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Carl Bass | Autodesk President & CEO

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students.autodesk.com.



MD6104

Integrating Configurator 360 into your Business Process

Jon Balgley

Configurator 360 Product Architect

Class summary

How do you deploy Configurator 360 software in a professional/commercial environment? The great technology from Configurator 360 software embeds effectively into your own company's website and integrates configuration and quoting into your company's business processes. New capabilities introduced this year make Configurator 360 software suitable to be a key component that can help your company to better serve its customers. In this class you will discover how to integrate Configurator 360 software's configuration and quoting capabilities into your own website, and you'll see how to use Configurator 360 software in conjunction with Autodesk PLM 360 software to track leads. You will also learn how to respond with custom quotes and lead into other downstream engineering, sales, and financial operations.

Key learning objectives

At the end of this class, you will be able to:

- Discover the **website integration capabilities** of Configurator 360 service
- Discover the extent of **integration with Autodesk PLM 360**
- Discover the **business-process capabilities** that could be enabled or enhanced
- Recognize the **roles and skill levels** required to effectively integrate the Configurator 360 service into a typical business

Agenda

- Introduction
- Overview of Configurator 360
- Embedding into Your Website
- Custom PDF Documents
- Native RFQ
- PLM 360 RFQ
- PLM 360 BOM
- Review

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Where does Configuration Fit in Your Business Process?

B2B users requesting info directly from website



Distributors or resellers taking orders



Post-order engineering review/approval



Different Strokes

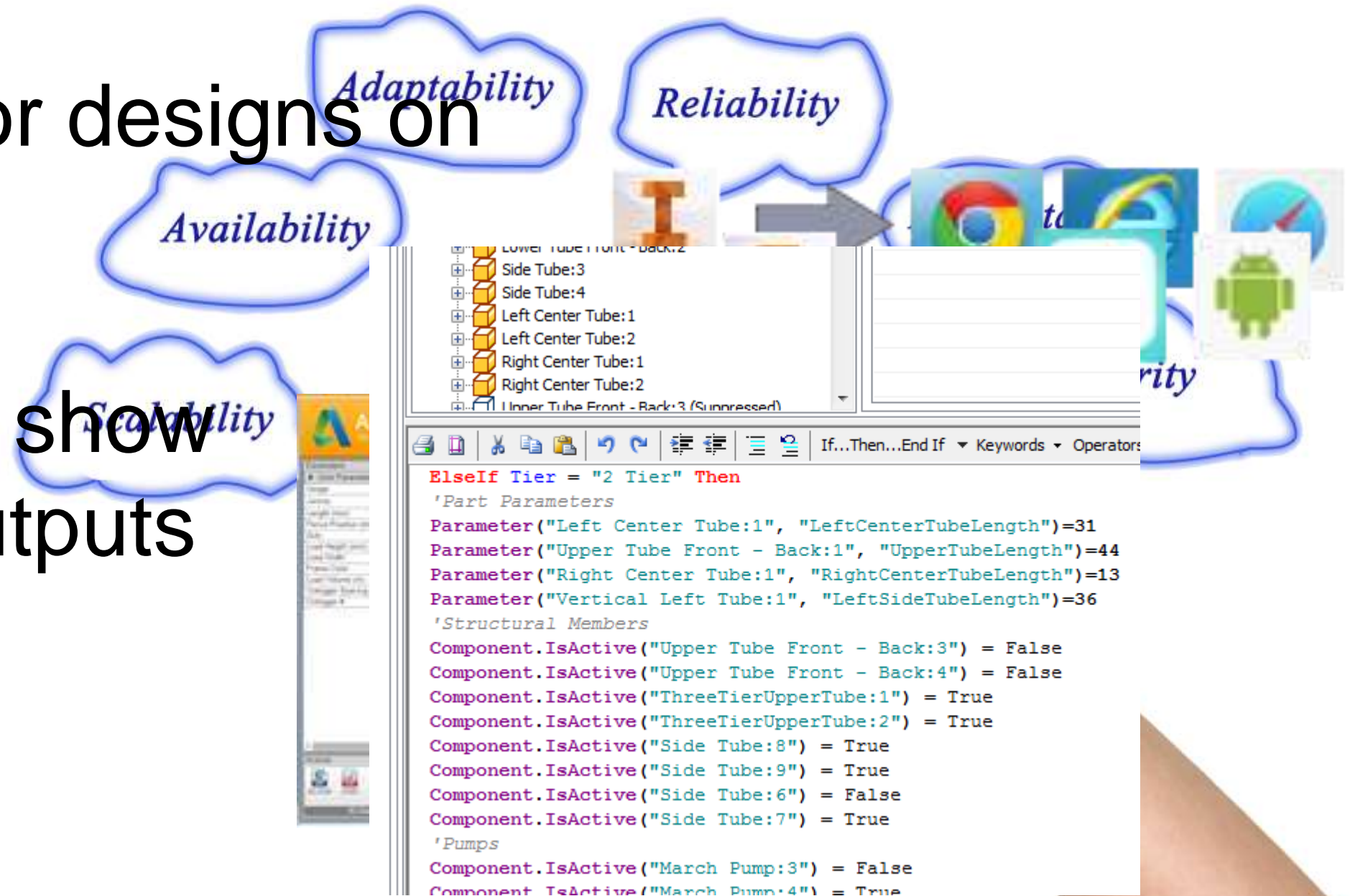


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Basic Functions

- SaaS
- Configurable Inventor designs on the web
 - ...and mobile devices
- Expose parameters, show results, download outputs
- “Catalog”
- iLogic and ETO



Basic Functions

- Two types of user, admin-user / end-user

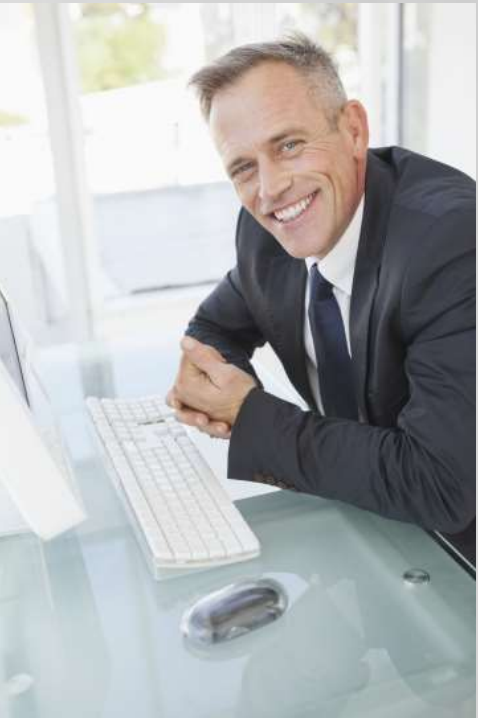
Alan, the admin-user





Edward, the end-user



Admin UI – Designs Page



 **AUTODESK® CONFIGURATOR 360™**
Administrator

[Newsgroup](#) [Feedback](#) [Help](#)


Designs



Options




Users

Log

RFQs

 New Design

Thumbnail	Name	Description	Access	Actions
	Bag Dump Station	Autodesk Inventor model driven by parame		
	Box Car	Autodesk Inventor model driven by iLogic		
	Brewing Rack			

 **AUTODESK® CONFIGURATOR 360™**
Administrator

 Jon Balgley [Newsgroup](#) [Feedback](#) [Help](#)

Designs

Options


Users

Log

RFQs

 New Design


 



Thumbnail	Name	Description	Access	Actions
	__D1d2		<div> Unrestricted viewing <div></div></div> <div><input type="checkbox"/> Exclude from catalog</div>	  
	__pg		<div> Unrestricted viewing <div></div></div> <div><input type="checkbox"/> Exclude from catalog</div>	  



Catalog





 **Autodesk Samples**
This catalog shows a representative set of designs.


 Jon Balgley 


Product Catalog


11 products in total



 Bag Dump Station >

 Box Car >

 Brewing Rack >





 **Jon's Company**


 Jon Balgley 

Product Catalog

102 products in total


 __D1d2 >

 __pg >




Configuration page






Autodesk Samples

This catalog shows a representative set of designs.

Bag Dump Station 

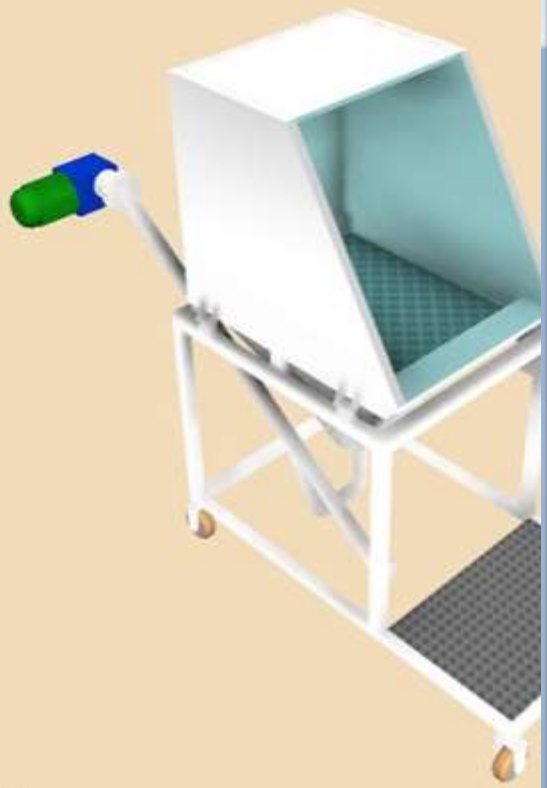
 Autodesk


Parameters

▼ User Parameters


Length (in)	45
Width (in)	25
Height (in)	55
DoorOpen	<input type="checkbox"/>
Sieve	<input checked="" type="checkbox"/>


☒ Auto Update








Actions

 3D DWF

 STEP


 SAT

 STL

 JPEG


3D Outputs



Image Outputs



Autodesk Samples

This catalog shows a representative set of designs.

Trailer 


 Autodesk Configurator360 


Parameters

▼ User Parameters

Usage	Road
Jockey	
Length (mm)	2200
Fence Position (mm)	500
Duty	Light
Load Height (mm)	700
Load Width	1-Narrow
Frame Color	Blue
Load Volume (m)	0
Outrigger Spacing (mm)	800
Outrigger #	2


☒ Auto Update








[Request a Quote](#)


Actions


 3D DWF


 STEP


 SAT


 STL

 JPEG

 Inventor DWG

 AutoCAD DWG

 DXF

 Drawing PDF

3D Outputs

Image Outputs

Drawing Outputs



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Embedding

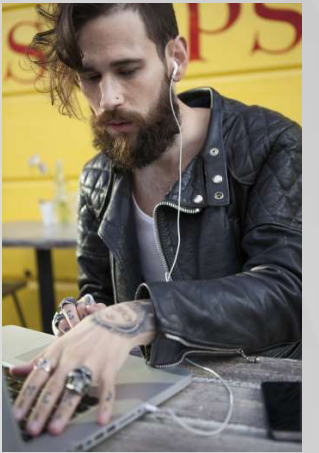
- Out-of-the-box UI usually not sufficient
- Catalog & viewer
- Custom UI via Javascript API
- Test Harness
- Example



Wally the web programmer

Javascript API

- `initViewer()`
- `getPropertyValues()`, `setPropertyValues()`
- `updateViewer()`



Test Harness

embedding.configurator360.autodesk.com

.../doc.html

Test Harness for Embedding Configurator 360 Designs

Design Key

https://configurator360.autodesk.com/1234/abcd

575458448649916390/2gn1dj1tslb4

Show Viewer »

Hide Panes

☒ branding

☒ parameters

☒ model

☐ actions

☒ message

☐ autoupdate

initViewer arguments

```
{
  "container": "emb",
  "design": "575458448649916390/2gn1dj1tslb4",
  "panes": {
    "actions": true,
    "autoupdate": true
  }
}
```

Required step: You must do the following or you will get the error "403 - Forbidden: Access is denied":

1. Add "http://embedding.configurator360.autodesk.com" in your Embedding Options. There are some quirks on this page currently:

- Make sure there's no trailing whitespace in the URL.
- Click outside the URL to get the input to 'take'.
- Be sure the checkbox is checked.
- "http://localhost" will need to be added as an ip address (i.e. "http://127.0.0.1")

2. Set your design to "Unrestricted viewing" (not "Admins only" nor "Authorized users only")

Full URL of Design: https://configurator360.autodesk.com/575458448649916390/2gn1dj1tslb4

Usage

Road

Jockey

☐

Length

2200

Fence_position

500

Duty

Light

Load_height

700

Load_width_selection

1-Narrow

Frame_Color

Blue

Load_volume

0

Outrigger_spacing

800

Outrigger_num

2

Call setPropertyValues()


☒ Call updateViewer() after

Call enableAutoUpdate(false)

Call updateViewer()

Auto Update

Iso



AUTODESK
CONFIGURATOR 360

Request a Quote

Actions

DWF

3D DWF

STEP

3D Outputs

SAT

3D Outputs

STL

3D Outputs

JPEG

Image Outputs

Inventor DWG

Drawing Outputs

AutoCAD DWG


Drawing Outputs


DXF

Drawing Outputs

Drawing PDF

Drawing Outputs

 AUTODESK UNIVERSITY 2014

 AUTODESK®

jsfiddle.net



JSFIDDLE

Run Update Fork Set as base TidyUp JSHint Collaboration Share

jbalgley

Frameworks & Extensions

No-Library (pure JS)

onLoad

Fiddle Options

External Resources

Languages

Ajax Requests

Legal, Credits and Links

1 <body>

2 <h1>Sample C360</h1>

3

4 <div id="myViewer"></div>

5

6 Hello, do you like this model?

7

8

9 </body>

10

HTML

1 div#myViewer {

2 position: relative;

3 width: 800px;

4 height: 600px;

5 }

CSS

28 }

29

30 // success handler

31 function viewerLoaded(viewer) {

32 // The C360Viewer is loaded, do something with it.

33 viewer.getPropertyValues(null, listProperties);

34 }

35

36 // error handler

37 function failedToLoad(viewer) {

38 reportError(viewer.state);

39 // viewer.unload(); // Unload the C360Viewer

40 }

41

42

43 // Check if the API was loaded.

44 if (C360) { // Not supported on mobile devices currently.

45 // alert('c360 true');

46 // Check client compatibility and load the viewer if compatible.

47 C360.checkCompatibility(function (result) {

48 if (result.compatible) {

49

50 // Initialize the viewer

51 C360.initViewer({

52 container: "myViewer",

53 design: "973536070460591521/7pz11mmhv04",

54 panes: false,

55 success: viewerLoaded, // Set success handler

56 error: failedToLoad // Set error handler

57 });

58

59 } else {

60 reportError(result.reason);

61 }

62 };

63

64 } else {

65 // alert('c360 false');

66 }

67 }(this));

68

JavaScript

Sample C360

Result

Iso

AUTODESK[®] CONFIGURATOR 360

Send RFQ

Hello, do you like this model?



www.360trailers.com

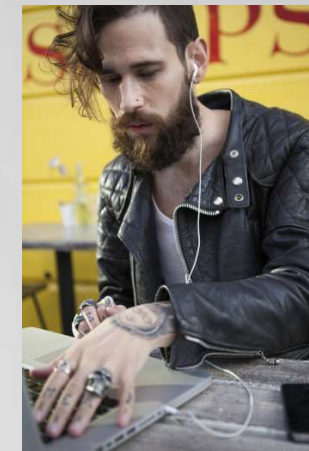


Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus.

PRODUCTS >



Lorem | ciis natoque | penatibus





Lorem ipsum dolor sit

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Donec quam felis, ultricies nec, pellentesque eu, pretium quis, sem. Nulla consequat massa quis enim. Donec pede justo, fringilla vel, aliquet nec, vulputate eget, arcu. In enim justo, rhoncus ut, imperdiet a, venenatis vitae, justo. Nullam dictum felis eu pede mollis pretium. Integer tincidunt. Cras dapibus. Vivamus elementum semper nisi. Aenean vulputate ele



Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis

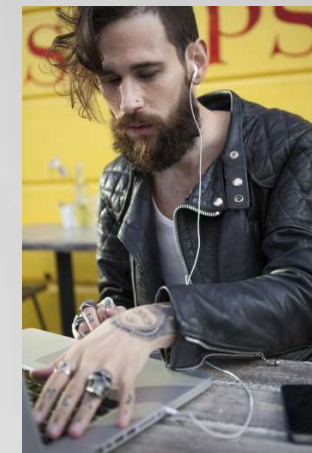
Lorem I ciis natoque



Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis

Lorem I ciis natoque

Lorem I ciis natoque I penatibus



Catalog / Trailer

Trailer Options

Usage:

Road

Off Road

Jockey:

Jockey

Length (mm): 2200



Fence Position (mm): 100



Load Height (mm): 700



Duty:

Light

Heavy

Load Width (mm):

1-Narrow

2-Medium

3-Wide

Frame Color:

Blue

Gray

Green

Red

Yellow



Iso

AUTODESK
CONFIGURATOR 360

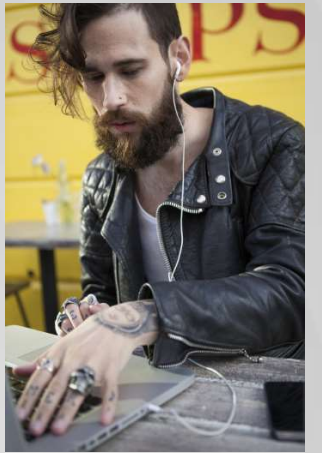
Request a Quote

Actions

3D DWF	STEP	SAT	STL	JPEG	Inventor DWG	AutoCAD DWG	DXF	Drawing PDF
3D Outputs				Image Outputs	Drawing Outputs			

Model courtesy of Vimek

Lorem Ipsum natosque penatibus



Staff/Skills required

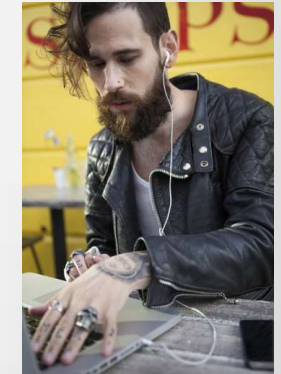
- Requirements analysis
- Specification
- Funding
- Web design
- Javascript programming
- Integration with other internal systems
- Deployment

But this is a LITTLE project. EASY.



Sally
the CEO

Sam the
sales guy



Irene
from I.T.

Alan the Admin-User is central to it!

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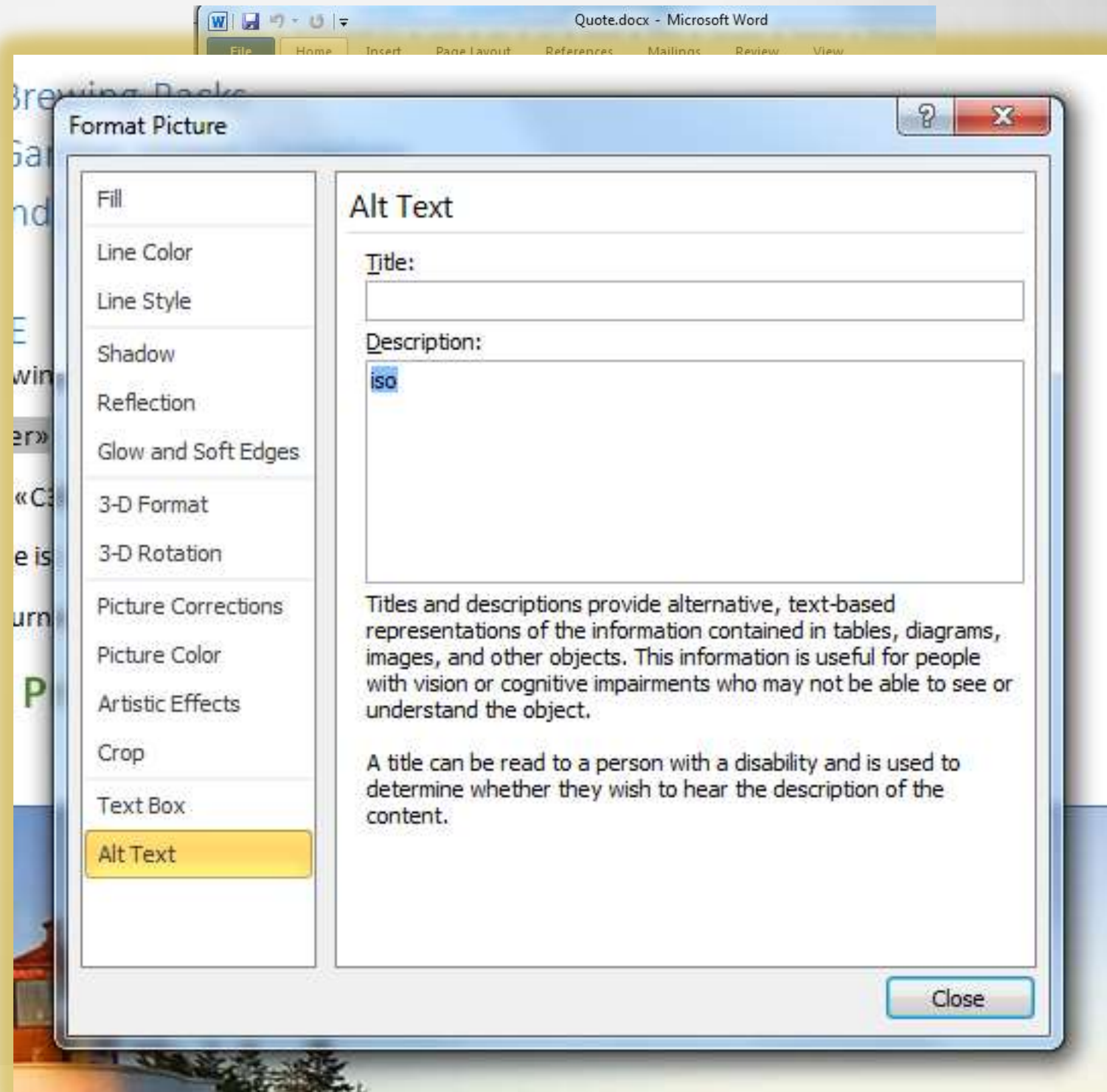
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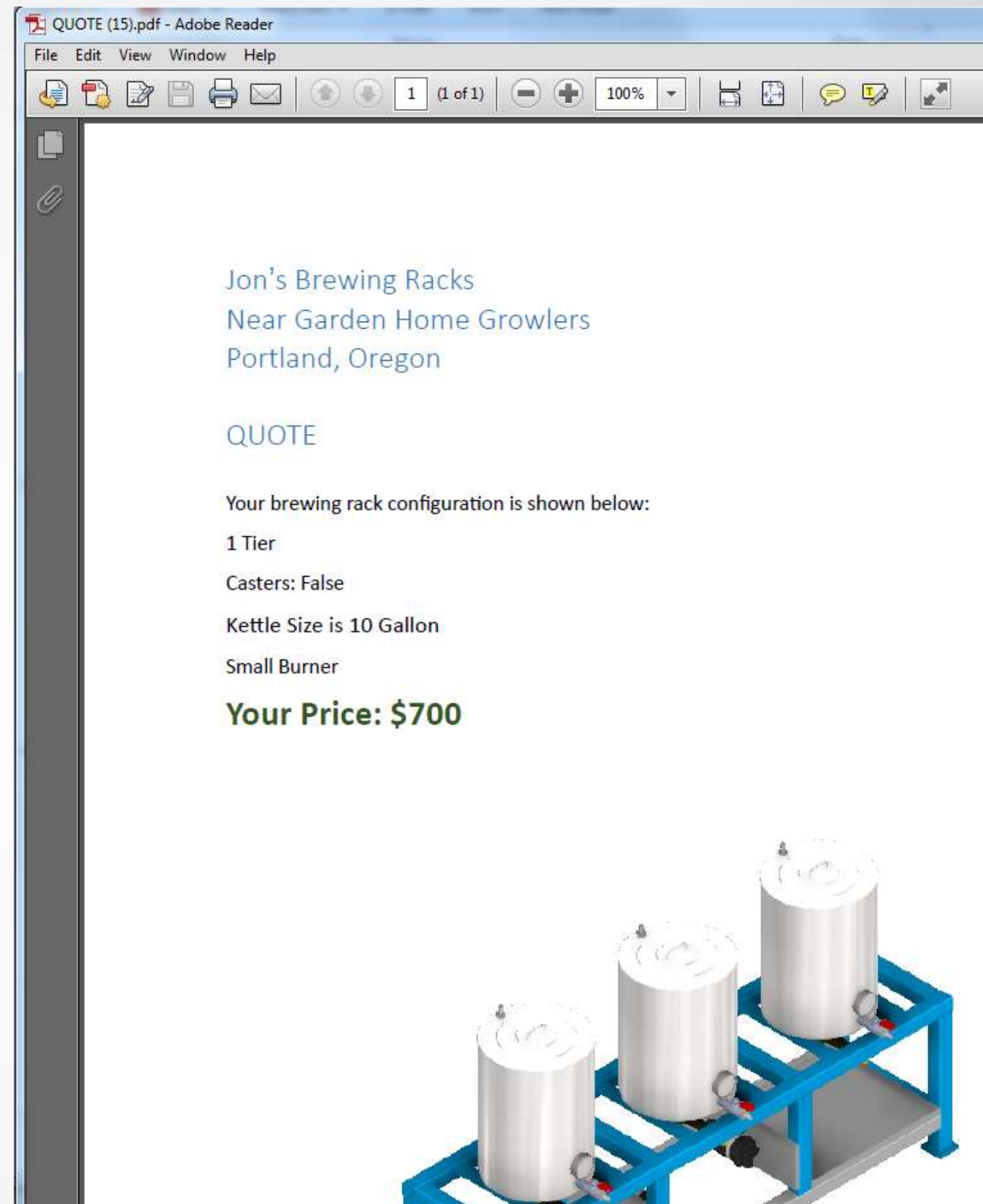
Custom PDF Documents

- For “quotations” or “specs” or “order confirmations”
- Based on Word “template” file
- Merge fields and images, data from Inventor/ETO model

Word template

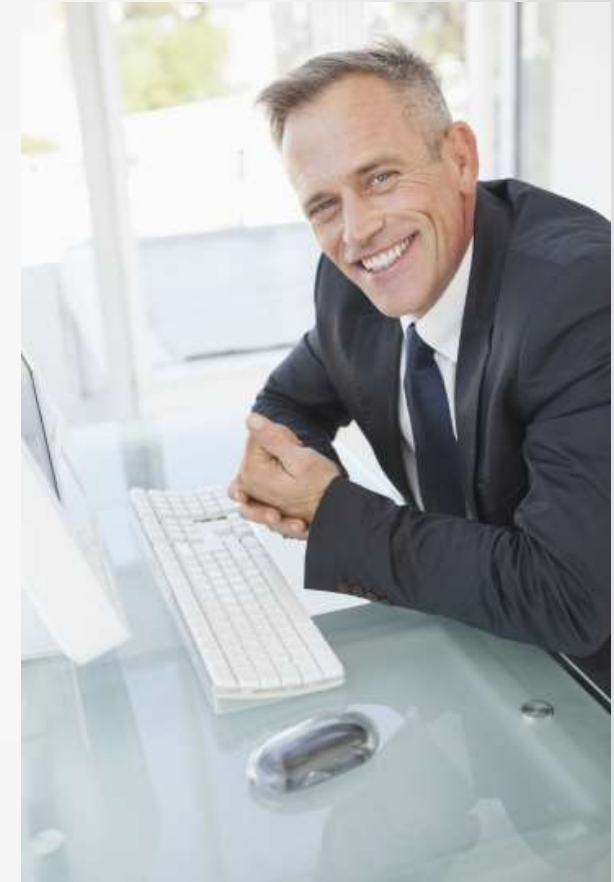


PDF Output



Staff/Skills required

- Simple Word skills
- General Configurator 360 admin skills



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Native RFQ


- RFQ = “Request For Quote”
- End-user makes request
- Configurator 360 keeps track
- Admin-user receives request
- Open model “as configured”


Native RFQ – End User


J Jon's Com


Parameters	
▼ Model Parameters	
fixedEndOuterDiaXXX (mm)	50
filletRadxxx (mm)	2
slotWidth (mm)	20
fixedHoleDia (mm)	20
slotToHoleLength (mm)	76.2
thickness (mm)	5
▼ User Parameters	
swingEndOuterDia (mm)	75

Actions

STEP

IGES

STL

JPEG

3D OutputsImage Outputs

Request price

Please enter your contact information below, and we will get back to you with a quotation for this configuration.

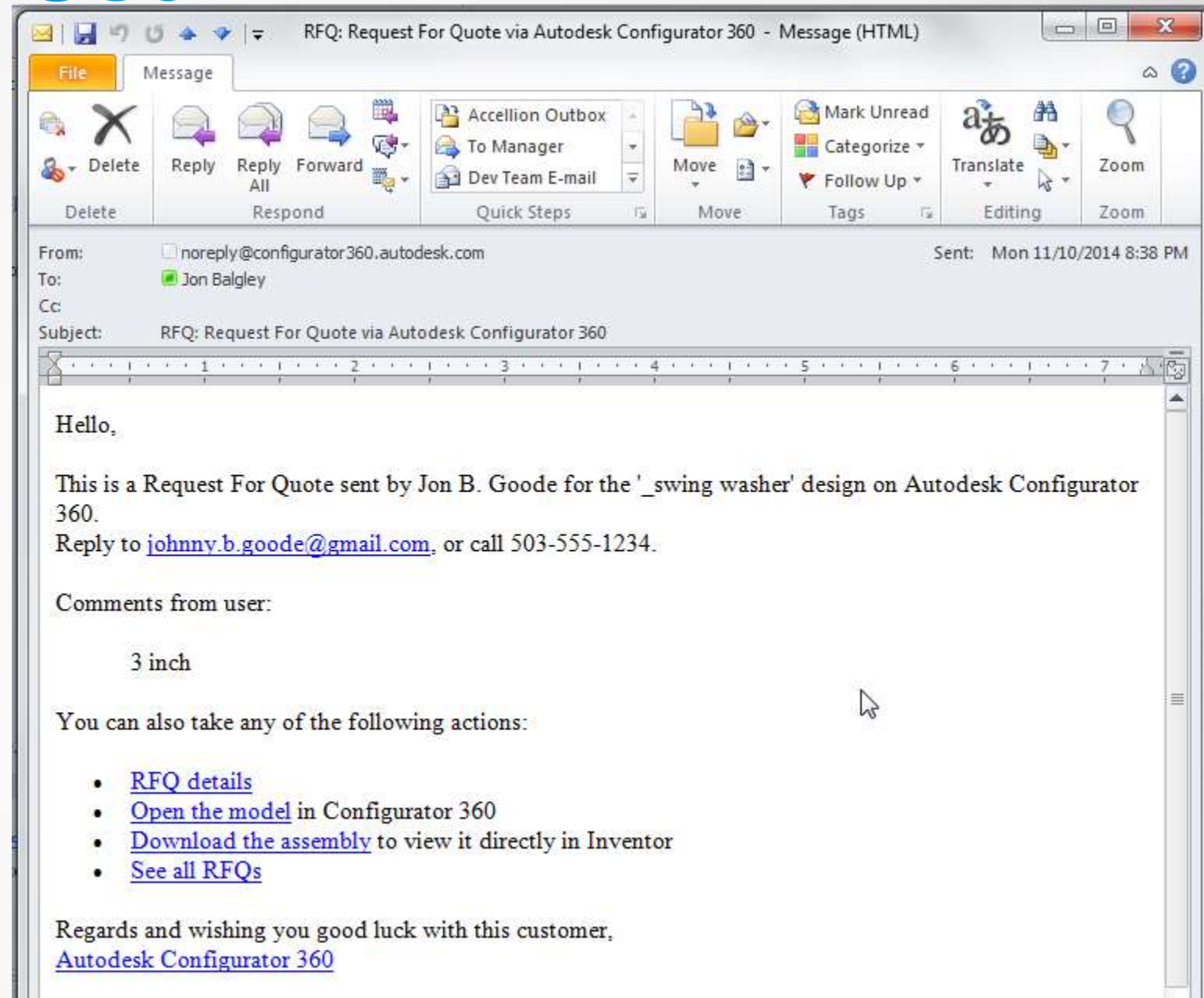
Name	Jon B. Goode		
Email	johnny.b.goode@gmail.com		
Job Title	Anything		
Company	Self-employed		
Address	123 Main St.		
City	Portland		
State	OR	Country	United States
Zip	97225		
Phone	503-555-1234		
Comments	3 inch		

We partner with Autodesk to help bring you this service. All personal information submitted will be handled according to the privacy policies of Jon's Company and [Autodesk](#).

SubmitCancel



Native RFQ – Admin User



Native RFQ - Setup



The screenshot shows the Autodesk Configurator 360 Administrator interface. The top navigation bar is orange and contains the Autodesk logo, the text "AUTODESK® CONFIGURATOR 360™", the user name "Jon Balgley" with a dropdown arrow, and links for "Newsgroup" and "Feedback". Below the navigation bar is a tabbed interface with "Designs", "Options", "Users", "Log", and "RFQs". The "Options" tab is selected. On the left side of the "Options" tab, there is a sidebar with icons and labels for "Branding", "Downloads", "RFQ Setup" (which is highlighted), "Auto-update", "Credits", and "Embedding". The main content area of the "Options" tab shows the "RFQ Setup" configuration. It includes a checkbox labeled "Enable Request For Quote (RFQ)" which is checked. Below this is a text input field containing the email address "jon.balgley@autodesk.com". Further down is a text input field labeled "RFQ Button text" containing the text "Request price". At the bottom is a text input field labeled "RFQ Custom text" containing the text "Please enter your contact information below, and we will get back to you with a quotation for this configuration."



Staff/Skills required

- General Configurator 360 admin skills



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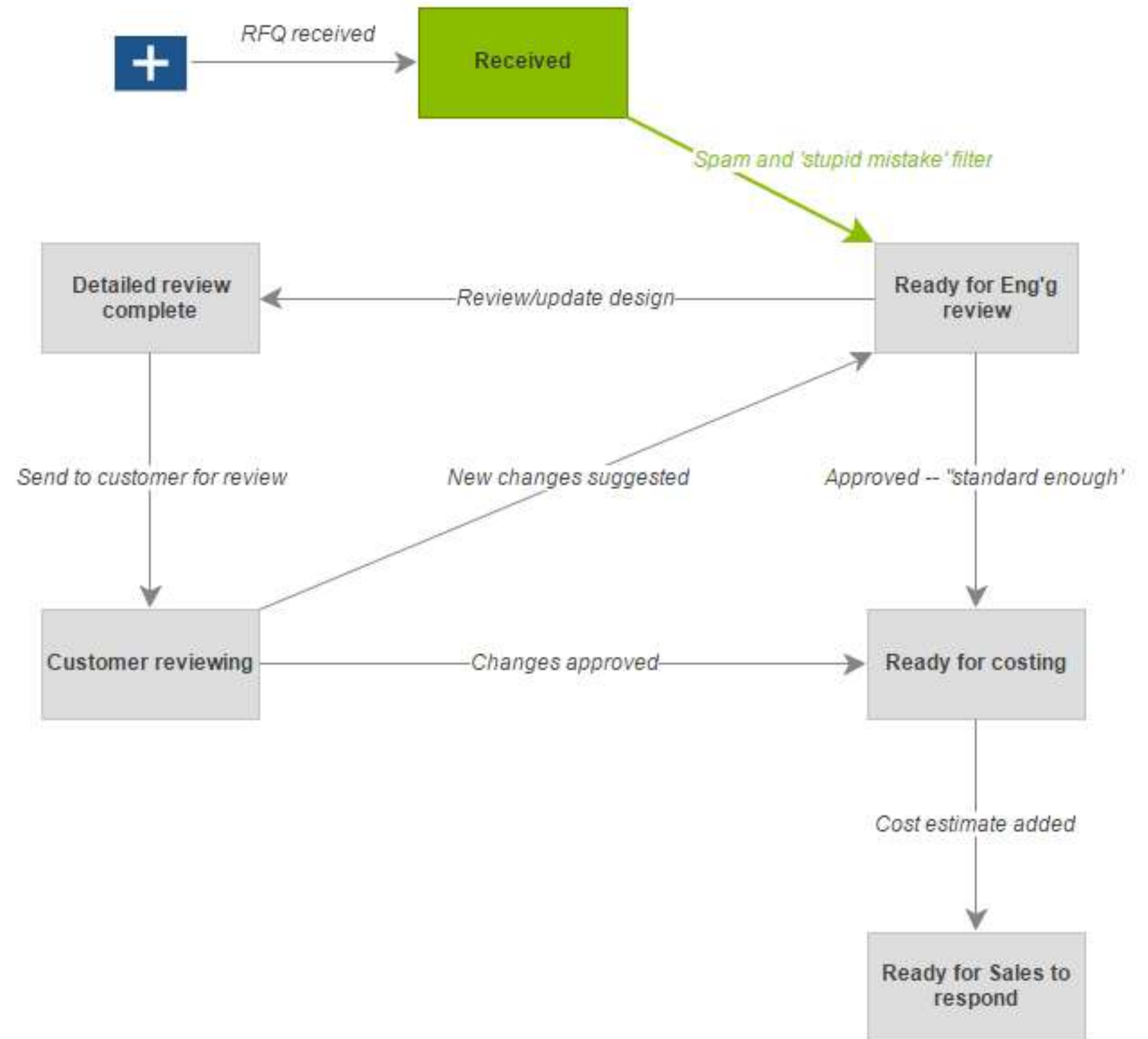
- Introduction
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What is PLM 360?



- Autodesk SaaS
- Automation system for managing workflows and records
- Users/groups
- Simple tables/records (“workspaces” and “items”)
- Items can have “states”
- Sequence of states forms a workflow
- ...and much more.

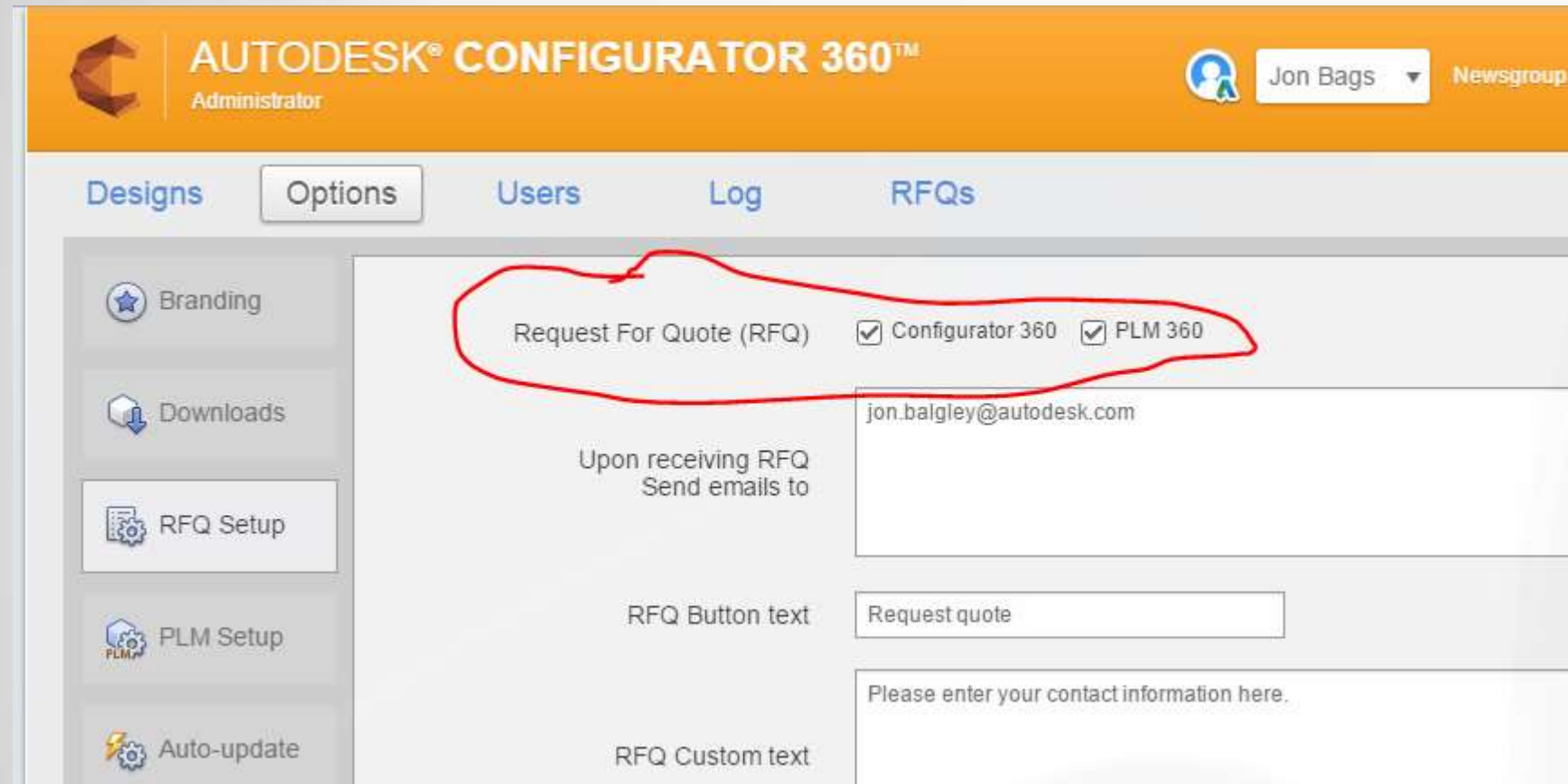
Sample Workflow



PLM 360 RFQ

- RFQ = “Request For Quote”
- End-user makes request
- **PLM 360** keeps track of data
 - Same ability to open model “as configured”
- PLM 360 “workflow” begins
- “Pairing” / Setup
- “Update” RFQ data

Admin-user Setup



The screenshot shows the Autodesk Configurator 360 Administrator interface. The top navigation bar is orange and contains the Autodesk logo, the text "AUTODESK® CONFIGURATOR 360™ Administrator", a user profile icon for "Jon Bags", and a "Newsgroup" link. Below the navigation bar are tabs for "Designs", "Options", "Users", "Log", and "RFQs". The "RFQs" tab is selected. On the left side, there is a sidebar with icons for "Branding", "Downloads", "RFQ Setup", "PLM Setup", and "Auto-update". The main content area shows the "Request For Quote (RFQ)" settings. A red circle highlights the "Request For Quote (RFQ)" section, which includes checkboxes for "Configurator 360" and "PLM 360", both of which are checked. Below this, there is a text input field for "Upon receiving RFQ Send emails to" with the value "jon.balgley@autodesk.com". There is also a text input field for "RFQ Button text" with the value "Request quote". At the bottom, there is a text input field for "RFQ Custom text" with the value "Please enter your contact information here."

...and more



End-user Makes Request

J Jon's C

Parameters

▼ Model Parameters

fixedEndOuterDiaXXX (mm)	50
filletRadxxx (mm)	2
slotWidth (mm)	20
fixedHoleDia (mm)	20
slotToHoleLength (mm)	76.2
thickness (mm)	5

▼ User Parameters

swingEndOuterDia (mm)	75
-----------------------	----

Actions

STEP

IGES

STL

JPEG

3D OutputsImage Outputs

Request price

Please enter your contact information below, and we will get back to you with a quotation for this configuration.

Name

Jon B. Goode

Email

johnny.b.goode@gmail.com

Job Title

Anything

Company

Self-employed

Address

123 Main St.

City

Portland

State

OR

Country

United States

Zip

97225

Phone

503-555-1234

Comments

3 inch

We partner with Autodesk to help bring you this service. All personal information submitted will be handled according to the privacy policies of Jon's Company and [Autodesk](#).

Submit

Cancel



PLM 360 Keeps Track of Data

The screenshot displays the Autodesk PLM 360 web application. The top navigation bar includes the Autodesk logo, the text 'AUTODESK PLM 360', and a menu with 'Main Menu', 'Reports', 'Tools', and 'Administration'. Below this, a sub-header shows 'Pretty View' with a filter icon and a search icon. The main content area is divided into two panels. The left panel is a table of RFQs, and the right panel shows the details for the selected RFQ, NU000397.

C360 RFQ Nu...	Email	Link
NU000410	sd@dasd.com	OpenModel
NU000405	fred1@test.com	
NU000398	p@machine.com	OpenModel
NU000397	jon@photodad....	OpenModel
NU000396	single@part.com	OpenModel
NU000395	asdasd@asdas...	OpenModel
NU000394	yoyo@yoyo.com	OpenModel
NU000393	david.test@bo...	OpenModel
NU000388	peaktest2@test...	OpenModel
NU000368	f@foo.com	
NU000367	hmm@mail.com	OpenModel
NU000366	qq@mail.com	OpenModel
NU000361	s@s.com	OpenModel
NU000353	jon@photodad....	
NU000352	jon@photodad....	
NU000351	david.shi@auto...	OpenModel

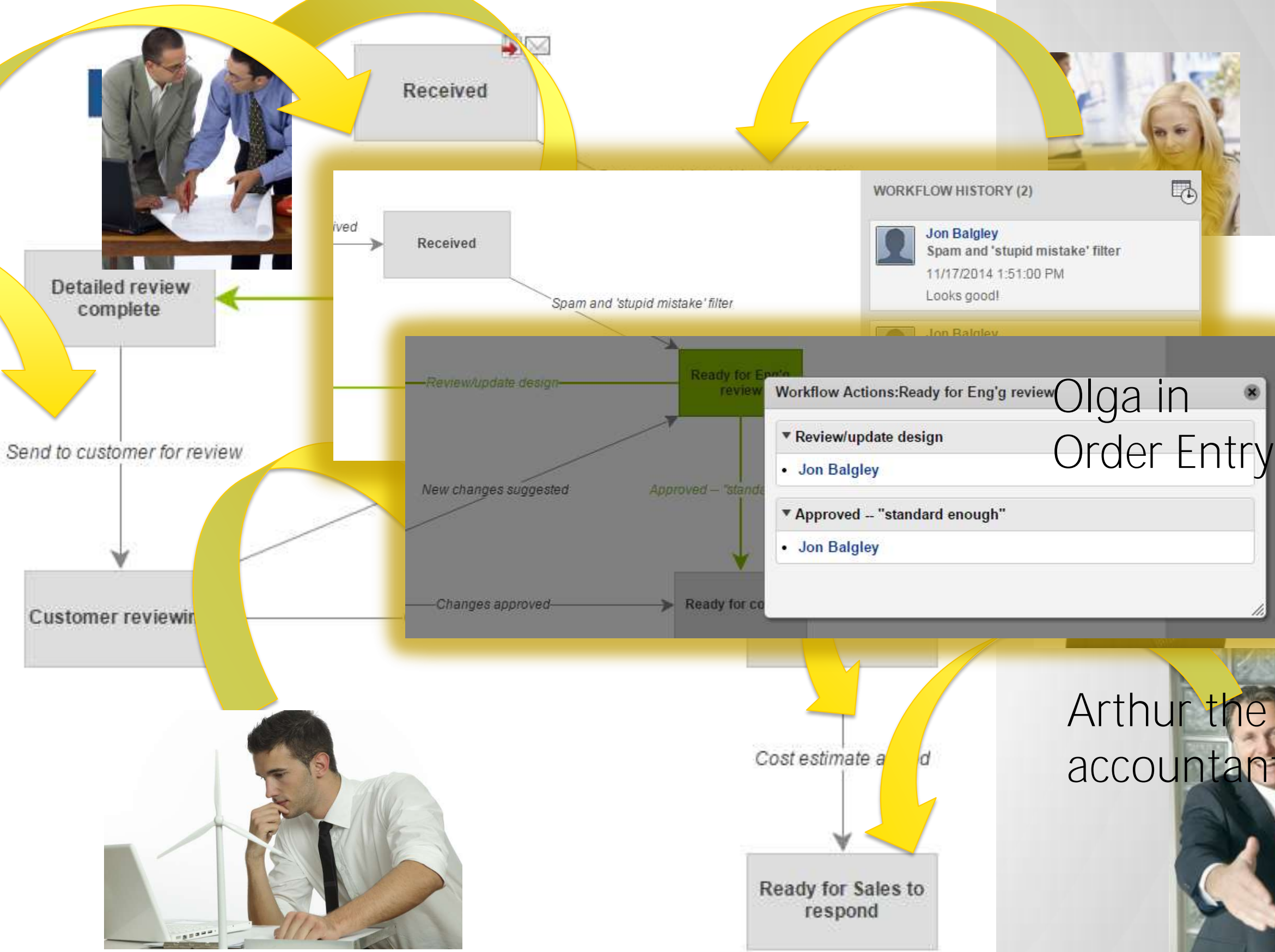
The right panel, titled 'Configurator 360 RFQ', shows the details for 'NU000397 - jon@photodad.com'. It includes tabs for 'Item Details', 'Bill of Materials (0)', and 'Where Use'. An 'Edit' button is visible. The 'Details (1 of 4)' section shows the 'C360 RFQ Number' as 'NU000397'. The 'Contact Details (2 of 4)' section lists the following information:

- Name: Jon Balgley
- Email: [redacted]
- Job Title: A
- Company: A
- Address: [redacted]
- City: Portland
- State/Country: OR
- Zip Code: 97225
- Phone: [redacted]

PLM 360 Workflow Begins



Workflow



Olga in
Order Entry

Arthur the
accountant



Staff/Skills required

- “It takes a village”

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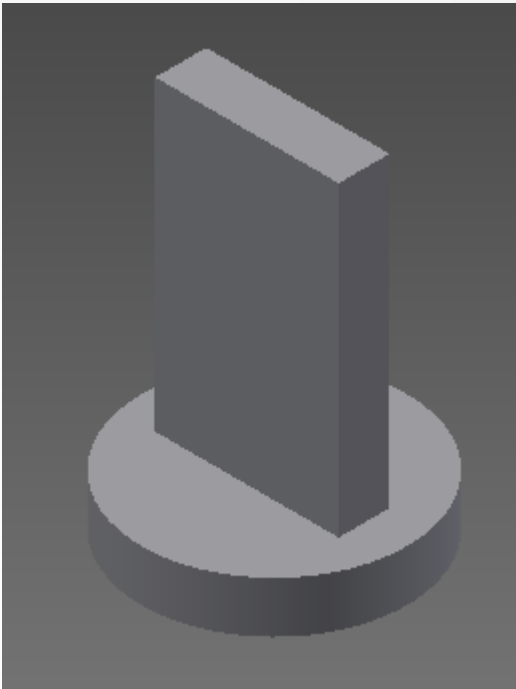
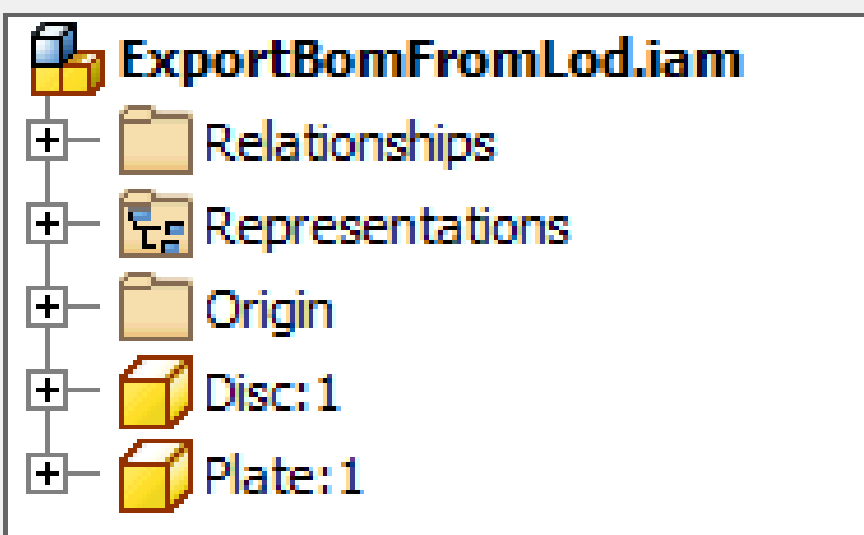
PLM 360 BOM

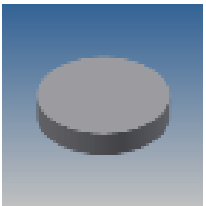

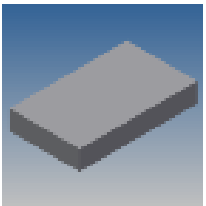

- BOM = “Bill of Materials”
- Inventor BOM → PLM BOM
- Custom / Standard

Inventor “BOM Structure”

- Normal
- Inseparable – normal, but treat assembly like a part
- Purchased – assemblies also treated like a part
- Phantom – not transferred, children promoted
- Reference – not transferred, children ignored

Inventor “BOM Structure”



Model Data Structured Parts Only (Disabled)										
Item	Part Number	Thumbnail	BOM Structure	Unit QTY	QTY	Stock Number	Description	REV		
▶ 1	Disc		 Normal	Each	1					
▶ 2	Plate		 Normal	Each	1					

PLM BOM

- Attached to RFQ Item

Configurator 360 RFQ

NU000436 - peaktest2@test.com

Item Details ▾ Bill of Materials (2) Where Used (0) Relationships (0) ▾ Attachments (2) Change Log (6)

Add Edit

Nested Flat

Default View BOM View as of: 11/30/2014 Released Revisions

#	Descriptor	Revision				Lifecycle	Quantity	Units
0.0	NU000436 - peaktest2@test.com	-			2		-	-
1.1	Cap_15CN_NoIndicator_0_3_4.41BBD465BF4CD49346BD40DF974DC668 [REV:w]	WIP				Unreleased	1.0	
1.2	Bowl_15CN_Single_NoDrain.89CE0EF84F4002DE35C4913985270EBA [REV:w]	WIP				Unreleased	1.0	

PLM BOM

- Items in a workspace (records in a table)
 - Or multiple workspaces
- Hierarchical relationship between “parent” and “children” items; quantity

PLM BOM – Two Workspaces of Items

Custom

Name	Part Number	Description
Assembly	PN001	Anything

Standard

Name	Part Number	Description
Disc	PN002	Something
Plate	PN003	Another

Integration

- Populates PLM BOM from Inventor BOM
- “Standard” and “Custom” workspaces
- Standard = reusable for other customers
- Custom = unique for this order
- Partitioned by Inventor BOM Structure
 - (normal/inseparable vs. purchased)

Staff/Skills required

- Inventor skills (part numbering)
- General Configurator 360 admin skills
- PLM and other admin skills



Agenda

- Introduction
- Overview of Configurator 360
- Embedding into Your Website
- Custom PDF Documents
- Native RFQ
- PLM 360 RFQ
- **PLM 360 BOM**
- Review

Agenda

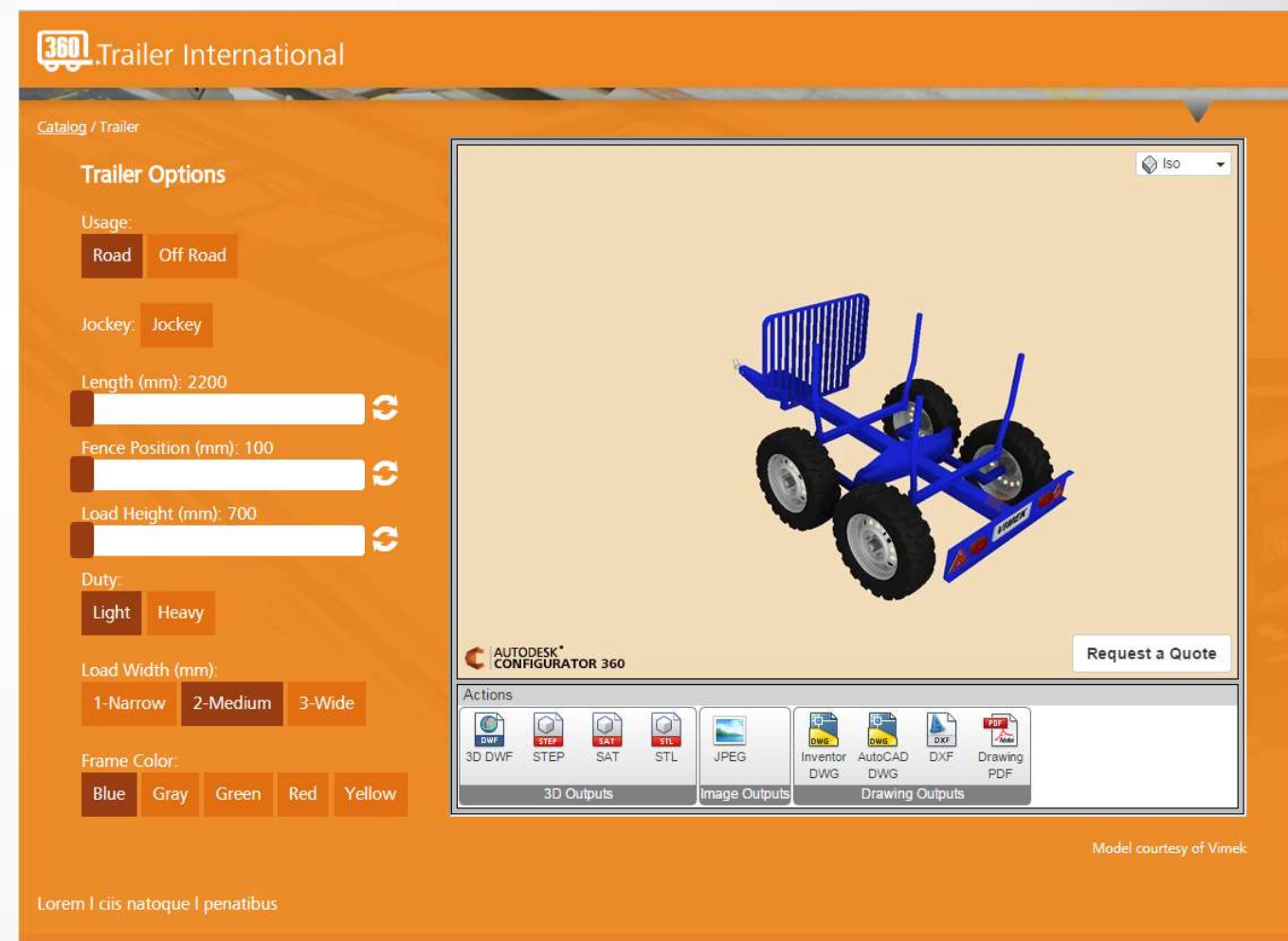
- Introduction
- Overview of Configurator 360
- Embedding into Your Website
- Custom PDF Documents
- Native RFQ
- PLM 360 RFQ
- PLM 360 BOM
- **Review**

Review: Key learning objectives

- ...website integration capabilities of Configurator 360 service
- ...enhanced business-process capabilities
- ...integration with Autodesk PLM 360
- ...roles and skill levels integrate Configurator 360

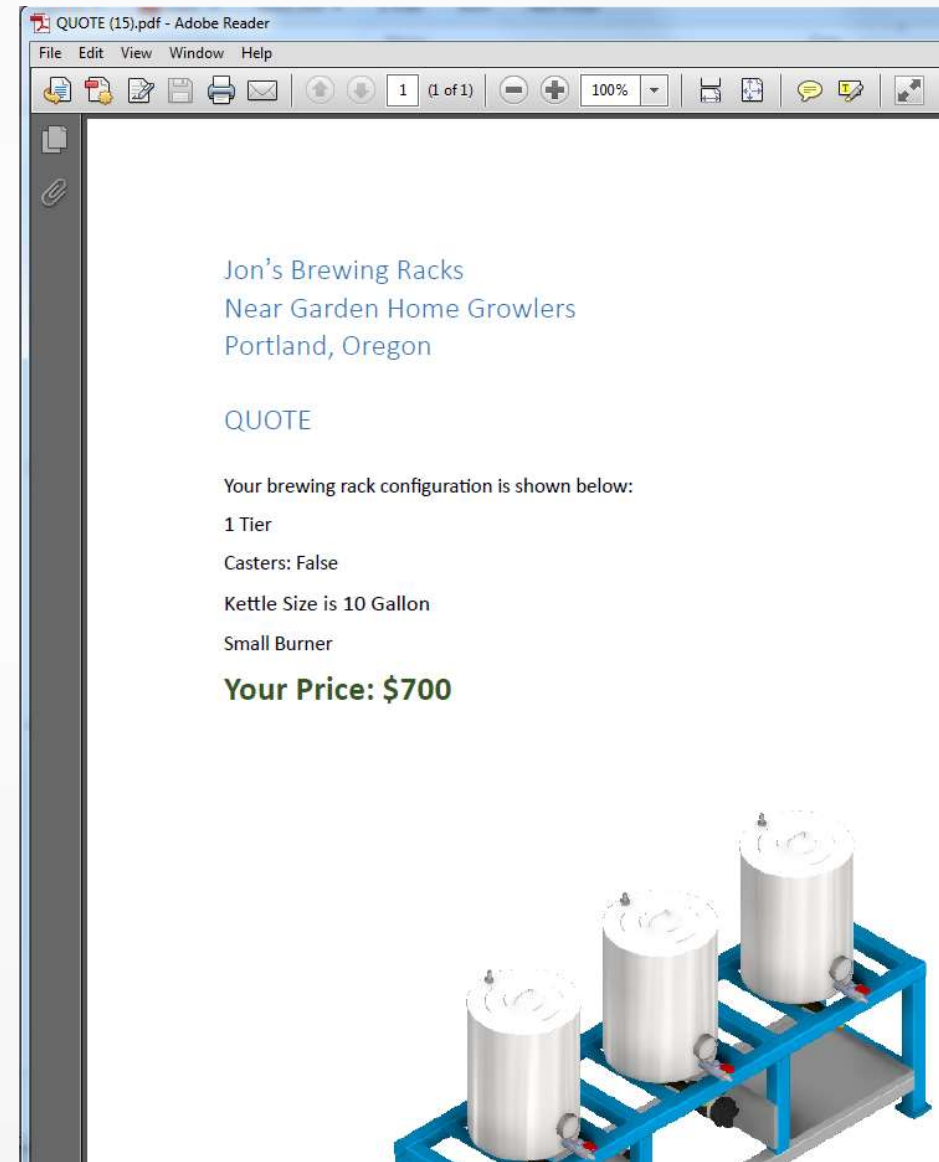
Learning Objective: Website Integration

- Custom website is common scenario
- Test environments
- Use Javascript API
- Web programmer



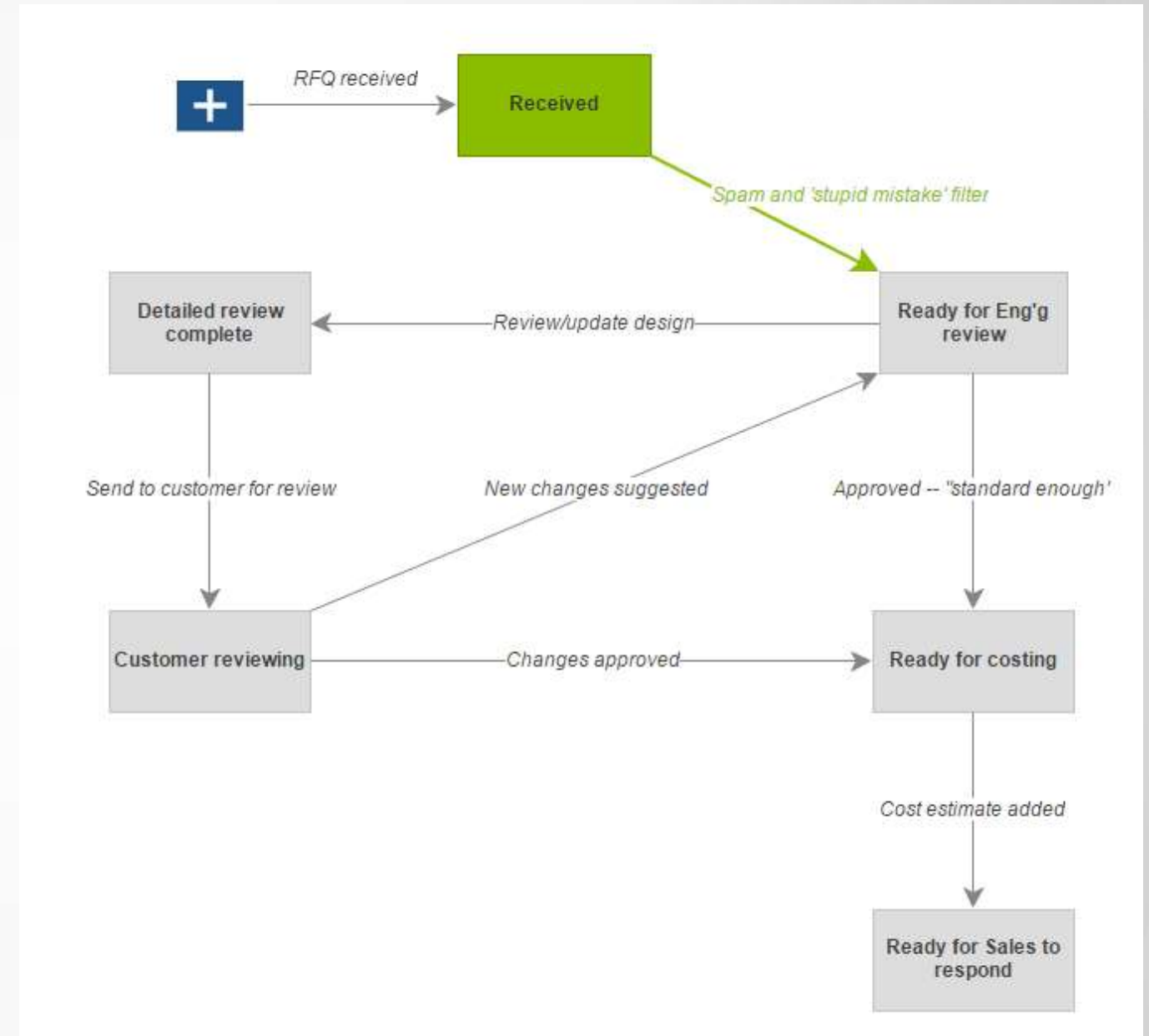
Learning Objective: Business Process Capabilities

- Custom PDF documents from Word templates
- Other outputs
- “Native” RFQ



Learning Objective: Integration with PLM 360

- Save “RFQ” data
- Optionally save Inventor BOM
- Kick off “workflow”
- Open models from PLM



Learning Objective: Roles and Skill Levels

- Inventor expert – for models and rules
- Configurator 360 admin – for coordinating
- Web programmer – genius/wizard NOT required
- PLM 360 admin – similar to a DB admin, NOT a genius/wizard

Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2015 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time



Thank you!

