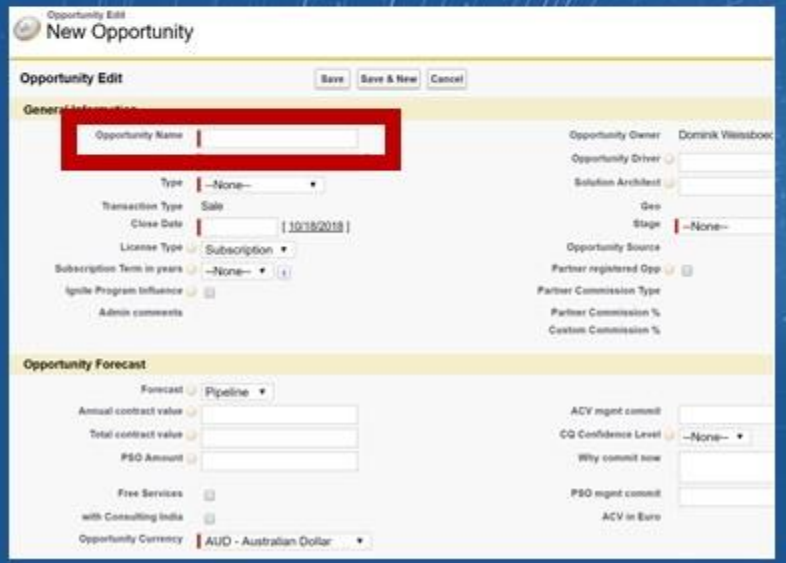
What do we need to interact with?

60" – Entire SFDC

60" – One Screen



60" – One Control



Tosca Commander: Salesforce Webinar (D:\Tosca_Projects\TOSCA_Workspaces\Salesforce Webinar\Salesforce Webinar.tws)

PROJECT HOME VIEW TOOLS MODULES API TESTING

Paste Cut Copy Duplicate — Clipboard
Delete Modify Attach File — Edit
Create Folder Create Object — Create
Capture screenshot Jump to Parent Scan Search all usages Merge Modules Find Duplicate Modules — Modules

TestCases | Modules | Requirements | TestCaseDesign | Execution | Issues | Configurations | TestPlanning

Modules

Details | Test configuration

Name	Image	TechnicalID	TypeInfoDescription	ValueRange
Modules				

Properties

Name	Value
Modules	
NodePath	/Modules
HasMissingReferences	False
UniqueId	39ed7a30-98c1-...
SynchronizationPolicy	CustomizableD...
Description	
Revision	0
OwningGroupName	All Users (inheri...
ViewingGroupName	<NO VIEWING G...
IsCheckedOutByMe	False

Ready

User: Admin

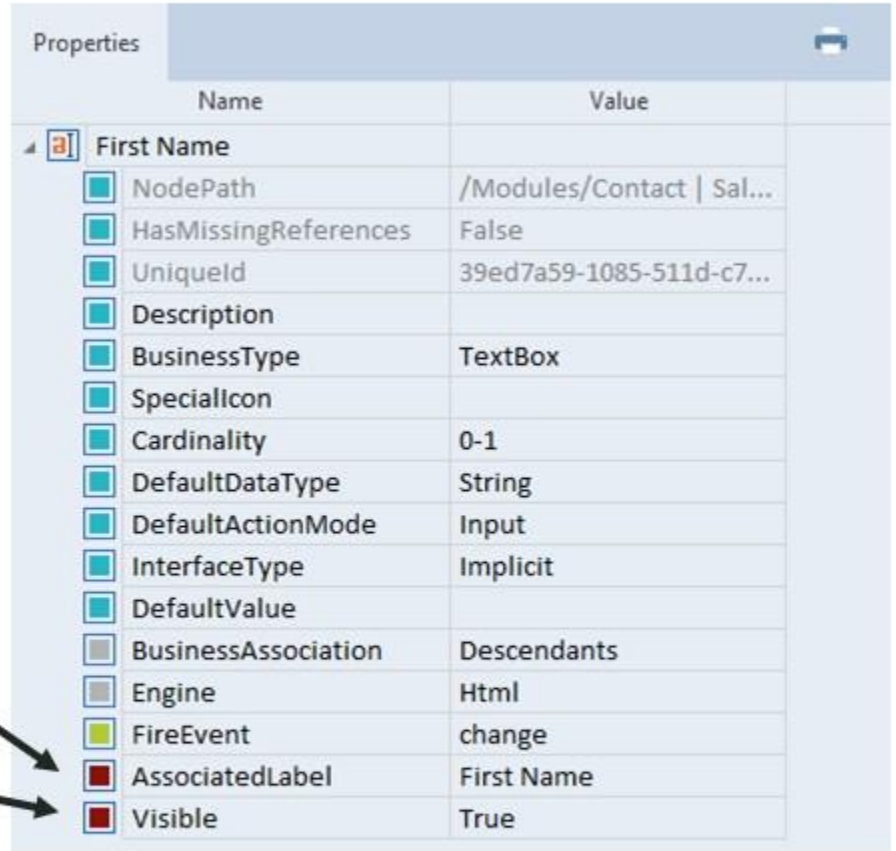
Unique identifiers – mitigating dynamic IDs

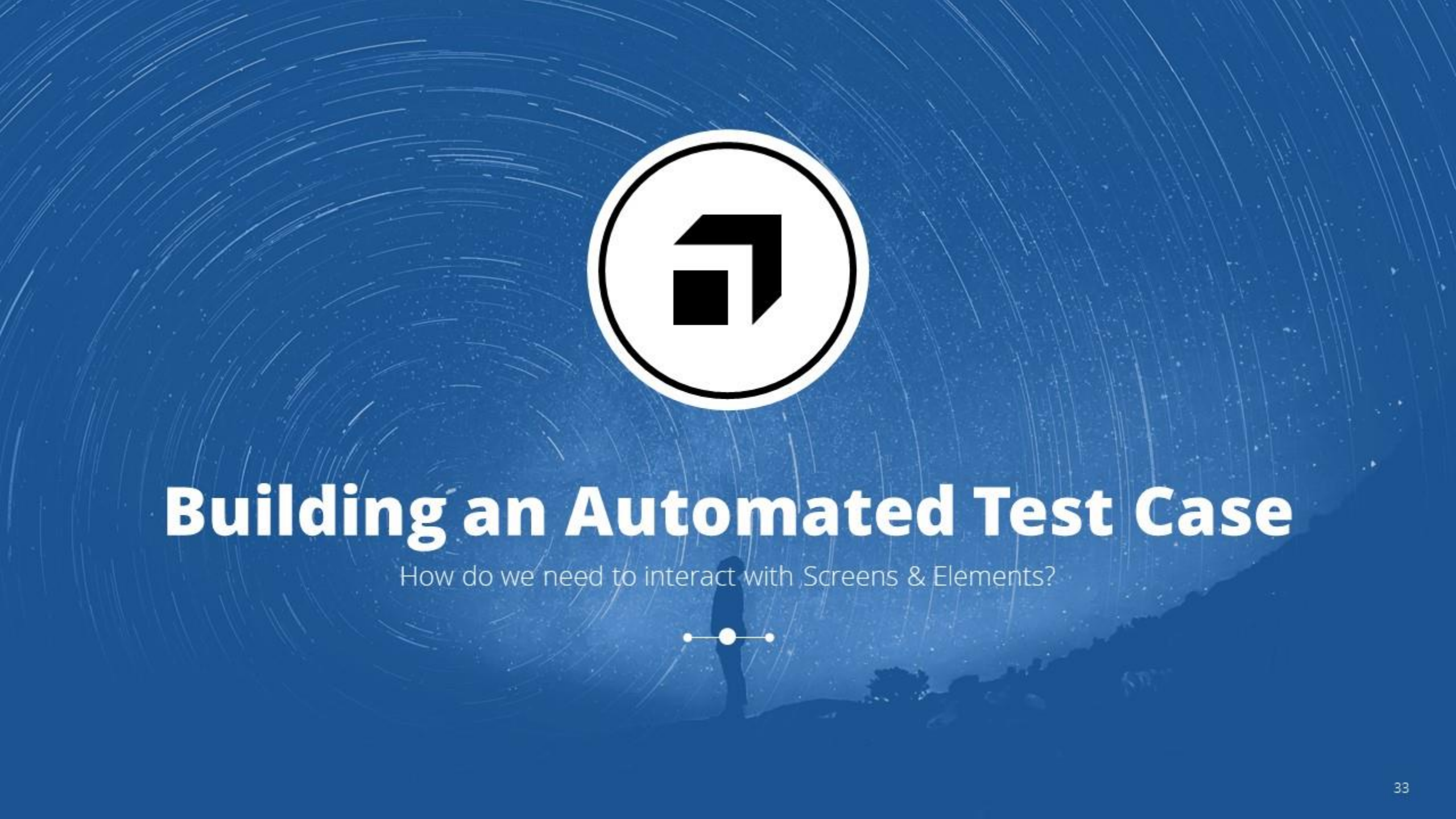
Associated Label

- Created from Default name
- Added context if necessary
- Interchangeable between UIs (Classic & Lightning)

Visible

- Always true by default
- Needed because of random hidden controls





Building an Automated Test Case

How do we need to interact with Screens & Elements?

Opportunity | Salesforce

Opportunity Details | Salesforce

Opportunity New and Edit | Salesforce

Opportunity Related Lists | Salesforce

Opportunity Buttons | Salesforce

Opportunity Quick Actions | Salesforce

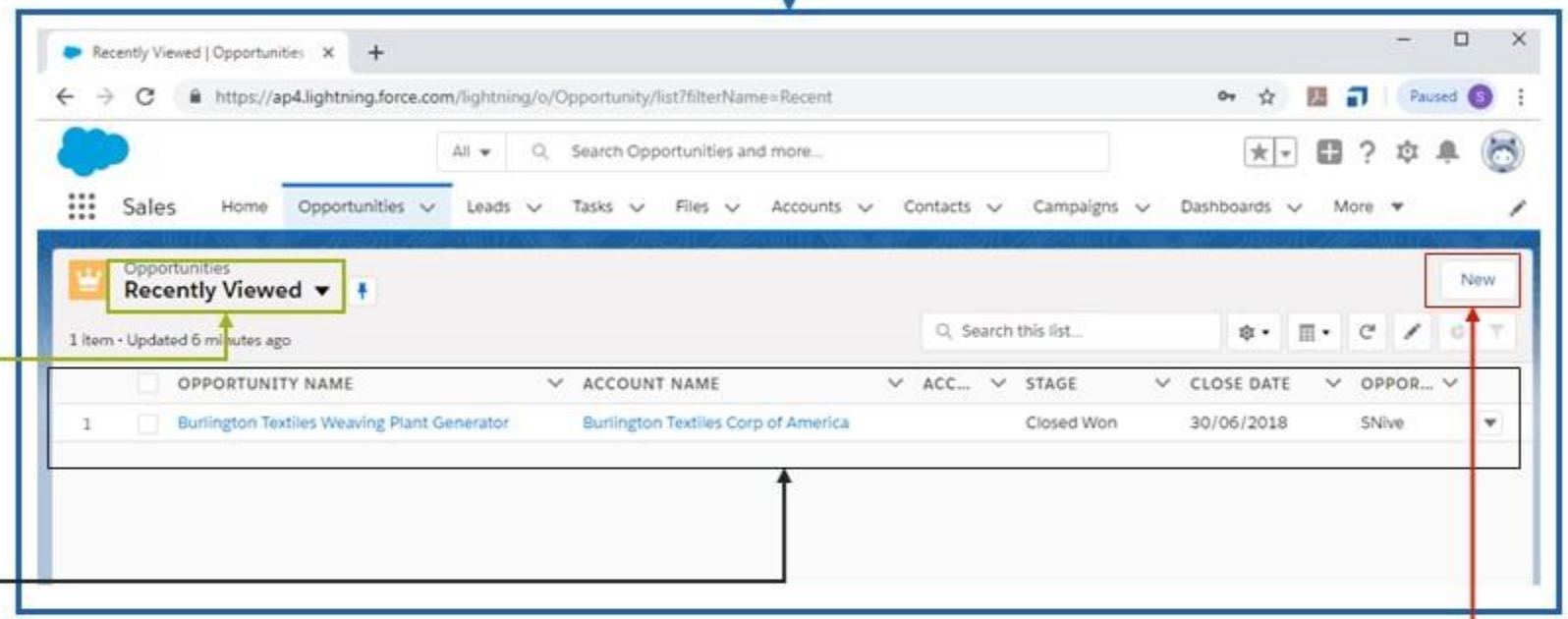
Opportunity Lists | Salesforce

View:

- All Opportunities
- Closing This Month
- New Last Week
- Closing Next Month
- Private
- New This Week
- Won
- Recently Viewed Opportunities
- My Opportunities
- Opportunity Pipeline

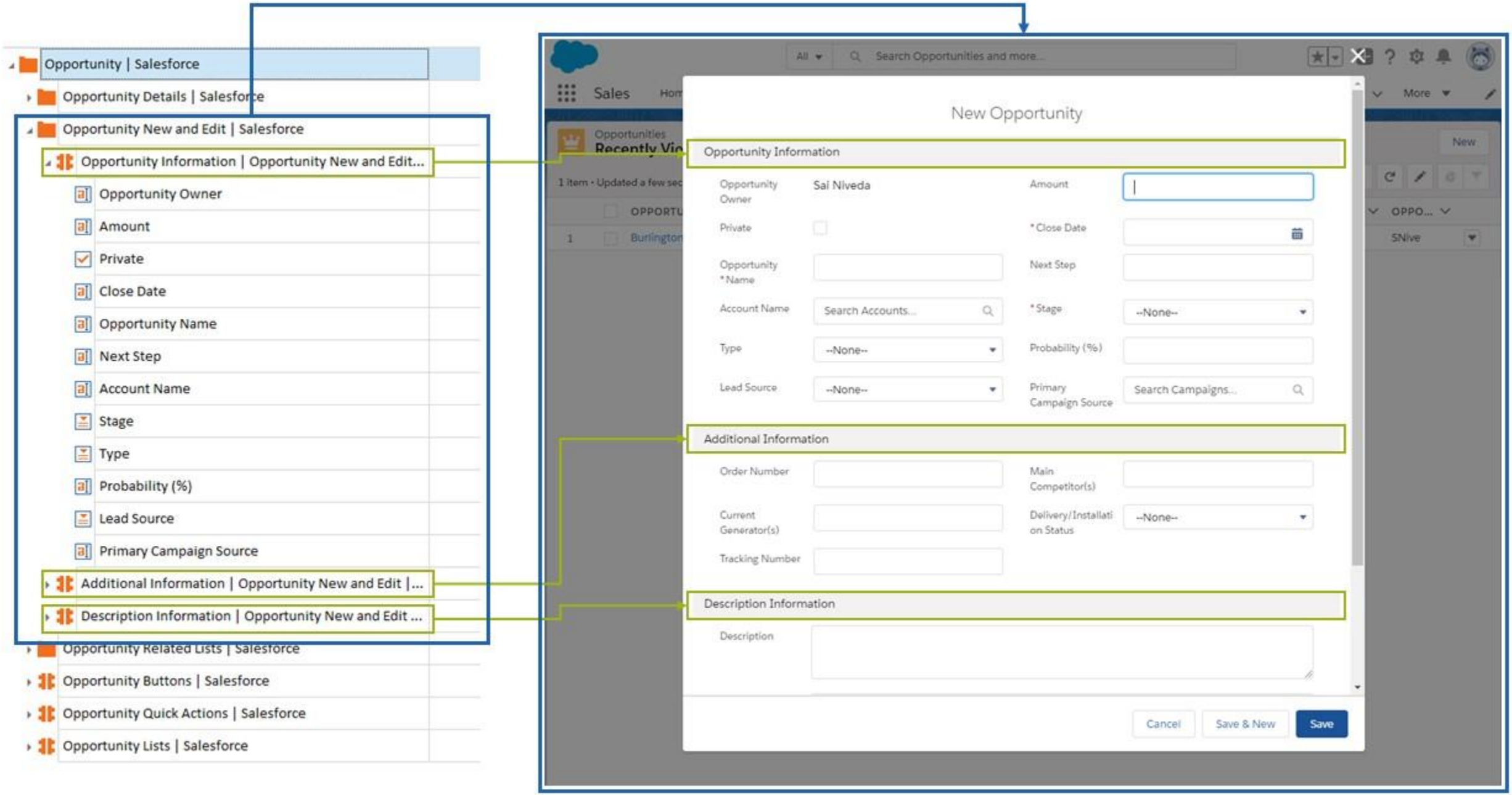
- Open in Quip
- New

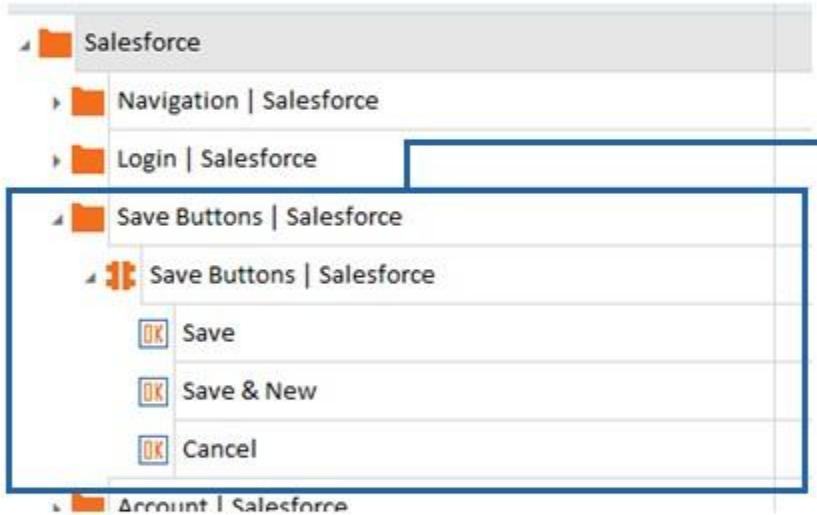
Once you have the elements, navigate to the tab (in this case opportunities) you see the Opportunities Home Screen with lists and buttons

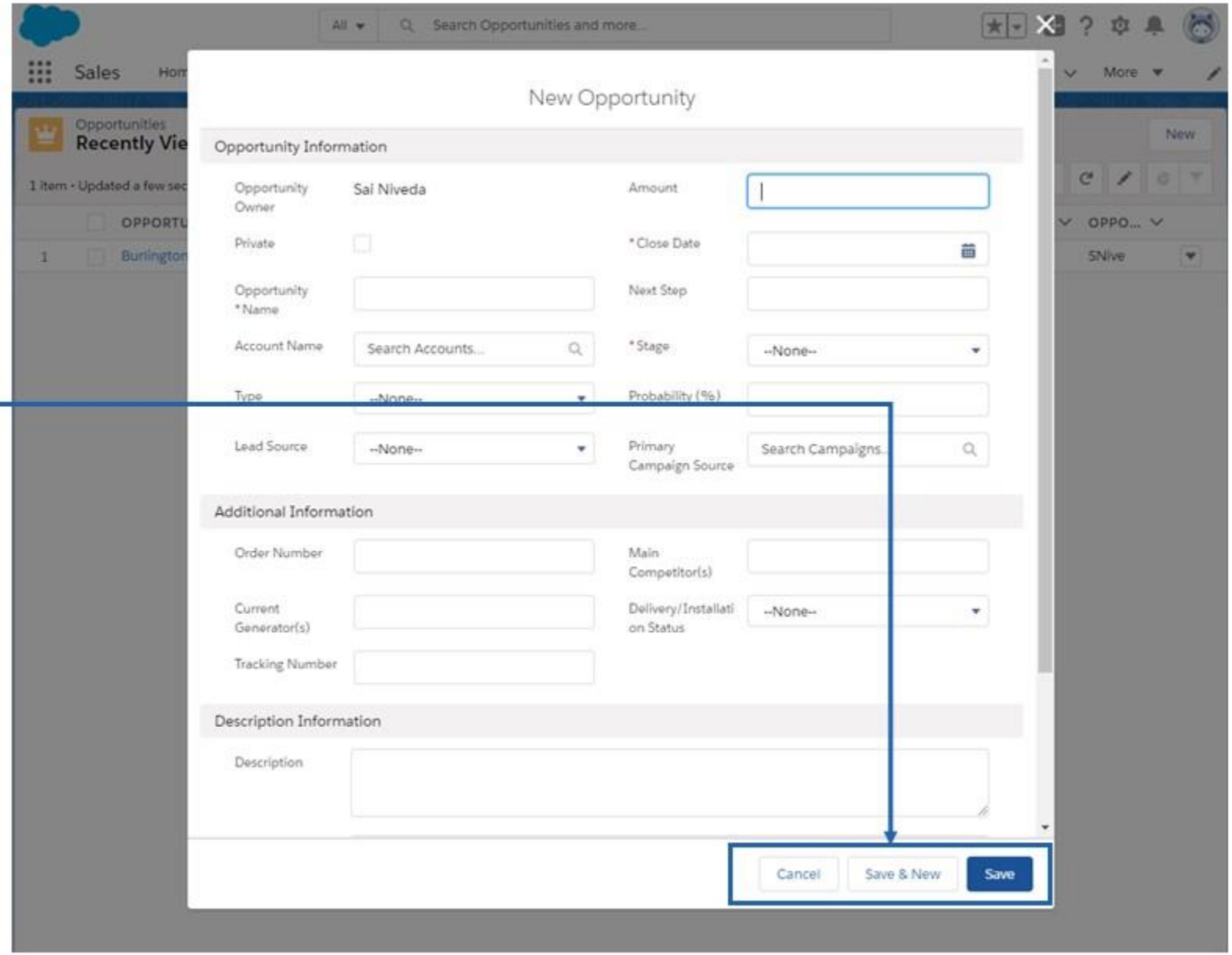


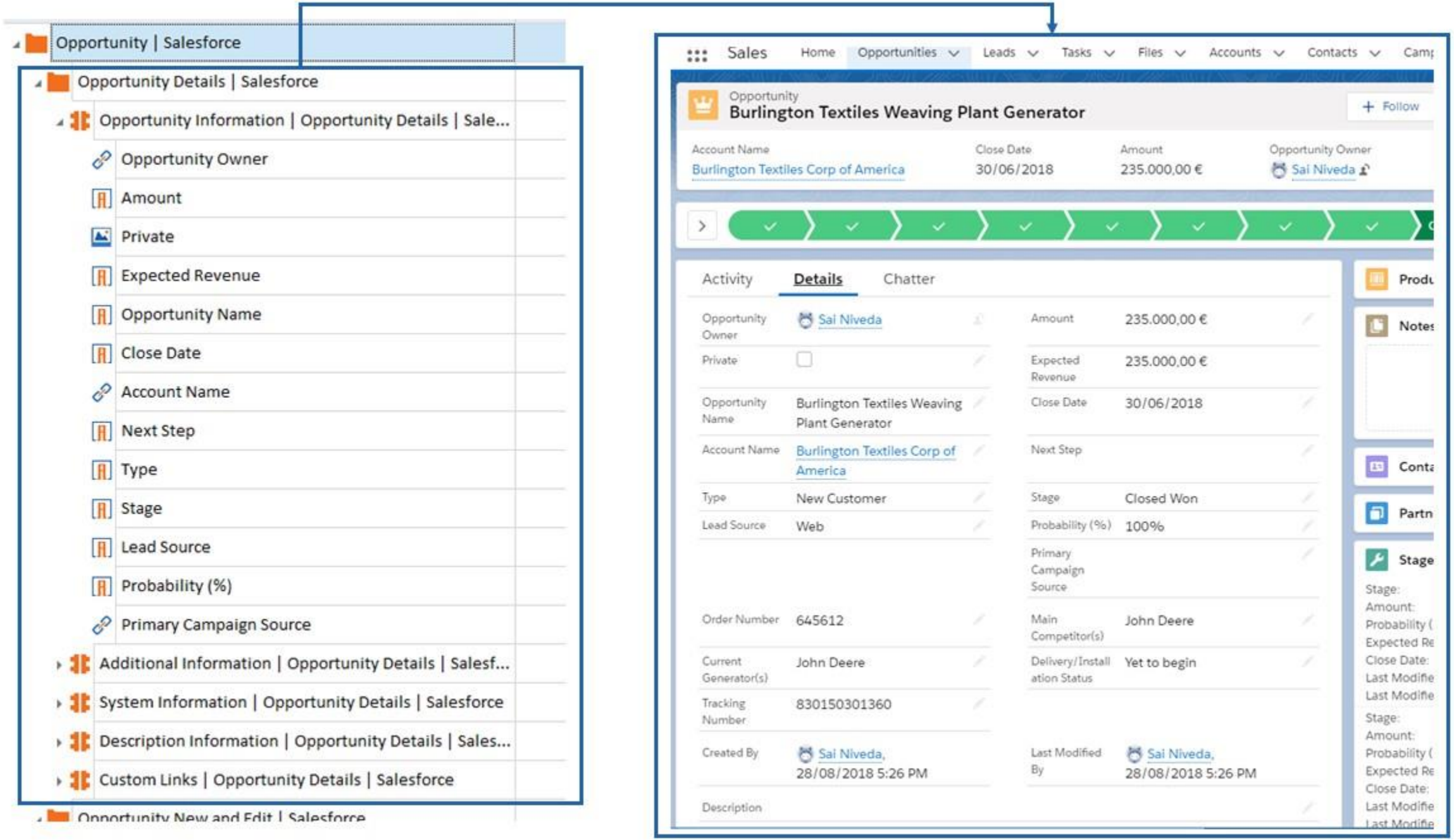
Tables corresponding to the chosen view

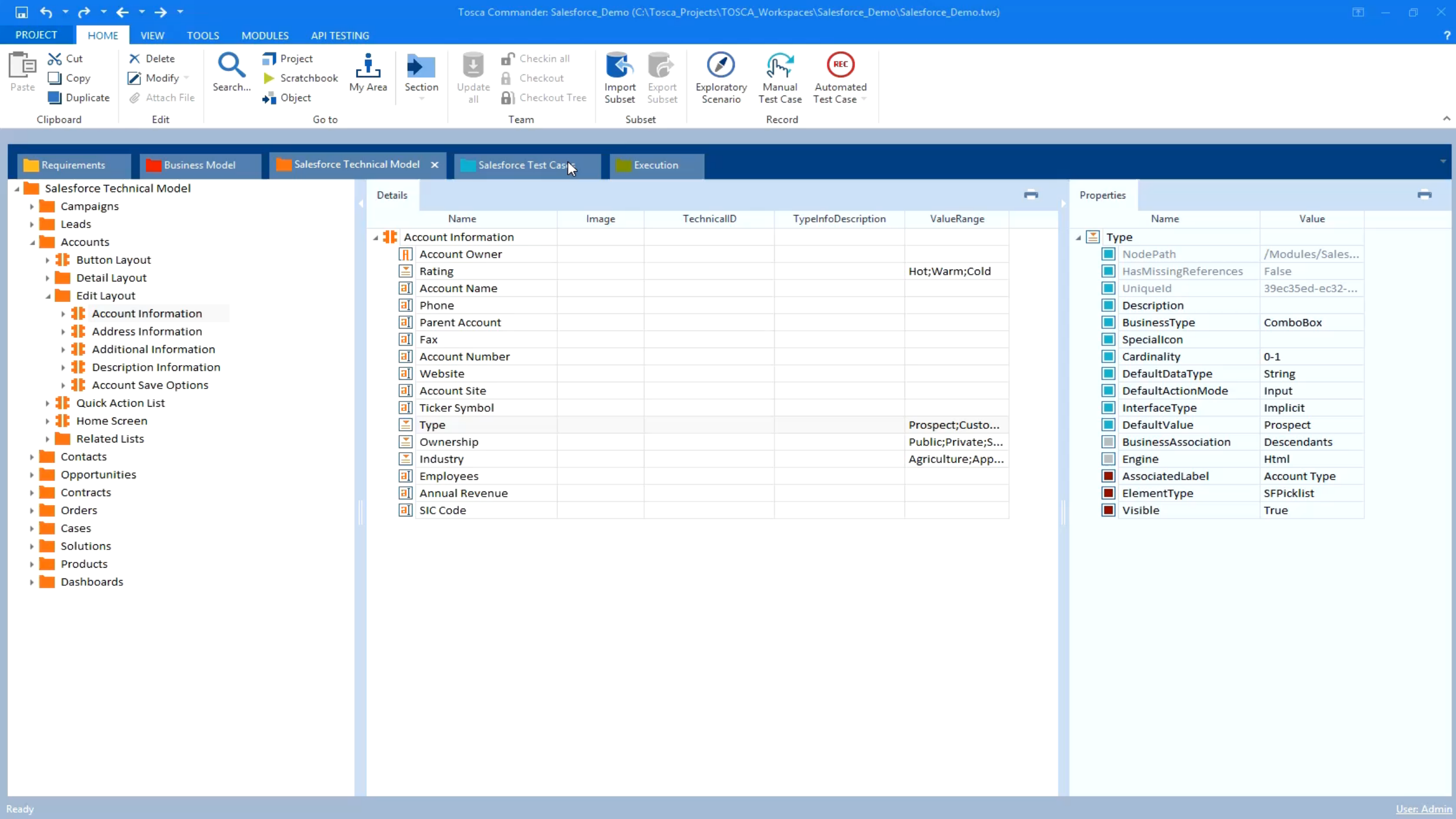
Buttons

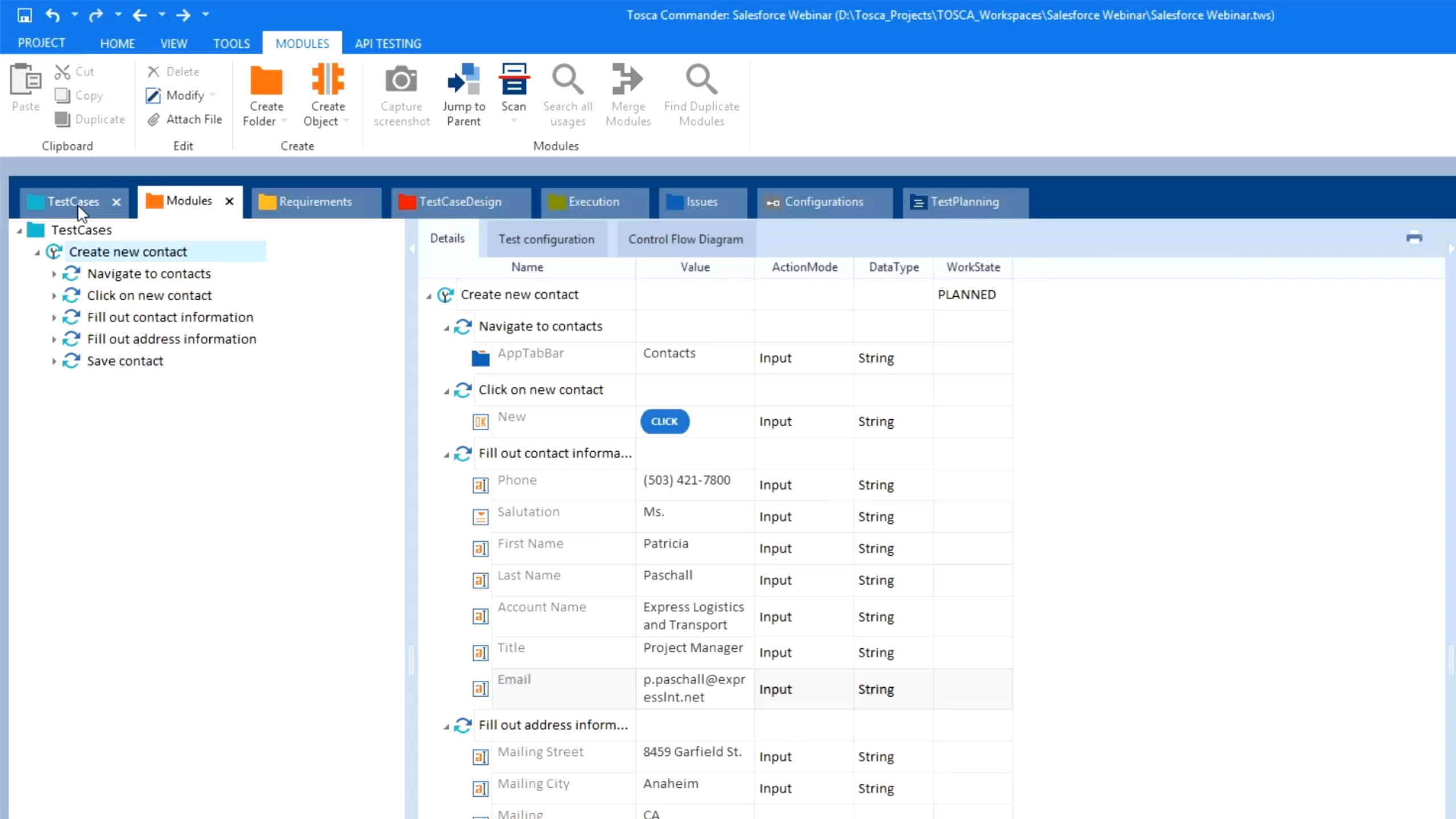

Opportunity | Salesforce
Opportunity Details | Salesforce
Opportunity New and Edit | Salesforce
Opportunity Information | Opportunity New and Edit...
Opportunity Owner
Amount
Private
Close Date
Opportunity Name
Next Step
Account Name
Stage
Type
Probability (%)
Lead Source
Primary Campaign Source
Additional Information | Opportunity New and Edit |...
Description Information | Opportunity New and Edit ...
Opportunity Related Lists | Salesforce
Opportunity Buttons | Salesforce
Opportunity Quick Actions | Salesforce
Opportunity Lists | Salesforce
Sales
New Opportunity
Opportunity Information
Opportunity Owner
Sai Niveda
Amount
Private
*Close Date
Opportunity *Name
Next Step
Account Name
Search Accounts...
*Stage
--None--
Type
--None--
Probability (%)
Lead Source
--None--
Primary Campaign Source
Search Campaigns...
Additional Information
Order Number
Main Competitor(s)
Current Generator(s)
Delivery/Installation Status
--None--
Tracking Number
Description Information
Description
Cancel
Save & New
Save


Salesforce
Navigation | Salesforce
Login | Salesforce
Save Buttons | Salesforce
Save Buttons | Salesforce
Save
Save & New
Cancel
Account | Salesforce


Sales
Search Opportunities and more...
New Opportunity
Opportunity Information
Opportunity Owner
Sai Niveda
Amount
Private
*Close Date
Opportunity *Name
Next Step
Account Name
Search Accounts...
*Stage
--None--
Type
--None--
Probability (%)
Lead Source
--None--
Primary Campaign Source
Search Campaigns...
Additional Information
Order Number
Main Competitor(s)
Current Generator(s)
Delivery/Installation Status
--None--
Tracking Number
Description Information
Description
Cancel
Save & New
Save


Opportunity | Salesforce
Opportunity Details | Salesforce
Opportunity Information | Opportunity Details | Sale...
Opportunity Owner
Amount
Private
Expected Revenue
Opportunity Name
Close Date
Account Name
Next Step
Type
Stage
Lead Source
Probability (%)
Primary Campaign Source
Additional Information | Opportunity Details | Salesf...
System Information | Opportunity Details | Salesforce
Description Information | Opportunity Details | Sales...
Custom Links | Opportunity Details | Salesforce
Opportunity New and Edit | Salesforce
Sales
Home
Opportunities
Leads
Tasks
Files
Accounts
Contacts
Opportunity
Burlington Textiles Weaving Plant Generator
Follow
Account Name
Burlington Textiles Corp of America
Close Date
30/06/2018
Amount
235.000,00 €
Opportunity Owner
Sai Niveda
Activity
Details
Chatter
Opportunity Owner
Sai Niveda
Private
Opportunity Name
Burlington Textiles Weaving Plant Generator
Account Name
Burlington Textiles Corp of America
Type
New Customer
Lead Source
Web
Order Number
645612
Current Generator(s)
John Deere
Tracking Number
830150301360
Created By
Sai Niveda,
28/08/2018 5:26 PM
Description
Amount
235.000,00 €
Expected Revenue
235.000,00 €
Close Date
30/06/2018
Next Step
Stage
Closed Won
Probability (%)
100%
Primary Campaign Source
Main Competitor(s)
John Deere
Delivery/Installation Status
Yet to begin
Last Modified By
Sai Niveda,
28/08/2018 5:26 PM
Notes
Partn
Stage


Tosca Commander: Salesforce_Demo (C:\Tosca_Projects\TOSCA_Workspaces\Salesforce_Demo\Salesforce_Demo.tws)
PROJECT
HOME
VIEW
TOOLS
MODULES
API TESTING
Paste
Cut
Copy
Duplicate
Clipboard
Delete
Modify
Attach File
Edit
Search...
Project
Scratchbook
Object
My Area
Section
Go to
Update all
Checkin all
Checkout
Checkout Tree
Team
Import Subset
Export Subset
Subset
Exploratory Scenario
Manual Test Case
Automated Test Case
Record
Requirements
Business Model
Salesforce Technical Model
Salesforce Test Cases
Execution
Salesforce Technical Model
Campaigns
Leads
Accounts
Button Layout
Detail Layout
Edit Layout
Account Information
Address Information
Additional Information
Description Information
Account Save Options
Quick Action List
Home Screen
Related Lists
Contacts
Opportunities
Contracts
Orders
Cases
Solutions
Products
Dashboards
Details
Name
Image
TechnicalID
TypeInfoDescription
ValueRange
Account Information
Account Owner
Rating
Hot;Warm;Cold
Account Name
Phone
Parent Account
Fax
Account Number
Website
Account Site
Ticker Symbol
Type
Prospect;Custo...
Ownership
Public;Private;S...
Industry
Agriculture;App...
Employees
Annual Revenue
SIC Code
Properties
Name
Value
Type
NodePath
/Modules/Sales...
HasMissingReferences
False
UniqueId
39ec35ed-ec32-...
Description
BusinessType
ComboBox
SpecialIcon
Cardinality
0-1
DefaultDataType
String
DefaultActionMode
Input
InterfaceType
Implicit
DefaultValue
Prospect
BusinessAssociation
Descendants
Engine
Html
AssociatedLabel
Account Type
ElementType
SFPicklist
Visible
True
Ready
User: Admin


Tosca Commander: Salesforce Webinar (D:\Tosca_Projects\TOSCA_Workspaces\Salesforce Webinar\Salesforce Webinar.tws)
PROJECT
HOME
VIEW
TOOLS
MODULES
API TESTING
Paste
Cut
Copy
Duplicate
Clipboard
Delete
Modify
Attach File
Edit
Create Folder
Create Object
Create
Capture screenshot
Jump to Parent
Scan
Search all usages
Merge Modules
Find Duplicate Modules
Modules
TestCases
Modules
Requirements
TestCaseDesign
Execution
Issues
Configurations
TestPlanning
TestCases
Create new contact
Navigate to contacts
Click on new contact
Fill out contact information
Fill out address information
Save contact
Details
Test configuration
Control Flow Diagram
Name
Value
ActionMode
DataType
WorkState
Create new contact
PLANNED
Navigate to contacts
AppTabBar
Contacts
Input
String
Click on new contact
New
CLICK
Input
String
Fill out contact informa...
Phone
(503) 421-7800
Input
String
Salutation
Ms.
Input
String
First Name
Patricia
Input
String
Last Name
Paschall
Input
String
Account Name
Express Logistics and Transport
Input
String
Title
Project Manager
Input
String
Email
p.paschall@expressInt.net
Input
String
Fill out address inform...
Mailing Street
8459 Garfield St.
Input
String
Mailing City
Anaheim
Input
String
Mailing
CA

"...Do it fast, simple, and right the first time (and did we mention fast?)."

- Marc Benioff– Founder, CEO Salesforce.com

TRICENTIS

The continuous testing market leader with agile test management and advanced test automation optimized to support over **150+ technologies**

RESULTS

>90% Test Automation

5X Test Speed Increase

>80% Risk Coverage

PARTNERS

accenture, Capgemini, Cognizant, CPRIME, Infosys, SQS, Præcipio, wipro

TECH ALLIANCES

Atlassian, Microsoft, SAP

NOW

2018 — **QASymphony** Merger — *Test Management*

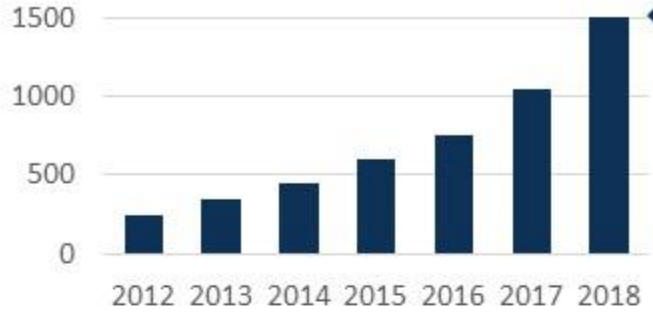
2017 — **Q-up** Acquisition — *Test Data*

2017 — **Flood** Acquisition — *Load Testing*

2016 — **Insight Venture Partners** Investment

2007 — **Founded**

CUSTOMERS



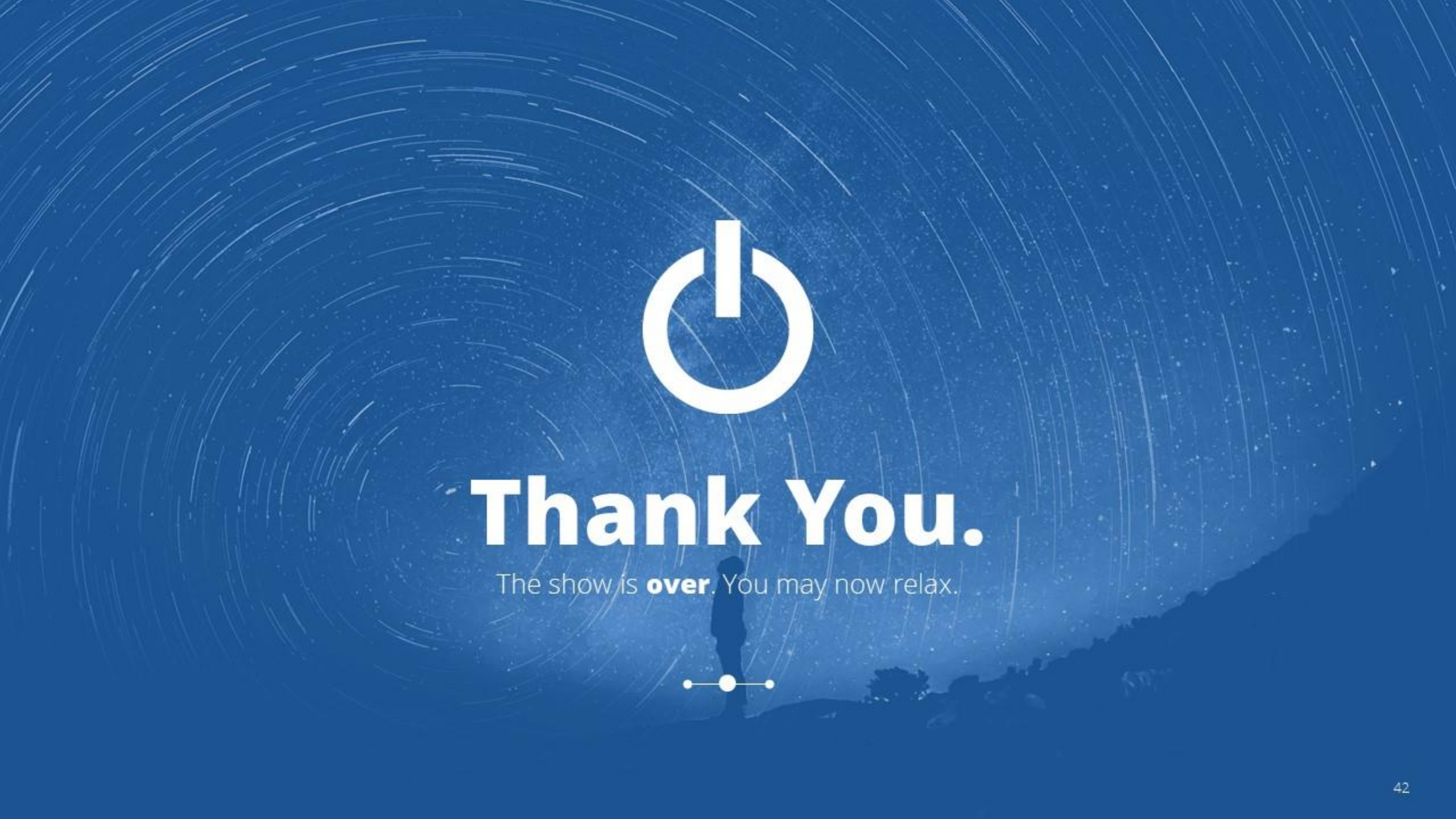
More than **1,500 Customers** World Wide

7 of the top 10 Global Banks	**6 of the top 10** Financial Services	**4 of the top 10** Energy/Utilities
8 of the top 10 Insurance Companies	**7 of the top 10** Telcos	**7 of the top 10** Global Services

ANALYST RECOGNITION

Gartner

FORRESTER


Thank You.
The show is **over**. You may now relax.