

The Rise of Robotics in GRC

Rutgers WCARS 2019

Today's Speaker



Hey there.
My Name is Dan Zitting

Chief Product Officer, Chief Customer
Officer, Galvanize

I am responsible for the overall experience of Galvanize's customers, including our Product, Marketing, and Customer Success teams. I am a GRC practitioner by background.



Agenda

1. Who is Galvanize?
2. Robotics “In General”
3. Maturity Curve to Consider for Robotics (Automation and Prediction)
4. Example – HR Process Auditing
5. Example – IT SOX Control Testing
6. Comments, Questions, and Discussion



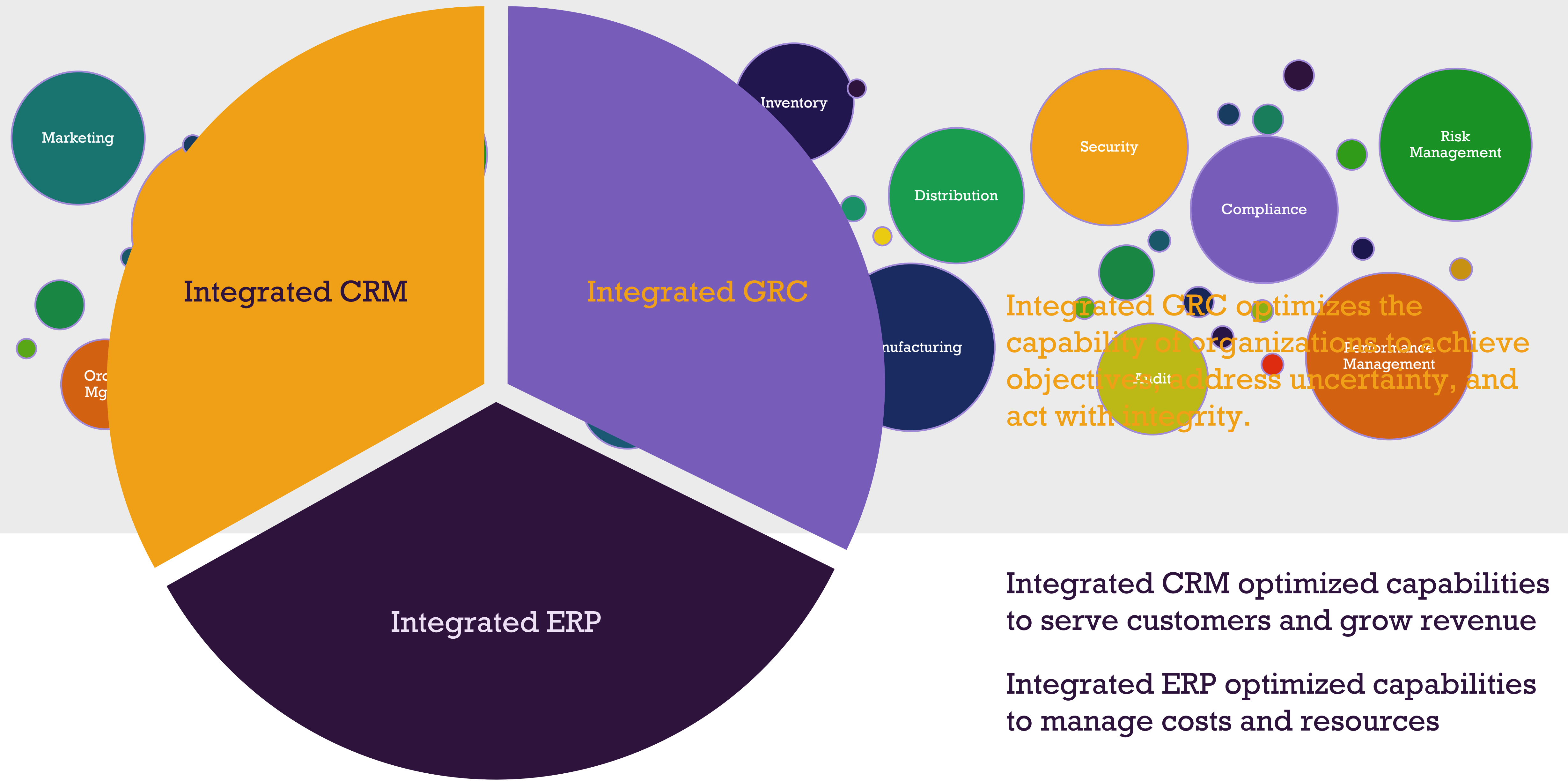
So who is Galvanize?

galvanize (*British galvanise*) – **VERB**

1. Shock or excite (someone) into taking action.
2. (often as adjective **galvanized**) Coat with a protective layer, preventing corrosion.



Digital Business Transformation is Creating New Corporate Leaders

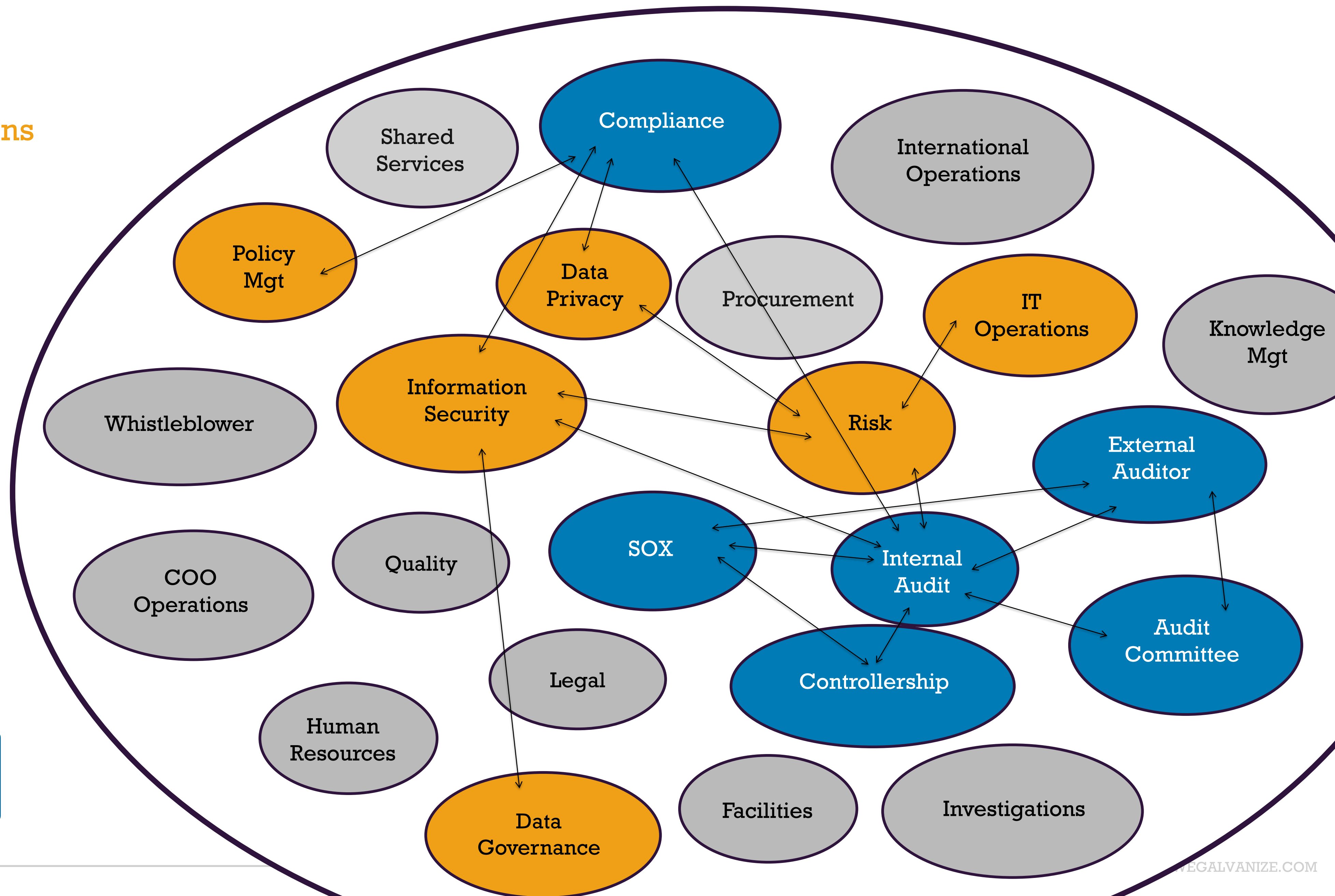


LinkedIn's Struggle with "GRC"

Today, most organizations are failing to integrate.

Integrated GRC must be relevant to strategy AND align disparate risk agendas around it.

Our goal is solving these diverse problems through ONE consumable platform and approach.





Combining strengths, ACL and Rsam make truly “integrated GRC” real.

Our Vision

A world where GRC professionals are an organization’s most sought after people.

Our Mission

Deliver a beautiful customer experience through the planet’s ONLY cloud-based, data-driven GRC solution.

Our Values

Authenticity, Disruptive Innovation, Customer Intensity

		Business Operations	Accounting & Finance	IT & InfoSec	Risk Management	Legal & Compliance	Internal Audit
	Risk Management						
	Internal Controls Management						
	Regulatory Compliance Management						
	Fraud & Corruption Management						
	Audit Management						
	IT Risk & Compliance						
	Third Party Risk Management						
	Policy & Training Management						
	Incident Reporting & Management						
	Threat & Vulnerability Management						
	Business Continuity Management						
	Robotic Automation, Monitoring & Analytics						
	Strategy & Performance Governance						
	Integrated GRC						
	Financial Performance Management						
	Environment, Health & Safety Management						
	Quality Management						
	Legal Management						



Strengthening organizations to do heroic work.

Executives need quantified clarity on the uncertainty their organizations face as well as the state of compliance with diverse obligations each must meet.

Galvanize inspires executive confidence by delivering technology solutions that bond people, teams, and processes to create a layer of visibility and protection that ensures their organization more reliably reaches its goals.



And a good excuse to give our 1972 Gran Torino a makeover ;-)





Introducing the HighBond Platform.

Built by industry experts for industry experts, the HighBond platform unites risk management, compliance, security, and audit professionals around a single *source of truth*—the insight and automation to drive change.

x HighBond

Enterprise GRC/IRM & Storyboards

RiskBond

ComplianceBond

ControlsBond

AuditBond

FraudBond

ITGRCBond

ThirdPartyBond

PolicyBond

IncidentBond

CyberBond

ContinuityBond

Rsam Workflows

ACL Robotics

Purpose built products, delivered in an integrated platform, that bond silos for accelerated impact when working together.

- Risk Management
- Regulatory Compliance
- Internal Controls
- Audit
- Fraud & Corruption
- IT GRC
- Third-Party Risk Management
- Policy Management
- Incident Response & Case Management
- Threat and Vulnerability Management
- Business Continuity
- Robotics – Data Automation, Analytics, Monitoring and Integration

“Robotics” (in a GRC context) in my view is...

1. A great “tool” for automating repetitive knowledge worker tasks
 - Repetitive audit procedures
 - Control tests
 - Risk assessments
 - Reconciliations
 - Report preparation
 - Audit planning data gathering
 - Etc., etc., etc....
2. A way to incrementally but sustainably add capacity without having to always rely on increases in headcount budgets
3. A great tool for marketing durable value-add capabilities of the team

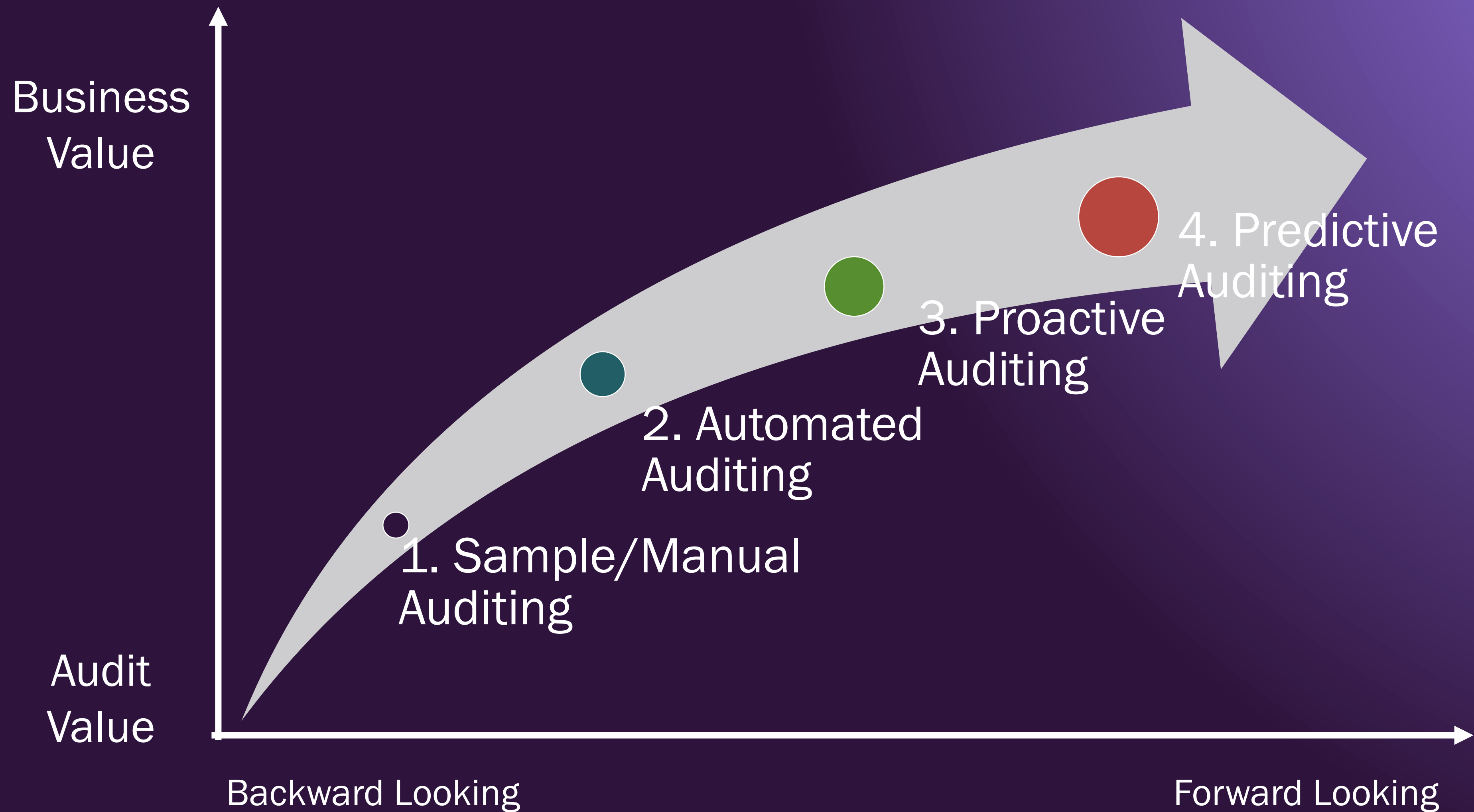


Today I internally announced the addition of three new Analytics team members. One of them is a bot! Her name is Penny and here is the announcement:

Penny: IADAR4 is an intelligent 350 coding line digital robot programmed by [data analyst name]. Penny started last week and her role is to grab expense IDs flagged by risk and prediction models. Penny traces underlying transaction documents within Concur such as receipts, comment history, warnings, credit card details, approval history, and employee comments and puts everything into a single PDF file for the auditor to review. Penny can process up to 500 transactions per day and will start working on other areas such as GL, P2P, Clinical Appeals and Account Reconciliations.

- Sr. Director, Data Analytics at a Large Healthcare Provider

Robotics & Automation Maturity Curve



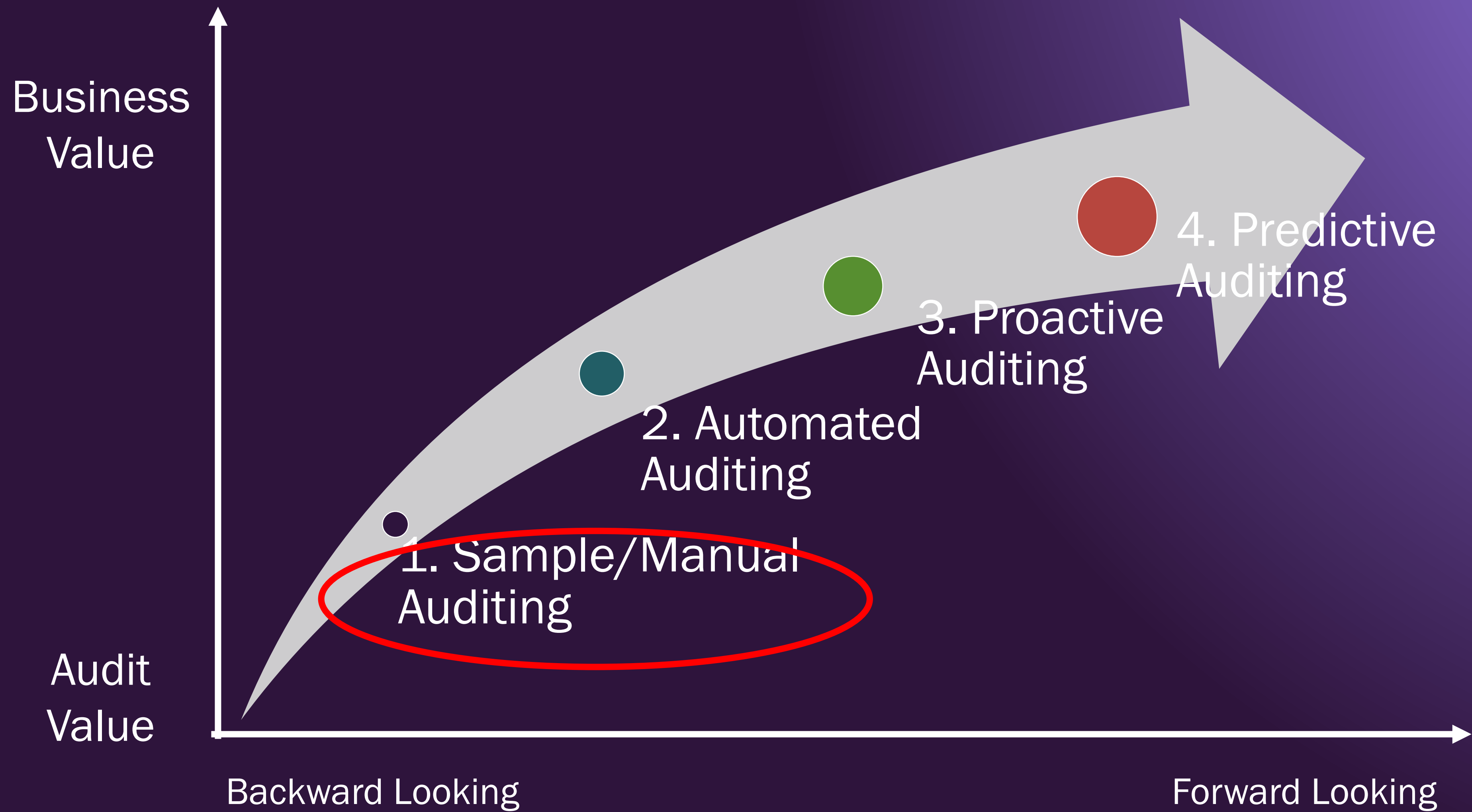


Example – Auditing HR

How can we apply four step maturity curve to be more relevant in a digital landscape for HR?

Actual example from Global 1000 manufacturing company

Maturity Curve – Auditing HR Example





Step 1 - Sample/Manual Auditing

Example control:

All employees must have a background check completed

Example audit procedure:

Select sample of 25 new hires from the list of past year new hires, review evidence and confirm a background check was completed for each.

cybertron.projects.aclgrc-s2.com/audits/12845/objectives/56984/round_one

Projects

HR Process Management and Compliance

Progress To-Dos Requests Timesheets Settings

Search this audit

Dashboard Planning **Fieldwork** Reviews Results Issues

Employee Screening & Onboarding

Overview Narratives Risk Control Matrix Walkthroughs Test Plan **Testing**

Test Details

HRP-1	Third-party employee background checks The HR department conducts a third party background check of all employees before their active start date. Checks are reviewed for discrepancies between an applicant's claims and what is reported by schools, prior employers, etc. for negative reports such as a bad Driving Record or a Criminal History that would impact the applicant's job qualifications. Control Definition Walkthrough Test Plan Testing Associated Risk: HRP-02
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Test Plan: A sample of 25 will be tested using the INSPECTION testing method.

[Edit](#)

Are you testing this Control as part of this testing round?
Selecting "No" will mark this Control as N/A for this round of testing.

Yes

User Assigned

Testing Results

Citation Mode ? Highlights 0 Links 3

Exception(s) Noted

The Testing Results for this Control has been set to Exception(s) Noted.
You can add Issues to capture the reasons for this result.

Issue List

Requests

To-Dos

Time Tracking

cybertron.projects.aclgrc-s2.com/audits/12845/objectives/56984/round_one

Testing Results

Citation Mode ⓘ Highlights 0 Links 3

Format | **B** *I* U A **S** *I*_x | :≡ ≡≡ | ≡≡ ≡≡ | ”” | ≡≡ ≡≡ ≡≡ ≡≡ | ≡≡ ≡≡ | ≡≡ ≡≡

Procedure:

We pulled a complete listing of all new hires to date in 2018 and selected a sample of 25 employees to validate that a background check had been appropriately completed. We also checked the background check results were appropriate to the relevant job position.

Sample Selected:

Employee IDs selected for testing included the following. Each was compared to a data export directly from TruCheck to validate the employee had in fact been checked prior to starting employment.

1. 41764678 - Background check completed w/o issue
2. 26944954
3. 53889908
4. 67362385
5. 17514220
6. 18861467
7. 29639449

Words: 95

Did this Control operate effectively?

Testing conclusion

Exception(s) Noted ⓘ Automation Error

Save

Supporting Files

cybertron.projects.aclgrc-s2.com/audits/12845/objectives/56984/round_one

Examine File

Search file for clippings to add

Page: 2 of 195 Automatic Zoom

Closed	Phil Lim	2018-10-14T07:10:02+00:00	30	40417431	True	Male	21	Research Scientist
Closed	Phil Lim	2018-10-14T07:10:02+00:00	31	41764678	True	Male	34	Research Scientist
Closed	Phil Lim	2018-10-14T07:10:02+00:00	32	43111926	True	Female	53	Manager
Closed	Phil Lim	2018-10-14T07:10:02+00:00	33	44459174	True	Female	32	Research Scientist
Closed	Phil Lim	2018-10-14T07:10:02+00:00	35	47153660	True	Male	42	Sales Executive
Closed	Phil Lim	2018-10-14T07:10:02+00:00	36	48500917	True	Female	44	Healthcare Representative
Closed	Phil Lim	2018-10-14T07:10:02+00:00	38	51195412	True	Female	46	Manager
Closed	Phil Lim	2018-10-14T07:10:02+00:00	39	52542660	True	Male	33	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	40	53889908	True	Male	44	Healthcare Representative
Closed	Phil Lim	2018-10-14T07:10:02+00:00	41	55237155	True	Male	30	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	42	56584403	True	Male	39	Sales Representative
Closed	Phil Lim	2018-10-14T07:10:02+00:00	45	60626146	True	Male	24	Research Scientist
Closed	Phil Lim	2018-10-14T07:10:02+00:00	46	61973394	True	Female	43	Research Scientist
Closed	Phil Lim	2018-10-14T07:10:02+00:00	47	63320641	True	Male	50	Sales Representative

File Information

Originally attached to [HRP-1 Testing](#)

Download referenced file [Employee_Background_Checks_Export.pdf](#)

Text being cited

"41764678"

Clippings 1

Reference an image or part of a spreadsheet by first holding down the ALT key, then click and drag over an area.

"41764678True"

Page 1

Unlink File as Evidence

Closed	Phil Lim	2018-10-14T07:10:02+00:00	49	66015137	True	Female	35	Sales Representative
Closed	Phil Lim	2018-10-14T07:10:02+00:00	51	68709632	True	Female	36	Research Scientist
Closed	Phil Lim	2018-10-14T07:10:02+00:00	52	70056880	True	Female	33	Sales Executive
Closed	Phil Lim	2018-10-14T07:10:02+00:00	53	71404128	True	Male	35	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	54	72751375	True	Female	27	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	55	74098623	True	Male	26	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	56	75445871	True	Male	27	Sales Executive
Closed	Phil Lim	2018-10-14T07:10:02+00:00	57	76793118	True	Female	30	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	58	78140366	True	Female	41	Research Director
Closed	Phil Lim	2018-10-14T07:10:02+00:00	60	80834862	True	Male	34	Sales Executive
Closed	Phil Lim	2018-10-14T07:10:02+00:00	61	82182109	True	Male	37	Research Scientist
Closed	Phil Lim	2018-10-14T07:10:02+00:00	62	83529357	True	Male	46	Sales Executive
Closed	Phil Lim	2018-10-14T07:10:02+00:00	63	84876605	True	Male	35	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	64	86223852	True	Male	48	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	65	87571100	True	Male	28	Laboratory Technician
Closed	Phil Lim	2018-10-14T07:10:02+00:00	68	91612843	True	Female	44	Sales Executive
Closed	Phil Lim	2018-10-14T07:10:02+00:00	70	94307339	True	Male	35	Healthcare Representative
Closed	Phil Lim	2018-10-14T07:10:02+00:00	72	97001834	True	Female	26	Sales Executive
Closed	Phil Lim	2018-10-14T07:10:02+00:00	73	98349082	True	Female	33	Research Director
Closed	Phil Lim	2018-10-14T07:10:02+00:00	74	99696239	True	Male	35	Sales Executive

Step 1 - Sample/Manual Auditing



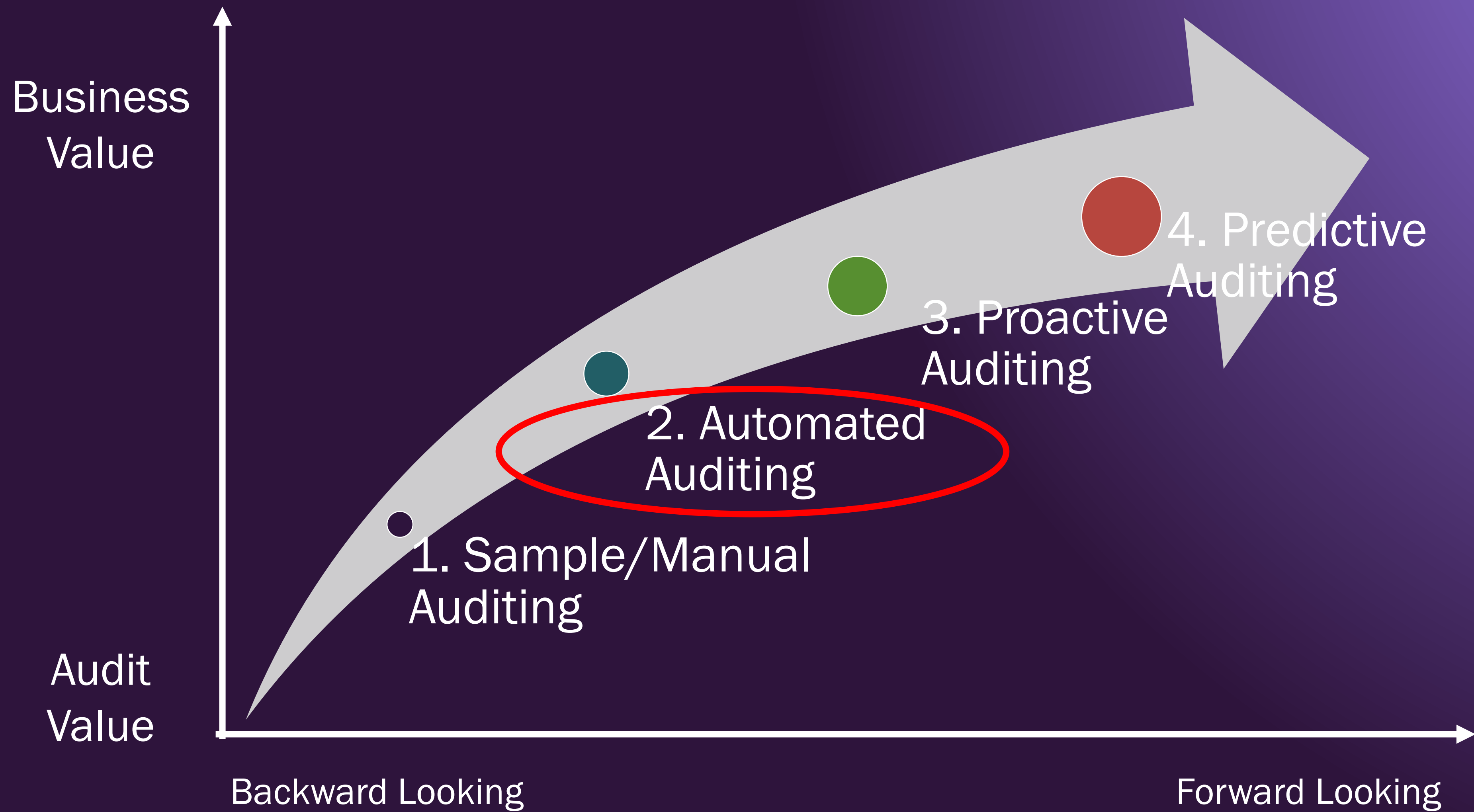
Pros:

- Meets their SOX testing requirement

Cons:

- Actually a poor level of assurance (many actual exceptions were missed)
- Little to no value provided to the business
- 24 hours of auditor time was invested annually in this very tactical issue

Maturity Curve – Auditing HR Example





Step 2 – Automated Auditing

Example control:

All employees must have a background check completed

Example audit procedure:

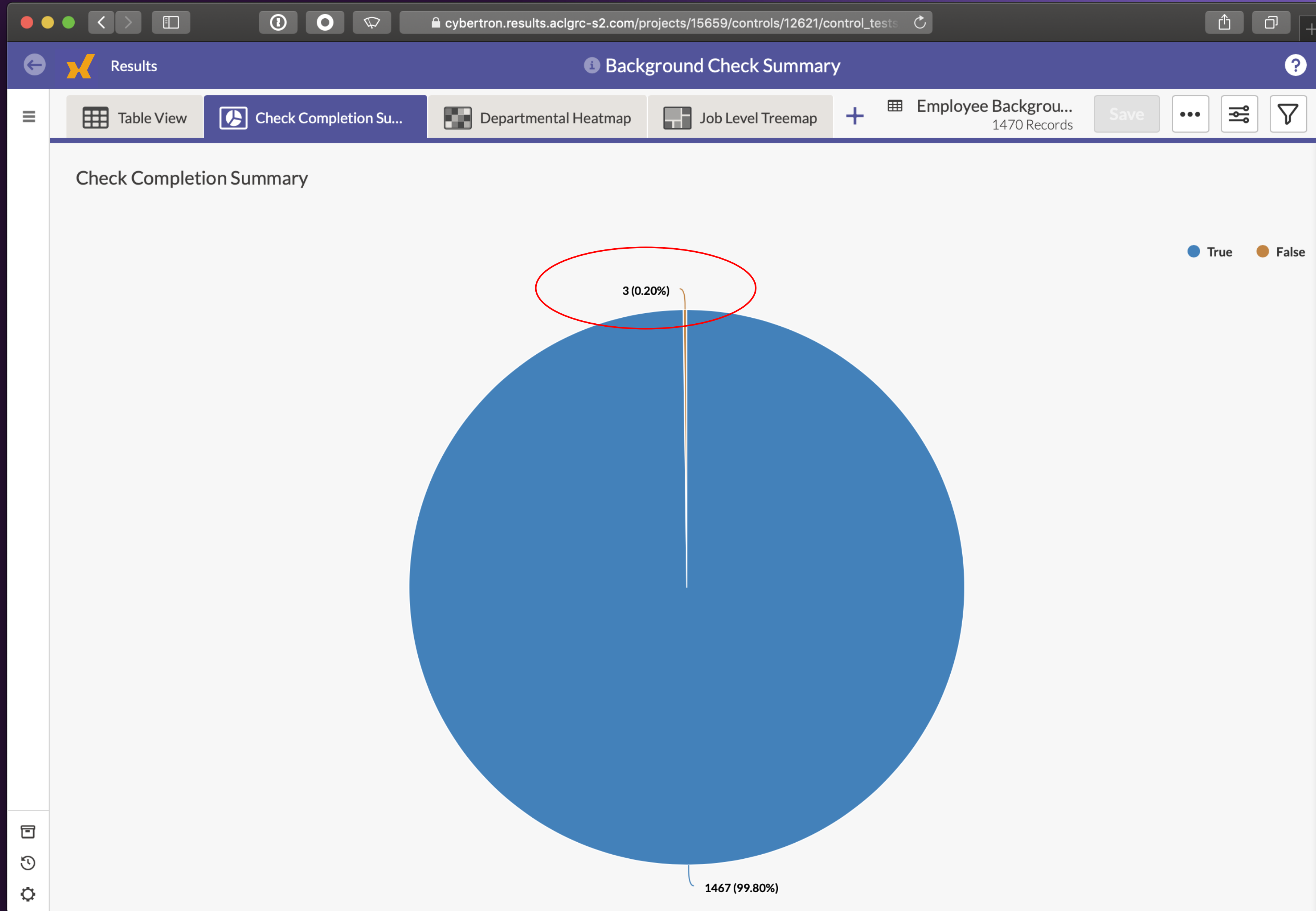
Use data automation technology to extract list of all new employees from PeopleSoft (HRIS) and compare to background check log provided by background check vendor for employees with no background check or results outside of hiring policy

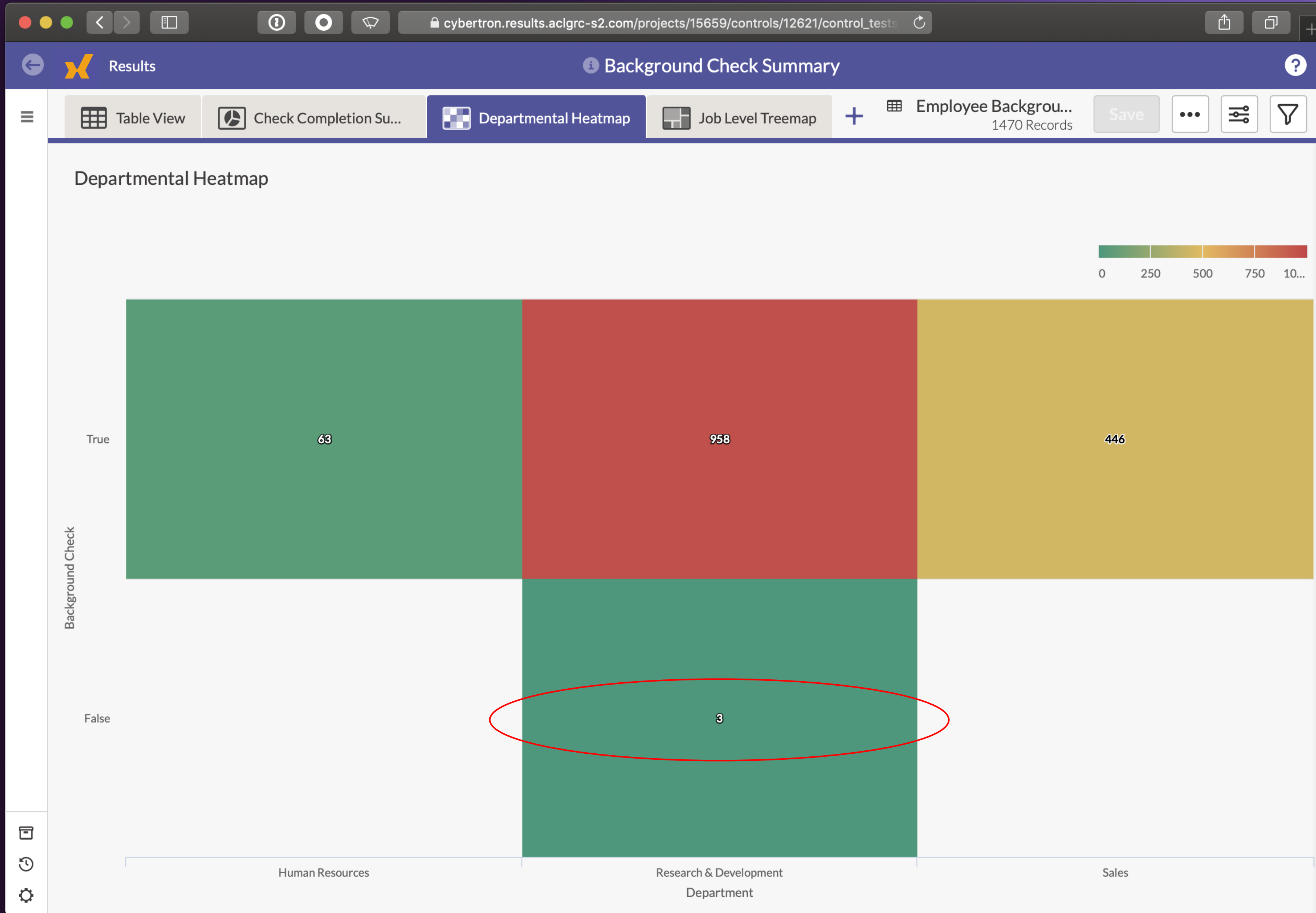
cybertron.results.aclgrc-s2.com/projects/15659/controls/12621/control_tests

Results Background Check Summary

Table View Check Completion Su... Departmental Heatmap Job Level Treemap Employee Backgrou... 1470 Records Save

	<input type="checkbox"/>	# EmployeeNumber	Aa Background Check	# JobLevel	# Age	Aa Attrition	Aa BusinessTravel
167	<input type="checkbox"/>	227	True	1	41	No	Travel_Rarely
168	<input type="checkbox"/>	228	True	3	30	No	Travel_Rarely
169	<input type="checkbox"/>	230	True	2	38	No	Travel_Rarely
170	<input type="checkbox"/>	231	True	1	32	No	Travel_Rarely
171	<input type="checkbox"/>	233	True	1	27	No	Travel_Rarely
172	<input type="checkbox"/>	235	True	1	19	Yes	Travel_Frequently
173	<input type="checkbox"/>	238	True	1	36	No	Travel_Frequently
174	<input type="checkbox"/>	239	True	2	30	No	Non-Travel
175	<input type="checkbox"/>	240	True	2	45	No	Travel_Rarely
176	<input type="checkbox"/>	241	True	1	56	No	Travel_Rarely
177	<input type="checkbox"/>	242	True	1	33	No	Travel_Rarely
178	<input type="checkbox"/>	243	True	1	19	Yes	Travel_Rarely
179	<input type="checkbox"/>	244	True	3	46	No	Travel_Rarely
180	<input type="checkbox"/>	245	True	1	38	No	Travel_Rarely
181	<input type="checkbox"/>	246	True	1	31	No	Travel_Rarely
182	<input type="checkbox"/>	247	True	1	34	No	Travel_Rarely
183	<input type="checkbox"/>	248	True	1	41	Yes	Travel_Rarely
184	<input type="checkbox"/>	249	True	1	50	No	Travel_Rarely
185	<input type="checkbox"/>	250	True	2	53	No	Travel_Rarely
186	<input type="checkbox"/>	252	True	1	33	No	Travel_Rarely
187	<input type="checkbox"/>	253	True	5	40	No	Travel_Rarely
188	<input type="checkbox"/>	254	True	5	55	No	Travel_Rarely
189	<input type="checkbox"/>	256	True	2	34	No	Travel_Frequently
190	<input type="checkbox"/>	258	True	4	51	No	Travel_Rarely
191	<input type="checkbox"/>	259	False	5	52	No	Travel_Rarely
192	<input type="checkbox"/>	260	True	1	27	No	Travel_Rarely
193	<input type="checkbox"/>	261	True	2	35	Yes	Travel_Rarely
194	<input type="checkbox"/>	262	True	1	42	No	Non-Travel





cybertron.results.aclgrc-s2.com/projects/15659

Results

Cybertron, In

Notify on Exception

Conditions

If these conditions apply:

Record Metric

Condition is Background Check contains False

+ Add

+Group

Actions

Then perform these actions:

Assign Notify Questionnaire Status Priority

Notify Nonie Dalton

Assign Users Group - Unassigned - Assignee Phil Lim

Frequency

Using the following frequency:

Real-time Only for new records

Real-time Schedule

Save Save & Preview Cancel

cybertron.results.aclgrc-s2.com/projects/15659

Results

Cybertron, Inc. / HR Employee Analysis

Collection Settings | Collection Members (12) | Questionnaires | New Analysis

Employee Behavior Analysis

Analysis Settings | New Table

Triggers – Employee Background Check

New X

Triggers execute sequentially from top to bottom.

<input checked="" type="checkbox"/> Notify on Exception	Last run Oct 16, 2018, 3:01 am		
<input checked="" type="checkbox"/> Assign to HR Manager to complete background check	Last run Oct 29, 2018, 12:01 am		
<input checked="" type="checkbox"/> Verify completion and approval	Last run Oct 29, 2018, 12:01 am		
<input checked="" type="checkbox"/> Close approved background checks	Last run Oct 29, 2018, 3:02 am		

Source data

Employee Data

Data Analytic Settings

Remediate	Indicate	Automate
1470	0	0

Search or enter website name

Results

Background Check Completion

1470 Records Save ... Filter

	Aa Priority	Aa Status	🕒 Published	Aa Publisher Name	Aa
1	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
2	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
3	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
4	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
5	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
6	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
7	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
8	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
9	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
10	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
11	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
12	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
13	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
14	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
15	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
16	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
17	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
18	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
19	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
20	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
21	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
22	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
23	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
24	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
25	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
26	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH
27	Low	Closed	Oct 14, 2018 6:10:05 AM	Shahed Khalili	PH

99.8%

Show Sparkline

Show Triggers Manage Triggers

Measure Field
Aa Background Check

Format Options...

Date/Datetime Range
🕒 Published

Period
Yearly

Function
 Unique Values 2
 Blanks 0
 % of Total

Contains
True

cybertron.projects.aclgrc-s2.com/audits/12845/objectives/56984/round_on

Testing Results

Citation Mode ⓘ

Format | **B** | *I* | U | A | ~~S~~ | Z

Procedure:

We pulled a complete listing of all new hires check had been appropriately completed. We position.

Sample Selected:

Employee IDs selected for testing included the employee had in fact been checked prior

1. 41764678 - Background check comp
2. 26944954
3. 53889908
4. 67362385
5. 17514220
6. 18861467
7. 29639449

Words: 95

Did this Control operate effectively?
Testing conclusion

Exception(s) Noted Automated

Save

Supporting Files

Edit Assessment Driver

Fieldwork Employee Screening & Onboarding

Control HRP-1: Third-party employee background checks

Automating Testing

Metric Background Check Completion

BACKGROUND CHECK COMPLETION KPI

99.8%

greater than > 100 = Operating Effectively

less than or equal to ≤ 100 = Exception(s) Noted

Enable Assessment Driver ⓘ

Save [Cancel](#) Delete

cybertron.robots.aclgrc-s2.com/development/12/tasks

X

Dashboard
Dave (HR Robot)

Tasks Task Runs Script Versions Input/Output Open Robot in AN Dev mode

Robot Tasks Create Task

Daily background check
Publishing Locally

Latest Results
Success 3 minutes ago View Latest Results

Next Run
Next Thursday at 7:00 AM

Daily employee background check
Publishing Locally

Latest Results
No Task Runs

Next Run
No scheduled runs

Monthly Duplicate Social Security Number Check
Publishing Locally

Latest Results
No Task Runs

Next Run
No scheduled runs

Monitor Employees with Same Address
Publishing Locally

Task run Details

Daily background check

Result Success

Date 2018-10-29 1:02 AM

Start Time 2018-10-29 1:02 AM

Duration 0 minutes

Robot Version

View in Results Open in Analytics

Analytics Component



Step 2 – Automated Auditing

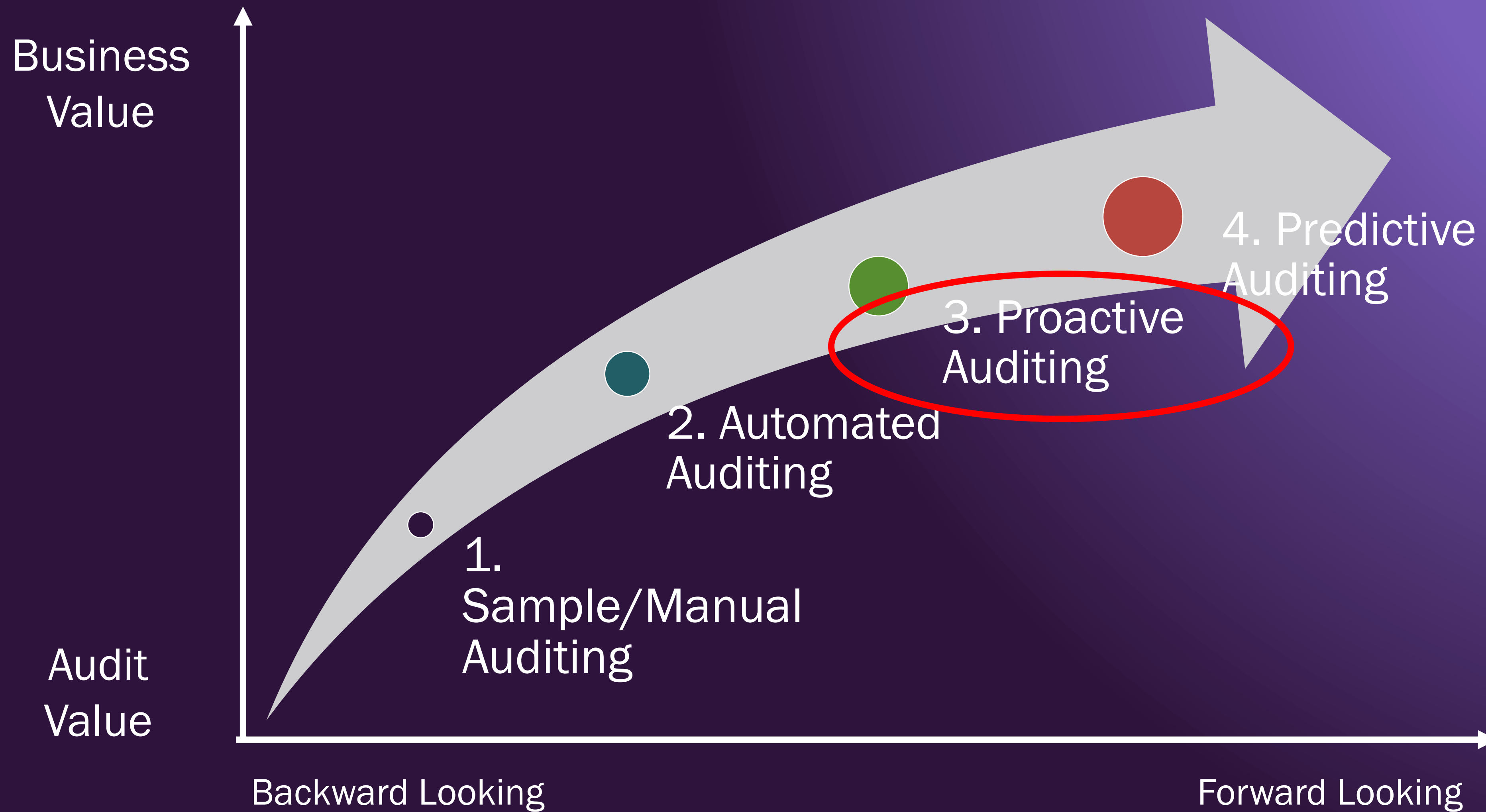
Pros:

- Meets (and fully automates) their SOX testing requirement
- Excellent level of assurance
- Testing now completed in less than 30 minutes each quarter
- Impressed CFO – “Robotic Process Automation” of repetitive testing provides “Timely Assurance”

Cons:

- Still good be more valuable to the business
- Still identifying a few exceptions each quarter

Maturity Curve – Auditing HR Example





Step 3 – Proactive Auditing

Example control:

All employees must have a background check completed

Example audit approach:

Use automation technology to extract list of all new selected candidates (before hiring completion) from PeopleSoft, notify HR of need for background check control procedure, track completion as control evidence, and notify audit of any deviation in real-time

cybertron.projects.aclgrc-s2.com/mission_control

Mission Control

Cybertron, Inc.

Search Controls

Control Design

Search Control ID or Description

Control Design: X, ✓, ...

All Owners

All Processes

All Projects

Reset

Control ID	Description	Control Design	Control Tasks	Overdue	Owner	Process	Project
HRP-1	Third-party employee background checks	✓		84	Phil Lim	Employee Screening & Onboarding	HR Process Management and Compliance
HRP-2	Payroll master file change requests	X		14	Phil Lim	Employee Screening & Onboarding	HR Process Management and Compliance
HRP-3	Payroll register report processing	✓			Phil Lim	Employee Screening & Onboarding	HR Process Management and Compliance
HRP-4	Accrued vacation tracking	✓		15	Phil Lim	Employee Screening & Onboarding	HR Process Management and Compliance
HRP-5	Payroll provider form processing	✓		15	Phil Lim	Employee Screening & Onboarding	HR Process Management and Compliance
HRP-6	Employee salaries paid per existing employment agreements	✓			Phil Lim	Employee Screening & Onboarding	HR Process Management and Compliance
HRP-7	Monthly compliance reviews	✓			Phil Lim	Employee Screening & Onboarding	HR Process Management and Compliance
HRP-8	HR system user access privileges	✓			Daniel Wu	Employee Screening & Onboarding	HR Process Management and Compliance

cybertron.projects.aclgrc-s2.com/mission_control/audits/12845/objectives/5

Third-party employee background checks

Control ID	Description
HRP-1	The HR department conducts a third party background check of all employees before their active start date. Checks are reviewed for discrepancies between an applicant's claims and what is reported by schools, prior employers, etc. for negative reports such as a bad Driving Record or a Criminal History that would impact the applicant's job qualifications.

Walkthrough Attributes

Walkthrough Results

Walkthrough Results

Is the control designed appropriately?

Designed Appropriately

Supporting Files

Control Performance

Control Task Status ⓘ

Overdue Control Tasks

84

Not Started Complete

Show Overdue Only

Third-party employee background checks

Supporting Files

Control Performance Control Task Schedule

Control Task Status ⓘ

0 3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96 99

■ Not Started ■ Complete

Overdue Control Tasks **84**

Show Overdue Only

Performer	Schedule	Frequency	Status	Timeline
Shahed Khalili	Release payroll setup	Daily	Not Started (resend)	10/15/2018 (respond)
Dan Zitting	Release payroll setup	Daily	Not Started (resend)	10/15/2018
Phil Lim	Release payroll setup	Daily	Not Started (resend)	10/16/2018
Dan Zitting	Employee Background Check Completion	Daily	Not Started (resend)	10/16/2018
Phil Lim	Employee Background Check Completion	Daily	Not Started (resend)	10/16/2018
Dan Zitting	Release payroll setup	Daily	Not Started (resend)	10/16/2018
Shahed Khalili	Release payroll setup	Daily	Not Started (resend)	10/16/2018 (respond)
Shahed Khalili	Employee Background Check Completion	Daily	Not Started (resend)	10/16/2018 (respond)
Dan Zitting	Employee Background Check Completion	Daily	Not Started (resend)	10/17/2018
Shahed Khalili	Employee Background Check Completion	Daily	Not Started (resend)	10/17/2018 (respond)

< | 1 | **2** | 3 | 4 | 5 | ... | 10 | >

cybertron.results.aclgrc-s2.com/questionnaire_responses/3ETe2zKs6XsDP9

Employee Onboarding - Background Check Completion

Cybertron, Inc.

Instructions

Control Description

The HR department conducts a third party background check of all employees before their active start date. Checks are reviewed for discrepancies between an applicant's claims and what is reported by schools, prior employers, etc. for negative reports such as a bad Driving Record or a Criminal History that would impact the applicant's job qualifications.

Control Procedure

Complete an employee background check for each new hire and review the check for appropriateness by:

1. Submit the background check to TruCheck for processing
2. Validate the results of the background check meet the employee screening policy for the job role being hired
3. Sign the certification to evidence performance of the control

[Complete Background Check Task](#)

Record Details

Recipient
shahed_khalili@acl.com

Control ID
304682


Has a background check through TruCheck been completed

Yes
 No

Does the background check outcome fit the requirements of the job role?

Yes
 No

Please sign to certify your review.



2018-10-29 shahed_khalili@acl.com [Clear](#)

Step 3 – Proactive Auditing



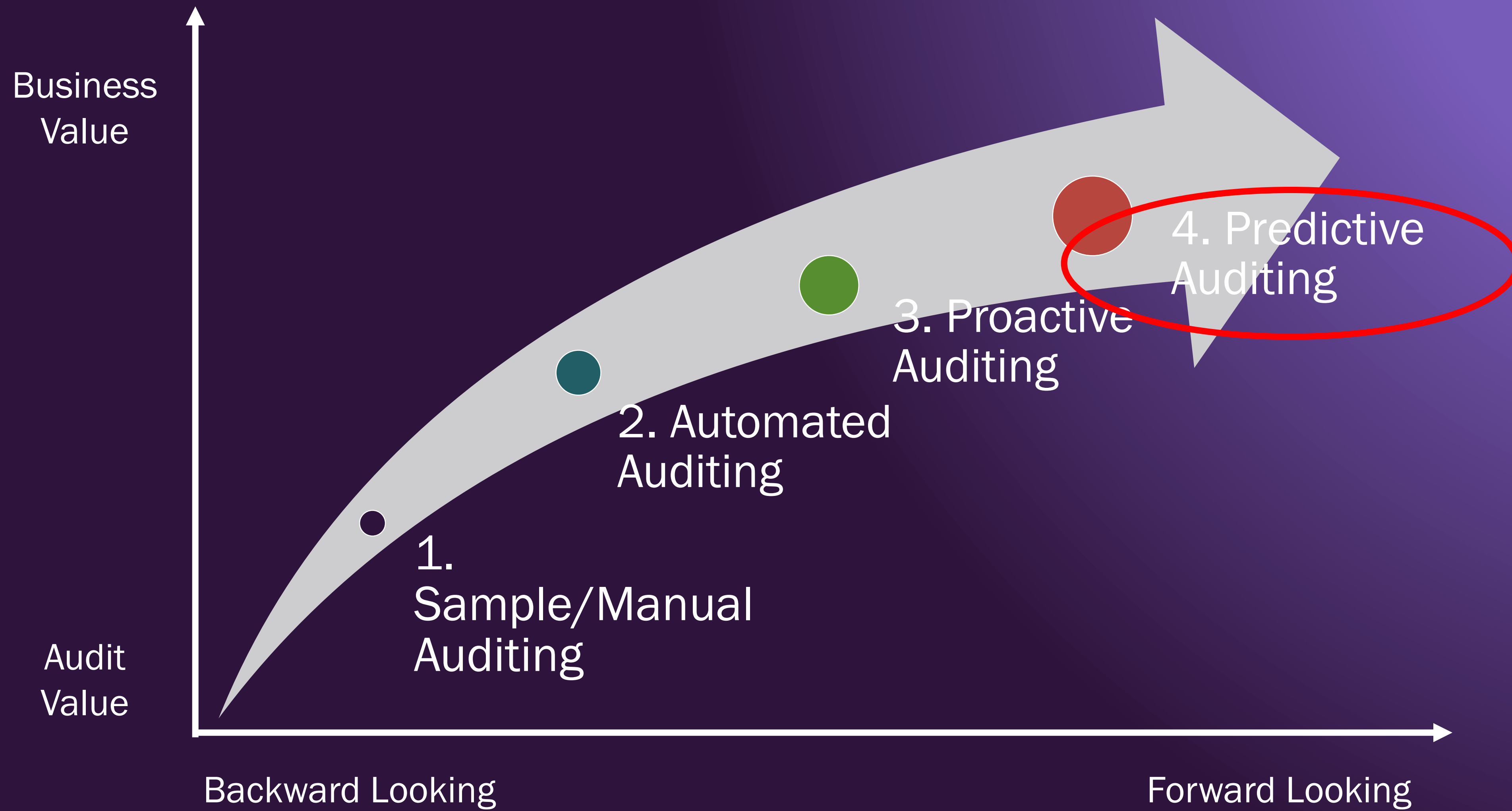
Pros:

- Meets their SOX testing requirement, excellent level of assurance, testing now completed in less than 5 minutes each quarter
- Impressed CFO – “Robotic Process Automation” of repetitive testing provides “Timely Assurance”
- Impressed HR – They have help in doing their job and proactively following processes & policies
- Effectively “audit-proofed” the control

Cons:

- None

Maturity Curve – Auditing HR Example





Step 4 – Predictive Auditing

Example scenario:

All historical HR controls were converted to automated or proactive auditing

- Over 400 hours of auditor time freed up annually
- Reinvested time back into HR to address their most strategic risk area – talent retention



Step 4 – Predictive Auditing

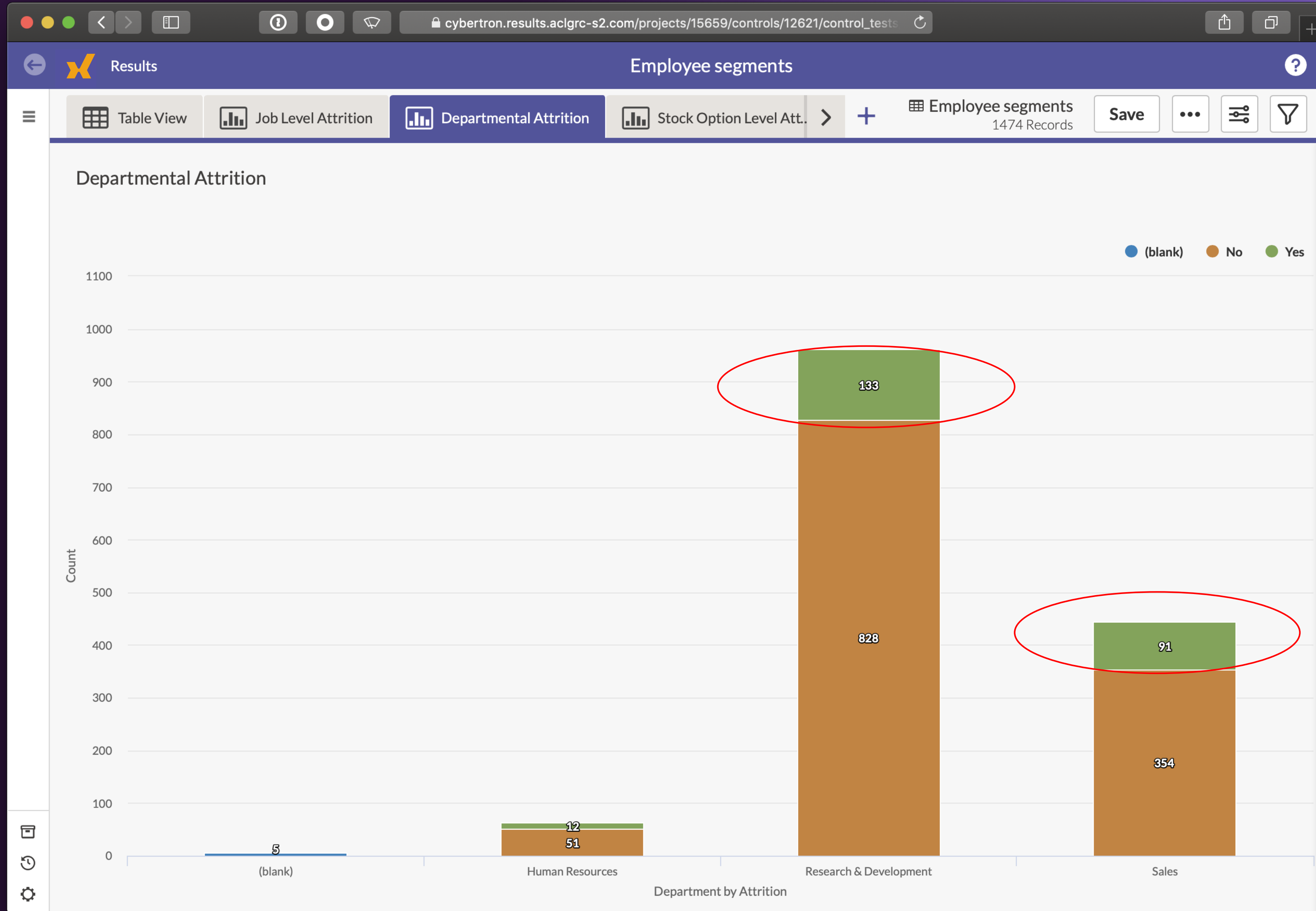
Example audit approach:

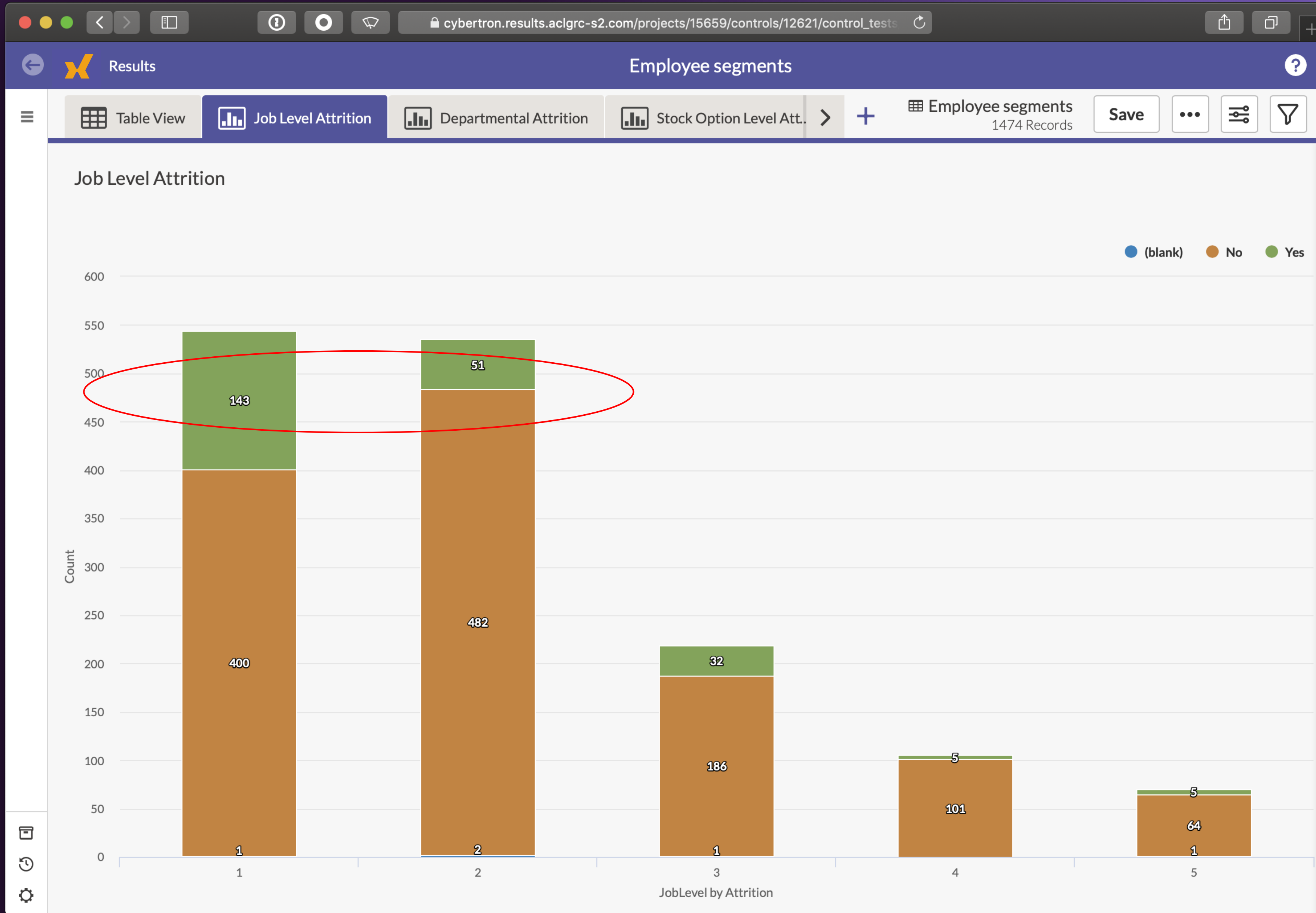
Use machine learning technology to look at broad employee profile data, identify what factors contribute actually drive attrition, and use the training and predict commands to identify employees that are most likely to leave

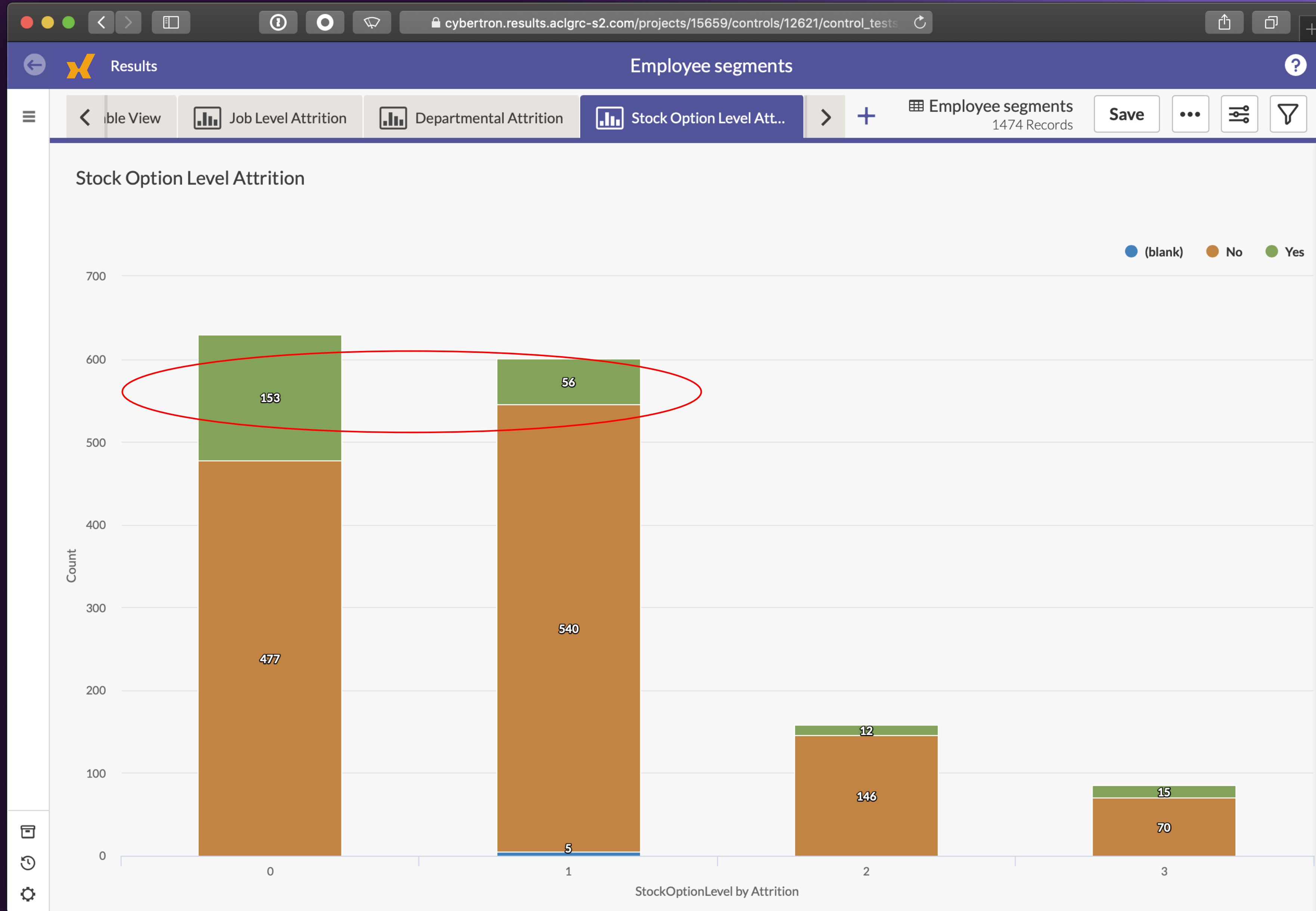


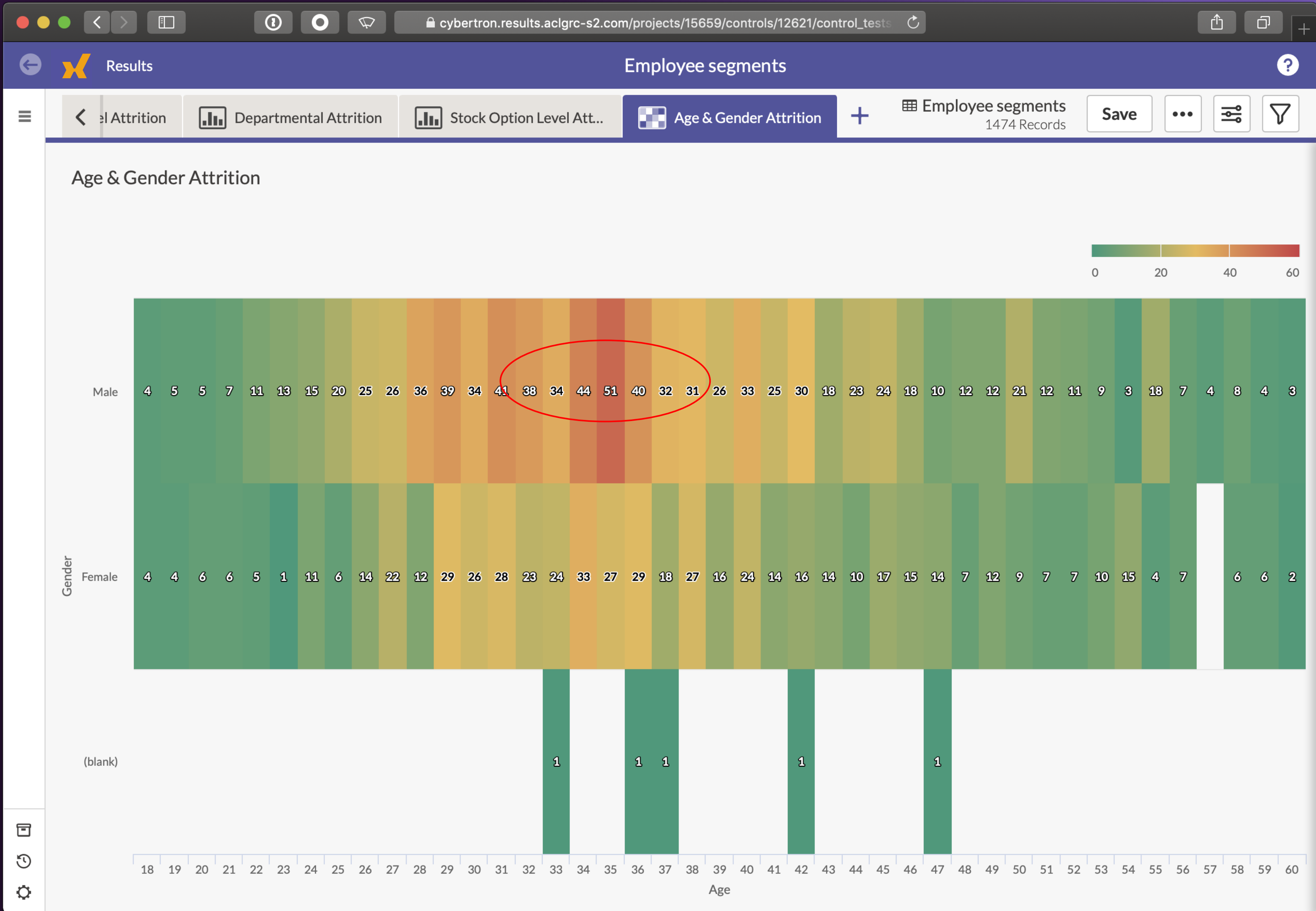
The Difficulty

With multiple potential factors contributing to employees choosing to leave, how do we know which will best predict the future?







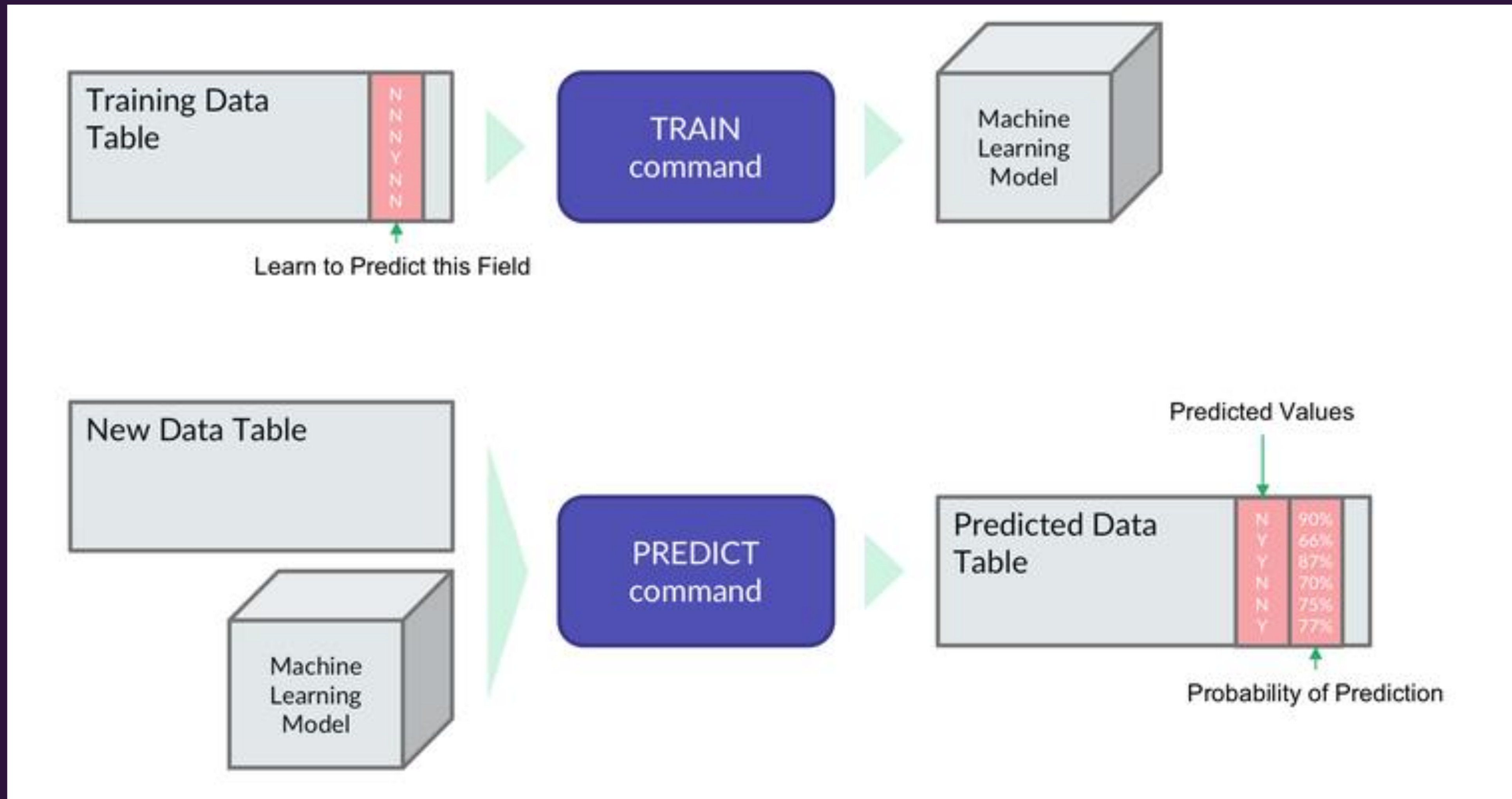




The Solution

Using supervised machine learning we can determine the attrition potential of employees based on all factors

Supervised Learning – Train and Predict





Training – Models best fit to your data

Several different machine learning algorithms to generate numerous models before selecting a single model best suited to the task

Indicator	Name	Value
Scorer	LOGLOSS	0.3117046988174457800
Metric	ACCURACY	0.7030860203080452342
Metric	AUC	0.8471876582298427660
Metric	F1	0.8740426535762028104
Metric	PRECISION	0.8788900585160460688
Metric	RECALL	0.8877679621625940154



Learning – Finding the relevant factors

Several different machine learning algorithms to generate numerous models before selecting a single model best suited to the task

Coefficient	OverTime_Yes	1.6486274741232294083
Coefficient	BusinessTravel_Travel_Frequently	0.8182612962134666601
Coefficient	JobRole_Laboratory Technician	0.8010671282678250016
Coefficient	BusinessTravel_Non-Travel	-0.7889253407714431621
Coefficient	EducationField_Technical Degree	0.7669147172055955641
Coefficient	Department_Research & Development	-0.7193897784850764587
Coefficient	MaritalStatus_Single	0.5442351438977227618
Coefficient	JobInvolvement	-0.5044896702893627571
Coefficient	JobRole_Sales Representative	0.4654672524583704507
Coefficient	EnvironmentSatisfaction	-0.4102172085533127843
Coefficient	JobSatisfaction	0.3997599696399395319

Prediction - Find high risk employees

	Predicted	Probability	Attrition
1	Yes	0.770818252	Yes
2	No	0.985815549	No
3	Yes	0.769683290	Yes
4	No	0.836612117	No
5	No	0.740346289	No
6	No	0.926567543	No
7	No	0.792404597	No
8	No	0.886821013	No
9	No	0.942905154	No
10	No	0.949178686	No
11	No	0.946273313	No
12	No	0.738785019	No
13	No	0.867045191	No
14	No	0.962642322	No
15	Yes	0.860289429	Yes
16	No	0.972326618	No
17	No	0.897170438	No
18	No	0.846629821	No
19	No	0.992158910	No

Conclusion



The employees that will experience the most attrition in the next year are the employees that worked overtime and traveled frequently

As a result, management:

1. Addressed concerns for high risk employees
2. Proactively engaged managers to engage employees
3. Implemented proactive auditing of employees matching high risk indicators

Step 4 – Predictive Auditing



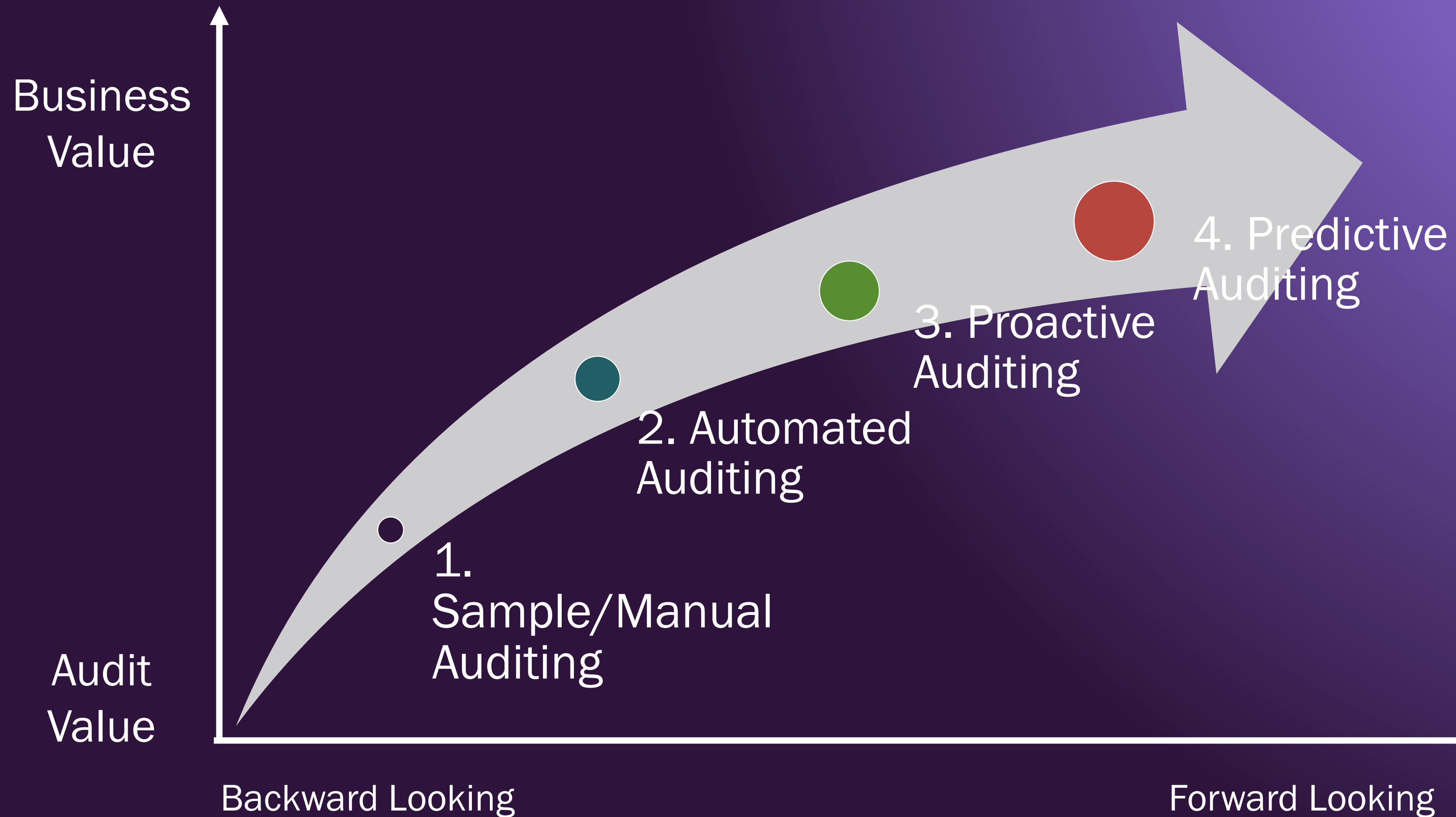
Pros:

- Received real risk intelligence and insight on HR's biggest risk
- Thanks to predictive nature of insight, made changes proactively to improve future performance
- Supported successful presentation and business case to CEO to improve specific employee benefits

Cons:

- Adding too much value?

Staying Relevant in a Digital Landscape





Thank you for leading
the journey!

LinkedIn: [Dan Zitting](#)

