# Verizon Final Report

Cyber Intelligence 4U, Inc.
Basic and Enterprise Cybersecurity Certificate Program®
In conjunction with Rutgers University

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# Disclaimer

Cyber Intelligence 4U (CIU) reserves the right to revise its findings or recommendations in the event the data is incomplete or is discovered to be inaccurate in any way. Cyber Intelligence 4U will not be held liable for recommendations based on inaccurate or incomplete data.

# Contributors

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# Program Background

Verizon has over $130 billion in revenue and over 150 million customers, with multiple subsidiaries. As part of a re-branding into a Tel-tech, Verizon had been developing and acquiring a series of cybersecurity offerings. At the time of the Program, they had over 60 cybersecurity products and services that they were selling to their customers. These included but were not limited to Managed Security Services, Cyber Risk Reporting, Threat Hunting, PCI services, Mobile Device Management (MDM), and DDoS offerings that help companies of varying cybersecurity maturities.

Verizon has over 3,000 sales people globally with a specialized cybersecurity product team of over 70 people. The security product team was charged with the daunting task of tripling cybersecurity sales in the following year. The core sales team was focused on selling wireless, and telecommunication products and services. The majority of the sales team has no cybersecurity background.

# Program Approach & Scope

Verizon has been active on the advisory board for CIU's cybersecurity program since 2018. All course materials are based upon three years of research with the Fortune 1000 and the cyber insurance industry and use a digital asset approach to understand cyber risk and how businesses can be more cyber resilient. The textbook used for the course is 'Managing Cyber Risk' that is based on the research and is authored by the program faculty chairperson. CIU has over 4000 graduates of the Enterprise Cybersecurity program in 2018 and 2019. CIU's programs are now offered at Pace University.

Verizon came to Cyber Intelligence 4U to design a program to fit their requirements. CIU outlined a program where Verizon could meet this goal by turning salespeople into trusted cyber advisors using the Enterprise Cybersecurity Program®. CIU developed a custom program using the foundational elements and adding in a special module based on CIU's cybersecurity maturity research. In this module, CIU mapped the Verizon products to this maturity model and created the custom 'Security Selling = Maturity Selling' module. Note: The maturity matrix is CIU intellectual property. CIU has granted Verizon permission to utilize it in their future sales materials and training, with proper attribution.

CIU developed two programs for Verizon that would allow a 'Basic' education and an advanced 'Enterprise' education. Each module had a set of quizzes that allowed Verizon to gauge the student's retention and comprehension of the materials. Module 1- This module included an data breach case study assignment. Module 4- This module included a rigorous assignment where students picked a prospect and mapped their maturity using a questionnaire and dictated an email to entice the prospect into setting up a meeting to discuss Verizon security offerings. The Basic program has four modules that provide a foundational education including:

- The Evolution of Cybersecurity- Focuses on how cyber is no longer an Information Technology (IT) issue, rather it is a business issue. Introduces cyber strategy and terms. Discusses the history of cybersecurity, cyber risk, breaches, incidents, cyber consequences, cyber trends and spending, and cyber roles.

- Cybersecurity Basics- Focuses on the attack surface, advanced terminology and statistics, enterprise cyber risks of today, regulation and cybersecurity programs.

- Cybersecurity Tools- Discusses policies, tool purposes and usage, and aligns them to the maturity of customers utilizing 25 corporate attributes including but not limited to company and cyber team size, industry, tools, governance model, board involvement, risk and teams skills across 5 mappings: Unaware, Tactical, Focused, Strategic and Pervasive.

- Security Selling = Maturity Selling- Discusses all the customer's security offerings and how they are mapped to the maturity matrix for the identification of the best prospects. It includes a deep dive into the top 10 offerings with several role-playing activities.

## The Enterprise program has all the basic modules plus:

- Regulation and Breach Response- Introduces investigation goals, evidence collection techniques and planning. Discusses cyber response planning, data collection and processing with acceptable law enforcement standards. Focuses on new cybersecurity regulations for companies that are licensed or authorized to do business in various states.

- Forensics- Provides information in all aspects of cyber forensics, allowing students to gain essential understanding of how cyber-crime happens and who is responsible. Students learn how to gather and present evidence as part of various types of investigations.

- NYS Part 500- Focuses on New York State Department of Financial Services cybersecurity law for financial institutions. Looks at scope, history and requirements. A deep dive on the NIST cybersecurity framework is included.

- GDPR- Provides a thorough understanding of scope and each article. CIU focuses on the requirements for the use and collection of privacy data and how to generate the privacy impact assessment (PIA) and how to measure privacy metrics (integrity and confidentiality) for each system that processes privacy data.

- Audit- Provides a deep dive into the world of cyber auditing - the examination of the management controls within an information technology infrastructure that determines if the information systems are safeguarding assets, maintaining data integrity, and operating effectively to achieve the organization's goals or objectives.

- Cyber Intelligence- Examines behavior, threat intelligence and how cyber criminals use the deep and dark web. Students learn about information about threats and threat actors that helps mitigate harmful events in cyberspace.

- Cyber Risk Management- Uses a digital asset approach to quantify cyber exposures and cyber risk scores. 85% of an organization is a digital asset. Therefore, 85% of business value is in digital form. This track is the basis of all the digital asset use cases and demonstrates the algorithms needed to quantify and score the risk exposures and scores that are based on the digital asset and how it is used and protected.

- Cyber Risk Strategy- Demonstrates the use cases using a digital asset approach to quantify cyber exposures and cyber risk scores. These include revealing hidden exposures, quantifying cyber insurance limits, pinpointing extraordinarily high exposures, and identifying gaps in the cybersecurity program and vendor programs.

- Cyber Insurance- Focuses on cyber insurance trends and statistics, cyber risk management in the insurance industry, traditional cyber coverage, coverage gaps, compares first and third-party policies and risk quantification used in cyber insurance.

Each module has a set of quizzes. Module 1 has a data breach case study assignment and Module 4 has a maturity questionnaire, maturity mapping and customer email with the goal of getting an appointment to discuss a Verizon cybersecurity product or solution.

Students or teams were able to have one-on-one discussions with the faculty chair. Students were graded within 5 business days and feedback was given on each assignment. The quizzes were auto graded. Each module was presented in video format with a PowerPoint deck to accompany it. Each module was approximately 3-4 hours of course work. Rutgers University provided a 'Basic Cybersecurity Certificate' or an 'Enterprise Cybersecurity Certificate' for graduates. Verizon was provided weekly reports to load into their systems for tracking in a usable format. Verizon was provided four resources for the program including a faculty chairperson, program manager, student manager and LMS manager. The program was first run as a pilot and then in three waves. The program began on February 27th, 2019 and ended on March 31st 2020.

The program resulted in an increased ability to have an elevated conversation based on the new degree of cyber knowledge that the Verizon employee has learned related to statistics and breaches in an engaging and fruitful manner. They were also able to identify appropriate solutions for their clients based on the maturity mappings.

# Pilot

The in-person pilot team consisted of 60 individuals across a variety of business units with various degrees of cybersecurity understanding. Over a 2-day period, the basic 4 modules were filmed with the initial pilot team. The first three modules had minor editing and were rendered within one week.  The Security Selling = Maturity Selling course went through major revisions and was completed on March 30th. The pilot was then rolled out to 317 more students across all the business units. Virtual kickoff meetings were done for each business unit including VBG, WBM, GLE and Security Product.

# Program Timeline

**Pilot Setup: 2/27/19 to 3/11/19**

- The pilot started 2/27/19
- Filming was done on 2/27/19 and 2/28/19
- Edits to the filming of Modules 1-3 were done the week of 3/1/19 to 3/11/19
- Edits to the filming of Module 4 was completed 3/30/19
- Pilot learners were initially 60 in-person and grew to 377 total with 317 more online.

**Pilot Timeline: 3/11/19 to 4/22/19**

- Virtual kick off for each business unit week of 3/11/19
- Cyber Basics learners – Modules 1-4 - was originally set to 8 weeks until 4/11/19 This was extended until 4/22/19 to incorporate more data points.
- Enterprise Cybersecurity learners – Modules 1-12 or 1-13 – This was for the security product team and was extended to 6/30/19
- 152 online learners completed the pilot Modules 1-4 by 4/22/19

**Pilot Go - No Go Decision: 5/22/19**

- L&D informed CIU that the decision was a Go to continue the program on 5/22/19

**Pilot Residual Learners: 7/1/19**

- Agreed for 227 residual pilot learners to complete Modules 1-4 by 7/1/19

**Post- Pilot Changes: 5/22/19 to 7/1/19**

- CIU partnered with internal Verizon security team to make any necessary revisions to Module 4.
    - Team members included Ashley Ellison, Vijay Vasu, Bonnie Netschert.
    - Changes to Module 4 - VZ team to ensure all Verizon security solution training material is produced internally by VZ specialists.
    - VZ team re-aligned the maturity to their products.
- Program Updates
    - CIU updated all quizzes to a maximum of 15 questions and were auto graded.
    - L&D reviewed and approved the quizzes.
    - CIU continued to manually grade assignments.
    - CIU re-crafted the reporting to fit new requirements from L&D and GLE team.
    - CIU agreed to provide weekly reports to Verizon.
    - The SLA was updated to 2 days for student inquires.

# Student Breakdown

**Pilot: 2/27/19 to 4/22/19**

- 377 students total with 241 Basic and 136 Enterprise from all business units.
- 58% GLE
- 18% WBM
- 17% Product Service
- 5% WBG
- 2% Josh
- 1% CISO

**Wave 1: 9/1/19 to 11/1/19**

- 742 students total with 435 Basic and 307 Enterprise from all business units.
- 67% GLE
- 24% Product Service
- 9% WBM

**Wave 2: 10/1/19 to 12/31/19**

- 869 students total with 704 Basic and 165 Enterprise from all business units.
- 78% GLE
- 20% Product Service
- 1% WBM

**Wave 3: 1/1/20 to 3/31/20**

- 426 students total with 426 Basic and no Enterprise from all business units.
- 100% GLE
- Basic learners only

# Pilot Statistics

Summary

- 63% finished the Pilot- 236 students
- 37% did not finish- 141 students
- Over 85% of the respondents in the pilot survey completed all 4 modules.
- Over 80% said the materials were useful.
- 11% made a cybersecurity sale as a direct result of the program.
- 66% claimed greater confidence in the sales process.
- Over 100 new appointments with decision makers were generated in one month.

| Group | Pilot | | Totals | Basic Grads | Basic Non-Grads | Enterprise Grads | Enterprise Non-Grads | Notes |
|---|---|---|---|---|---|---|---|---|
| | Basic | Enterprise | | | | | | Start 2/27/19 and End 4/22/19 |
| GLE | 166 | 51 | 217 | 59 | 107 | 48 | 3 | |
| WBM | 29 | 39 | 68 | 17 | 12 | 37 | 2 | |
| PS | 24 | 39 | 63 | 14 | 10 | 38 | 1 | |
| WBG | 14 | 4 | 18 | 12 | 2 | 3 | 1 | |
| CISO | 1 | 1 | 2 | 1 | 0 | 1 | 0 | |
| Josh Roberson | 6 | 1 | 7 | 3 | 3 | 1 | 0 | |
| Sub total | 241 | 136 | 377 | 106 | 134 | 128 | 7 | |
| **Totals** | **377** | | | **240** | | **135** | | |
| | | | | | | | | |
| **Graduates** | 107 | 129 | 236 | **63%** | | | | |
| **Non-Graduates** | 134 | 7 | 141 | **37%** | | | | |

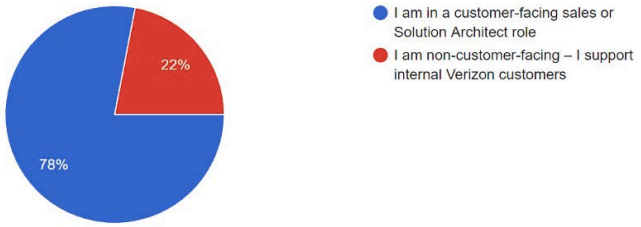
| Group | Basic Non-Grads | 25 % or less to complete | Over 25% to complete | Enterprise Non-Grads | 25 % or less to complete | Over 25% to complete |
|---|---|---|---|---|---|---|
| GLE | 107 | 14 | 93 | 3 | 2 | 1 |
| WBM | 12 | 6 | 5 | 2 | 2 | 0 |
| PS | 10 | 2 | 8 | 1 | 1 | 0 |
| WBG | 2 | 1 | 1 | 1 | 1 | 0 |
| CISO | 0 | 0 | 0 | 0 | 0 | 0 |
| Josh Roberson | 3 | 0 | 3 | 0 | 0 | 0 |
| Sub total | 134 | 23 | 110 | 7 | 6 | 1 |

## The following graphs are from the internal Verizon report about the pilot.

### Question 1

1. Tell us about your role at Verizon:

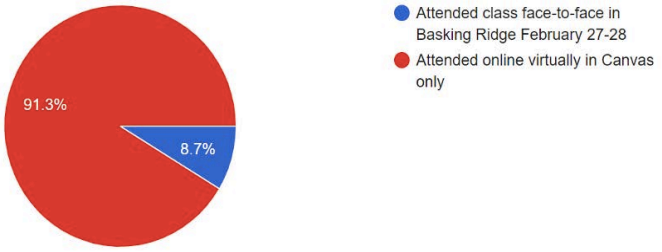
150 responses




### Question 2

2. Did you attend this learning program in-person or virtually on Canvas?

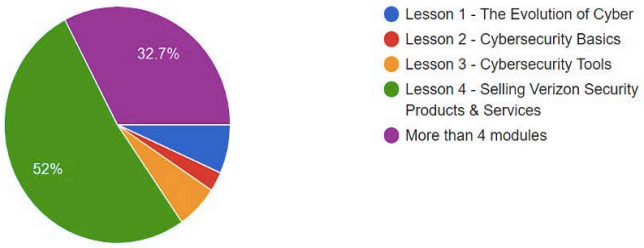
150 responses




### Question 3

3. Which modules did you successfully complete in this pilot?

150 responses

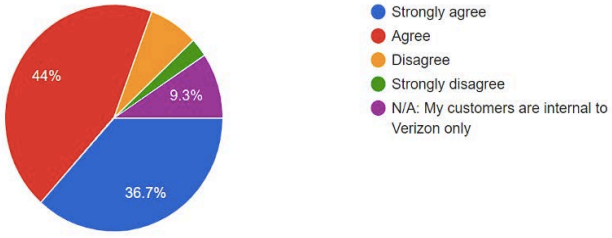



85% of responders completed all 4 modules of the program (at a minimum)

### Question 4

4. What I learned about cybersecurity in this learning program will prove useful in selling to customers.

150 responses

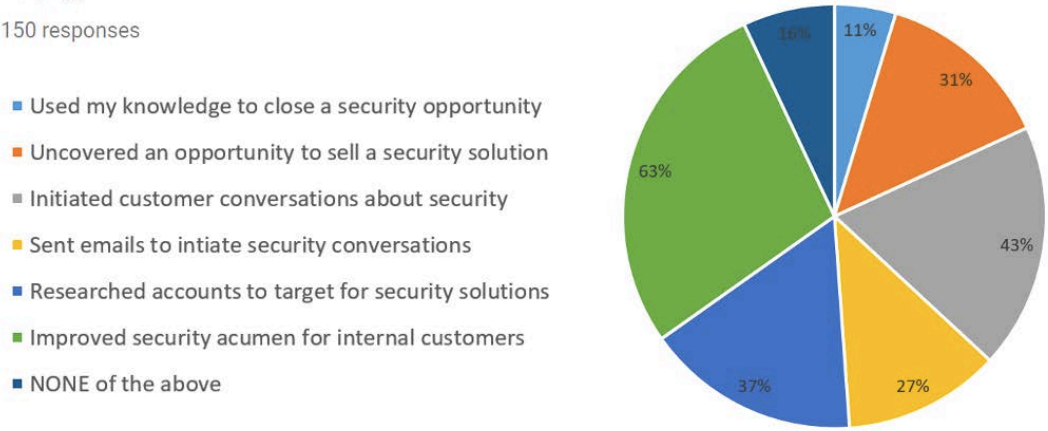



80% agreed that the content is useful

## Question 5

5. As a result of this learning program, I have (choose all boxes that apply):

150 responses

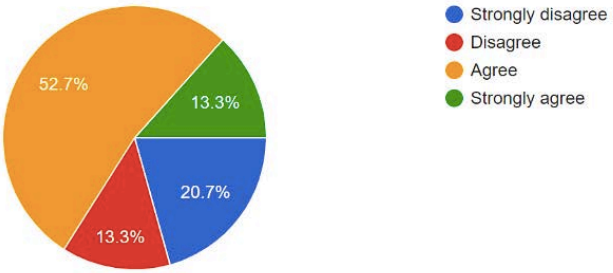



**11% closed a security opportunity as a result of the course**

## Question 7

7. As a result of this learning program, I have greater confidence to speak with security decision-makers (ex. CISO, CIO, Auditors, Compliance Managers, CRO…) within my accounts.

150 responses

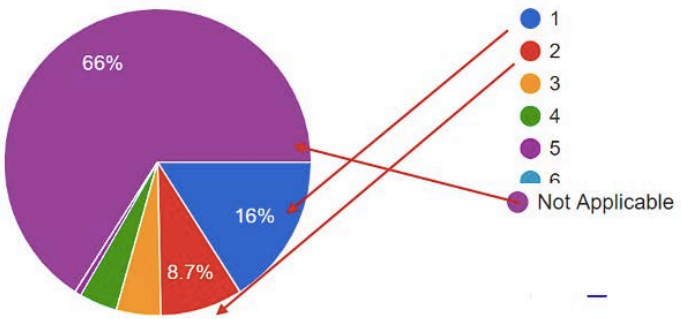



**66% claim greater confidence on appointments**

## Question 8

8. As a result, I have scheduled ___ new appointments with security decision-makers (ex. CISO, CIO, Auditors, Compliance Managers, CRO…) within my accounts.

150 responses




Respondents have scheduled **100 new security appointments** with security decision makers

# Wave 1 Statistics

**Summary**

- 74% finished Wave 1- 547 students
- 26% did not finish- 195 students
- 95% of Basic students were from GLE
- 57% of Enterprise students were from Product Services
- Average quiz grade was 85%
- Average Assignment 1 Data Breach Study grade was 90%
- Average Assignment 4 Maturity Questionnaire, Mapping and Email was 87%

| Group | Pilot | | Totals | Basic Grads | Basic Non-Grads | Enterprise Grads | Enterprise Non-Grads | Notes |
|---|---|---|---|---|---|---|---|---|
| | Basic | Enterprise | | | | | | Start 9/1/19 and End 10/31/19 |
| GLE | 416 | 81 | 497 | 307 | 109 | 57 | 24 | |
| WBM | 18 | 47 | 65 | 11 | 7 | 37 | 10 | |
| PS | 0 | 176 | 176 | 0 | 0 | 133 | 43 | |
| WBG | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| L&D | 1 | 3 | 4 | 0 | 1 | 2 | 1 | |
| Sub total | 435 | 307 | 742 | 318 | 117 | 229 | 78 | |
| **Totals** | **742** | | | **435** | | **307** | | |
| | | | | | | | | |
| **Graduates** | 318 | 229 | 547 | **74%** | | | | |
| **Non-Graduates** | 117 | 78 | 195 | **26%** | | | | |

| Group | Basic Non-Grads | 25 % or less to complete | Over 25% to complete | Enterprise Non-Grads | 25 % or less to complete | Over 25% to complete |
|---|---|---|---|---|---|---|
| GLE | 109 | 19 | 90 | 24 | 2 | 22 |
| WBM | 7 | 0 | 7 | 10 | 1 | 9 |
| PS | 0 | 0 | 0 | 43 | 3 | 40 |
| WBG | 0 | 0 | 0 | 0 | 0 | 0 |
| L&D | 1 | 0 | 1 | 1 | 0 | 1 |
| Sub total | 117 | 19 | 98 | 78 | 6 | 72 |

# Wave 2 Statistics

**Summary**

- 55% finished Wave 2- 482 students
- 45% did not finish- 387 students
- 82% of Basic students were from GLE
- 63% of Enterprise students were from GLE
- Average quiz grade was 85%
- Average Assignment 1 Data Breach Study grade was 89%
- Average Assignment 4 Maturity Questionnaire, Mapping and Email was 80%

| Group | Pilot | | Totals | Basic Grads | Basic Non-Grads | Enterprise Grads | Enterprise Non-Grads | Notes |
|---|---|---|---|---|---|---|---|---|
| | Basic | Enterprise | | | | | | Start 11/1/19 and End 12/31/19 |
| GLE | 576 | 104 | 680 | 299 | 277 | 59 | 45 | |
| WBM | 3 | 6 | 9 | 0 | 3 | 6 | 0 | |
| PS | 125 | 50 | 175 | 73 | 52 | 40 | 10 | |
| Consumer | 0 | 5 | 5 | 0 | 0 | 5 | 0 | |
| Sub total | 704 | 165 | 869 | 372 | 332 | 110 | 55 | |
| **Totals** | **869** | | | **704** | | **165** | | |
| | | | | | | | | |
| **Graduates** | 372 | 110 | 482 | **55%** | | | | |
| **Non-Graduates** | 332 | 55 | 387 | **45%** | | | | |

| Group | Basic Non-Grads | 25 % or less to complete | Over 25% to complete | Enterprise Non-Grads | 25 % or less to complete | Over 25% to complete |
|---|---|---|---|---|---|---|
| | | | | | | |
| GLE | 277 | 66 | 211 | 45 | 8 | 37 |
| WBM | 3 | 1 | 2 | 0 | 0 | 0 |
| PS | 52 | 5 | 47 | 10 | 2 | 8 |
| Consumer | 0 | 0 | 0 | 0 | 0 | 0 |
| Sub total | 332 | 72 | 260 | 55 | 10 | 45 |

# Wave 3 Statistics

**Summary**

- 74% finished Wave 3- 315 students
- 26% did not finish- 111 students
- Almost 100% of Basic students were from GLE
- There were no Enterprise students
- Average quiz grade was 85%
- Average Assignment 1 Data Breach Study grade was 91%
- Average Assignment 4 Maturity Questionnaire, Mapping and Email was 83%

| Group | Pilot | | Totals | Basic Grads | Basic Non-Grads | Enterprise Grads | Enterprise Non-Grads | Notes |
|---|---|---|---|---|---|---|---|---|
| | Basic | Enterprise | | | | | | Start 1/6/20 and End 3/31/20 |
| GLE | 425 | 0 | 425 | 314 | 111 | 0 | 0 | |
| PS | 1 | 0 | 1 | 1 | 0 | 0 | 0 | |
| Sub total | 426 | 0 | 426 | 315 | 111 | 0 | 0 | |
| **Totals** | **426** | | | **426** | | **0** | | |
| | | | | | | | | |
| **Graduates** | 315 | 0 | 315 | **74%** | | | | |
| **Non-Graduates** | 111 | 0 | 111 | **26%** | | | | |

| Group | Basic Non-Grads | 25 % or less to complete | Over 25% to complete | Enterprise Non-Grads | 25 % or less to complete | Over 25% to complete |
|---|---|---|---|---|---|---|
| | | | | | | |
| GLE | 111 | 21 | 90 | 0 | 0 | 0 |
| PS | 0 | 0 | 0 | 0 | 0 | 0 |
| Sub total | 111 | 21 | 90 | 0 | 0 | 0 |

# Summary Statistics- All Waves

Summary

- CISO: 100% graduated
- WBG: 83% graduated, 17% did not graduate
- WBM: 76% graduated, 24% did not graduate
- PS: 72% graduated, 28% did not graduate
- GLE: 63% graduated, 37% did not graduate
- Josh: 57% graduated, 43% did not graduate

| | Grad Basic | Grad Enterprise | Total Grad | Total Students | Percent Grad | Percent Non-Grad |
|---|---|---|---|---|---|---|
| GLE | 979 | 164 | 1143 | 1819 | 63% | 37% |
| PS | 88 | 211 | 299 | 415 | 72% | 28% |
| WBM | 28 | 80 | 108 | 142 | 76% | 24% |
| Josh | 3 | 1 | 4 | 7 | 57% | 43% |
| CISO | 1 | 1 | 2 | 2 | 100% | 0% |
| WBG | 12 | 3 | 15 | 18 | 83% | 17% |

# Results & Conclusion

**In total, 1,580 students graduated with a Basic or Enterprise certificate. This is 65% of the entire cohort. 834 students did not complete the program.**

According to Alex Schlager, Verizon had a great year with security products and was able to meet its sales goals. The majority of students enjoyed the program and found it very useful. Here is some of the feedback from students.

"Thank you so much. I truly appreciate working for a company that invests in their employees." - Jorge Tovar Huerta

"I enjoyed and learned a lot, even after 25 years in the industry."
- Edward J Lopez

"This was a highly beneficial program, and I'm glad I signed up for the Enterprise version." - Marcus James Barrett

"Thank you so much, great course! Very educational."
- David M Dominguez

"It was a great program. I plan to put it to good use."
- Timothy J Terista

"Great, thank you so much! I enjoyed the content of the trainings."
- Paul N. Takisaki

"I am looking forward to adding this accomplishment to my LinkedIn profile".
- Roger H. Meyer

"I really enjoyed this course and learned a lot!" - Jason Norris

The cybersecurity programs have been wildly successful and CIU is recommending that Verizon incorporate this training into its on-boarding process for the sale teams and to expand the use of the program to other business units that could benefit from this program. CIU recommends the students that did not finish the courses are given the opportunity to do so. A proposal is provided with this report.

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