

AI for Student Success

Google & Quantiphi: Accelerating adoption of AI and Analytics to improve retention rates in Universities



SPEAKERS OF THE DAY



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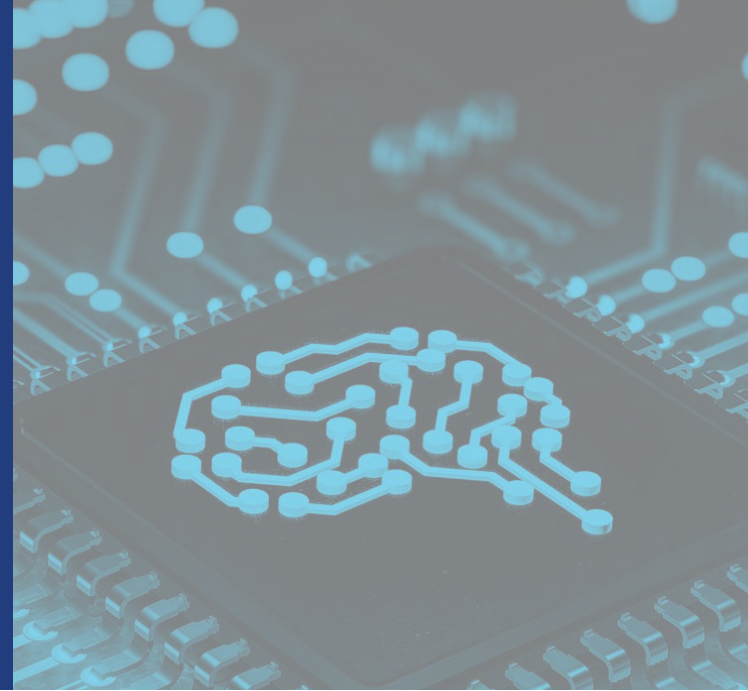
AGENDA

- 1 How GCP is transforming the Education Industry
- 2 About Quantiphi
- 3 Challenges and Solutions for Higher Retention Rates
- 4 Success Stories
- 5 Q&A
- 6 Quantiphi's Engagement Model



01

GCP FOR EDUCATION



GOOGLE CLOUD'S MISSION

Accelerate every organization's ability to digitally transform and reimagine their business through data-powered innovation

GOOGLE IS INVESTING IN MORE CANADIAN REGIONS



Google Cloud

2 Regions & 6 Zones in Canada

- Toronto (Sept '21) and Montreal (2018) Regions online now

Early to Cloud, new to Public Sector Canada

- Covering Federal/Crowns, Provincial, Municipal, Education and Healthcare engineering, consulting, legal, ecosystem development and sales resources
- Both Sales and Engineering teams are growing rapidly (1 to 25 in year, anticipating more)

Four Artificial Intelligence labs

- Google Brain (Toronto & Montreal) and Montreal, DeepMind (Edmonton & Montreal)

CCCS Compliant August 2019, Protected B Assessment and contracted at SSC September 11, 2020

STUDENT SUCCESS SERVICES

Transform student experience and academic operations across entire lifecycle

Students

Jobs

Attract and Enroll

Support and Engage

Graduate and Employ



Optimized enrollment and admission



Virtual assistant for 24/7 support



Tutor for personalized learning



Smart analytics for student retention



Scalable distance learning

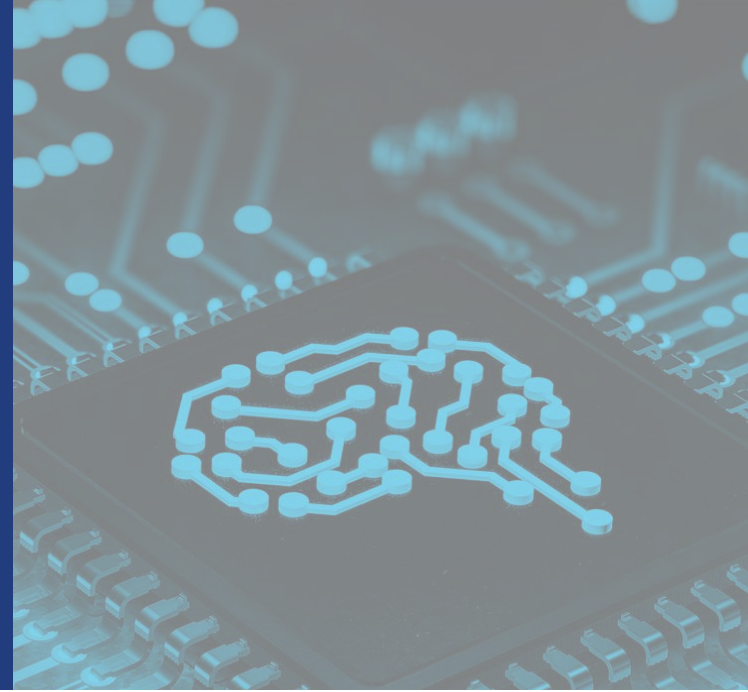


Incidence and intelligence management

- Platform to securely collect and aggregate **all type of academic data in its original format, integrating** with your **existing systems** and applications and **leveraging your current skills**.
- **Real-time** analysis, predictive analytics and **AI services** to **transform student experience and academic operations** along the entire lifecycle.

02

ABOUT QUANTIPHI



INTRODUCING QUANTIPHI

YEAR OF
INCEPTION
2013

SOLUTION AREAS

- Infrastructure
- Conversational AI
- AI/Machine Learning
- Data Analytics
- Marketing Analytics
- Document AI

QUANTIPHI
PROFESSIONALS
3000+

GLOBAL PRESENCE

- | | | | |
|-------------------------------|-------------|-------------|--------------|
| Onshore | ■ Boston | ■ Toronto | ■ Princeton |
| | ■ Chicago | ■ London | ■ San Jose |
| | ■ Amsterdam | ■ Singapore | |
| Offshore | ■ Mumbai | ■ Bangalore | ■ Trivandrum |
| Global Delivery Center | ■ Bangalore | | |

ACCOLADES & ANALYST RECOGNITIONS

2017 | 2019



Global Machine Learning Partner of the Year
Google Cloud

Google Cloud


SOCIAL IMPACT
Partner of the Year
2019

Google Cloud

US EDUCATION
Partner of the Year
Public Sector
2020

Google Cloud

GLOBAL
Partner of the Year
Data Analytics
2020



FAST COMPANY
Business Continuity & Fin-Serv Partner (COVID-19) | World Changing Ideas Awards 2021: AI and Data Honorable Mentions



InsurTech 100 - World's most Innovative players

FORRESTER
LEADER in The Forrester New Wave™ Computer Vision Consultancies, Q4 2020


IDC
Analyze the Future
LEADER in the IDC MarketScape: Worldwide AI IT Service Providers 2021

IDC  **Innovator**
IDC Innovator in AI services

NelsonHall
"Innovator" in the NelsonHall "Intelligent Automation in Banking 2021"

YoY GROWTH
3x

Premier Partner



Data Analytics
Machine Learning
Marketing Analytics
Infrastructure

4
Partner Specialization
Cloud Migration | Data Management

 **54**
Partner Expertise

 **700+**
GCP Certifications

 **420+**
Looker Trained & Certified

PARTNERSHIPS


GOOGLE

- Cloud MSP (in-progress)
- Solution Accelerator Programs
- Product Teams (CCAI, Doc AI, 5G, CDF etc.)
- Partner Embedded Sales Program


SERVICE PARTNERS


NVIDIA
Elite Service Delivery Partner


Looker
Consult & Implement Partner

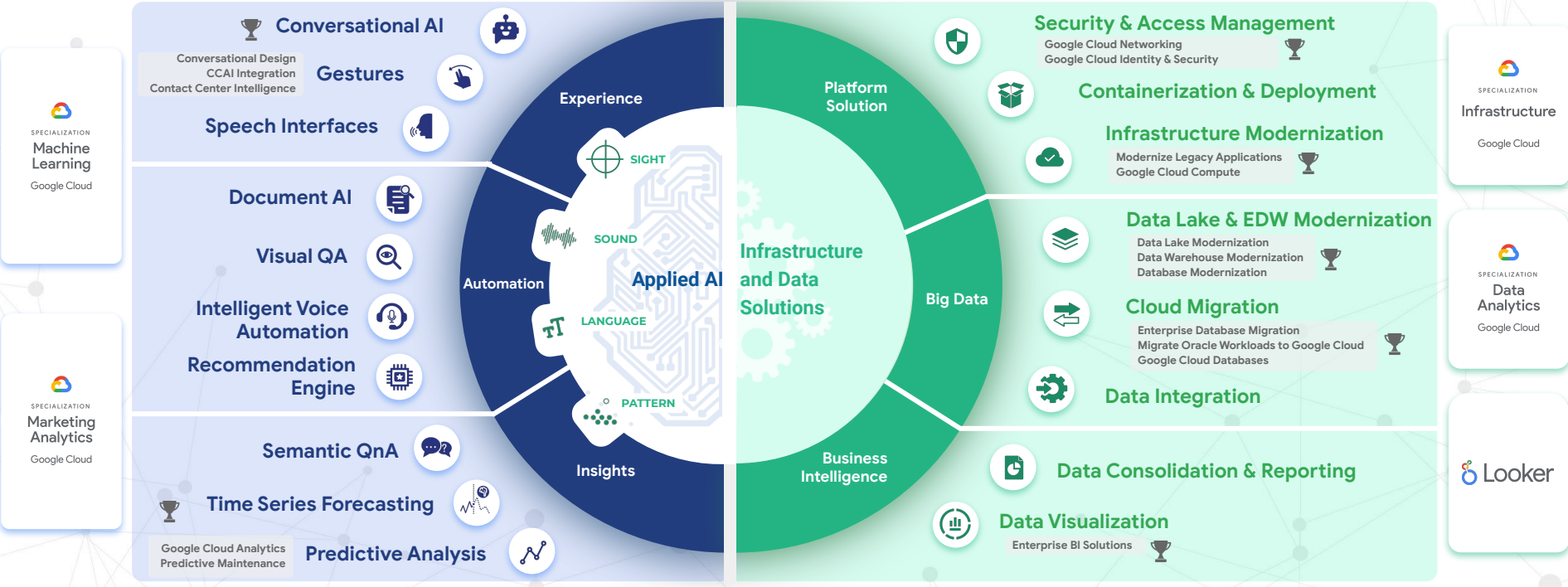

SAP
Build Partner

OTHERS

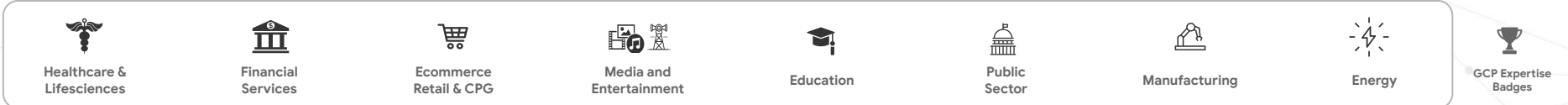

DOW JONES
Fin-Serv Partner


AVAYA
GENESYS
Contact Center Providers

OUR SOLUTION PORTFOLIO

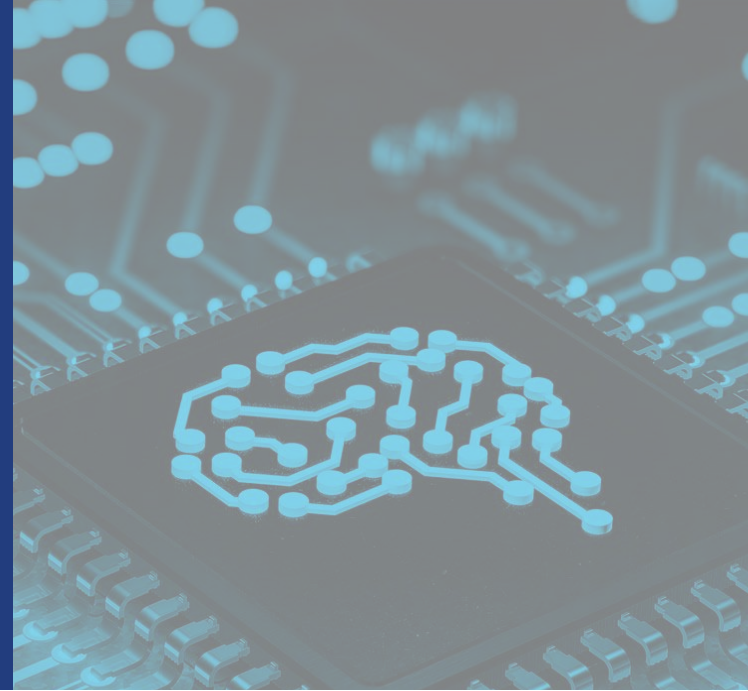


INDUSTRIES



03

CHALLENGES & SOLUTIONS



STUDENT DROPOUT PREDICTION

Develop a machine learning model to predict the dropout probability by identifying prominent factors affecting student retention



| Challenges | Solution |
|------------|----------|
|------------|----------|



Insufficient insights to the factors affecting dropout



Negative impact on the institution's reputation and credibility



Loss of revenue



Flag engagement or predict grades



Identify patterns and generate insights



Put emphasis on at-risk students

Business Impacts & Value Proposition for Customers



Lesser Number of Dropouts



Improved Student Experience



Decrease in Loss of Revenue

STUDENT GRADE PREDICTION

A machine learning model to predict the grade of the student and also identify critical factors that affect it.

Challenges



Many students tend to dropout from courses due to low grades



Lack of timely intervention for students at-risk



Insufficient insights to the factors affecting the grade

Solution



Predict the grade of the student



Identify patterns and generate insights



Put emphasis on at-risk students

Business Impacts & Value Proposition for Customers



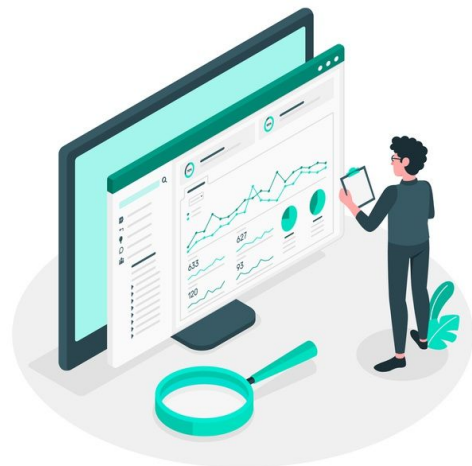
Improved course designing



Better communication experience between advisors and students

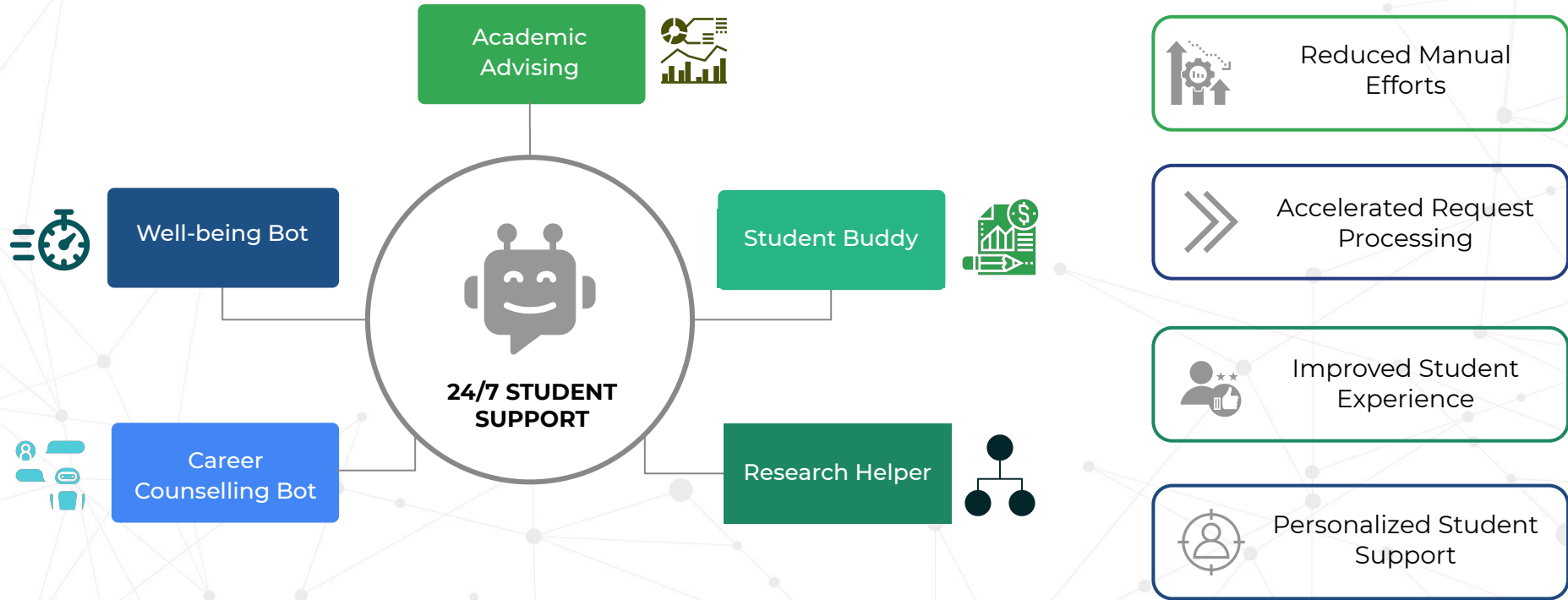


Increase in Graduation Rates



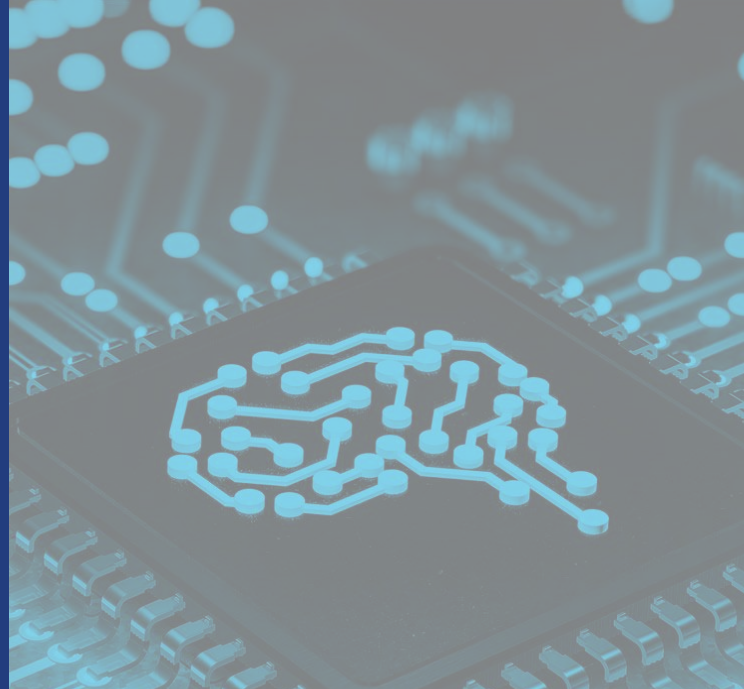
VIRTUAL AGENT FOR STUDENT SUCCESS

A Conversational AI technology powered multilingual virtual agent that can assist students 24x7 and streamline work for the advisors



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SUCCESS STORIES



STUDENT DROPOUT PROBABILITY

Multivariate rescoring model to predict the likelihood of a student dropping out of the course

The screenshot shows a user interface for a student profile. At the top, there are navigation links for 'Home', 'Model', and 'Users'. A 'BACK' button is located in the top left. The main content area is divided into several sections:

- Student Information:** A red-bordered box contains a student profile card with a placeholder image, name 'Kimberly Blackburn', enrollment ID '773969', program 'Criminal Justice', and term 'Quarter 4 B-2019'. A callout box points to this section with the text: "The section contains the student information and his current term name."
- Drop Risk Probability:** A circular progress indicator shows '24.9%'. A callout box points to this circle: "On click of the progress circle of Drop Risk Probability, the daily prediction probability graph will be displayed."
- Aggregated Values:** Three buttons labeled 'ACADEMIC AGGREGATED VALUE', 'FINANCE AGGREGATED VALUE', and 'BACKGROUND AGGREGATED VALUE' are shown with corresponding values: -0.12, -0.70, and 0.01. A callout box points to these buttons: "On Click of any one button from the above, all the feature name, feature score and feature value will be displayed respectively."
- Probability and Aggregation:** A callout box points to the values: "The section contains the student's drop probability(%) and the aggregated values of academic, finance, background."

Problem Context

The currently utilised student engagement model at a post graduate company is not reflective of key drivers/indicators of student performance thereby, making it incapable of timely identification of at-risk students.

Solution Delivered

Quantiphi developed a machine learning solution to identify at-risk students and provide early intervention.

The solution involves a **multivariate rescoring model** to improve the current process of predicting the likelihood of a student dropping out of the course. The model output is used as an input to modulate operational policies to give students more targeted support, to improve their performance in class.

Business Impact

- 💡 **~75%** dropouts correctly identified
- 💡 **85%+ model accuracy** for student retention model
- 💡 Visible fall in revenue loss and rise in student graduation rates **within 3 months**

ACADEMIC ADVISOR ASSISTANT

Virtual agent for an educational institution to resolve queries posted by potential students, existing students and alumni



PennState

“Partnering with Quantiphi has allowed my team to use a well-developed artificial intelligence user interface that has the potential to increase productivity by 150%..”

~ **Dawn Coder**, Director of Academic Advising and Student Disability Services at Penn State World Campus

“Using AI to assist our academic advisers positions us to be even more responsive to our learners,”

~ **Renata Engel**, vice provost for online education at Penn State.

Problem Context

A staff of **48 full-time advisers** collectively spends more than **5,000 hours** a year assisting students with the most common requests like how to change majors or re-enroll in classes.

Solution Delivered

To help get information to students more quickly and free up advisors to tackle more complex student issues, Quantiphi developed a solution to answer routine student questions more quickly.

The solution uses **Dialogflow**, Google's natural-language processing tool, to analyze the questions students send to advisors and gather relevant information from Penn State's secure student database. The virtual assistant then quickly sends the answers back to the advisor to relay to the student.

Business Impact



Average response time slumped from **30 mins/query to ~557ms**



92% model accuracy for user query resolution



24/7 live chat availability, significantly enhancing student experience

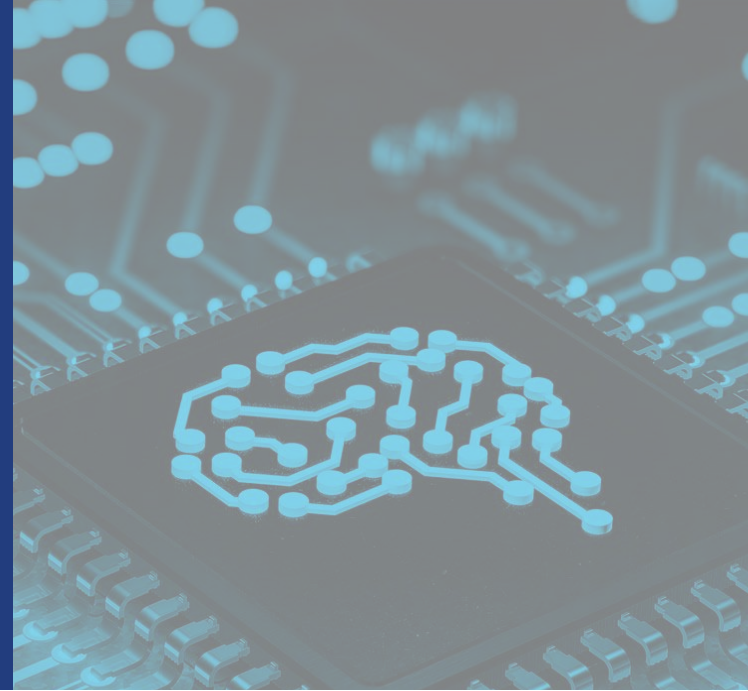
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Q&A, NEXT STEPS?

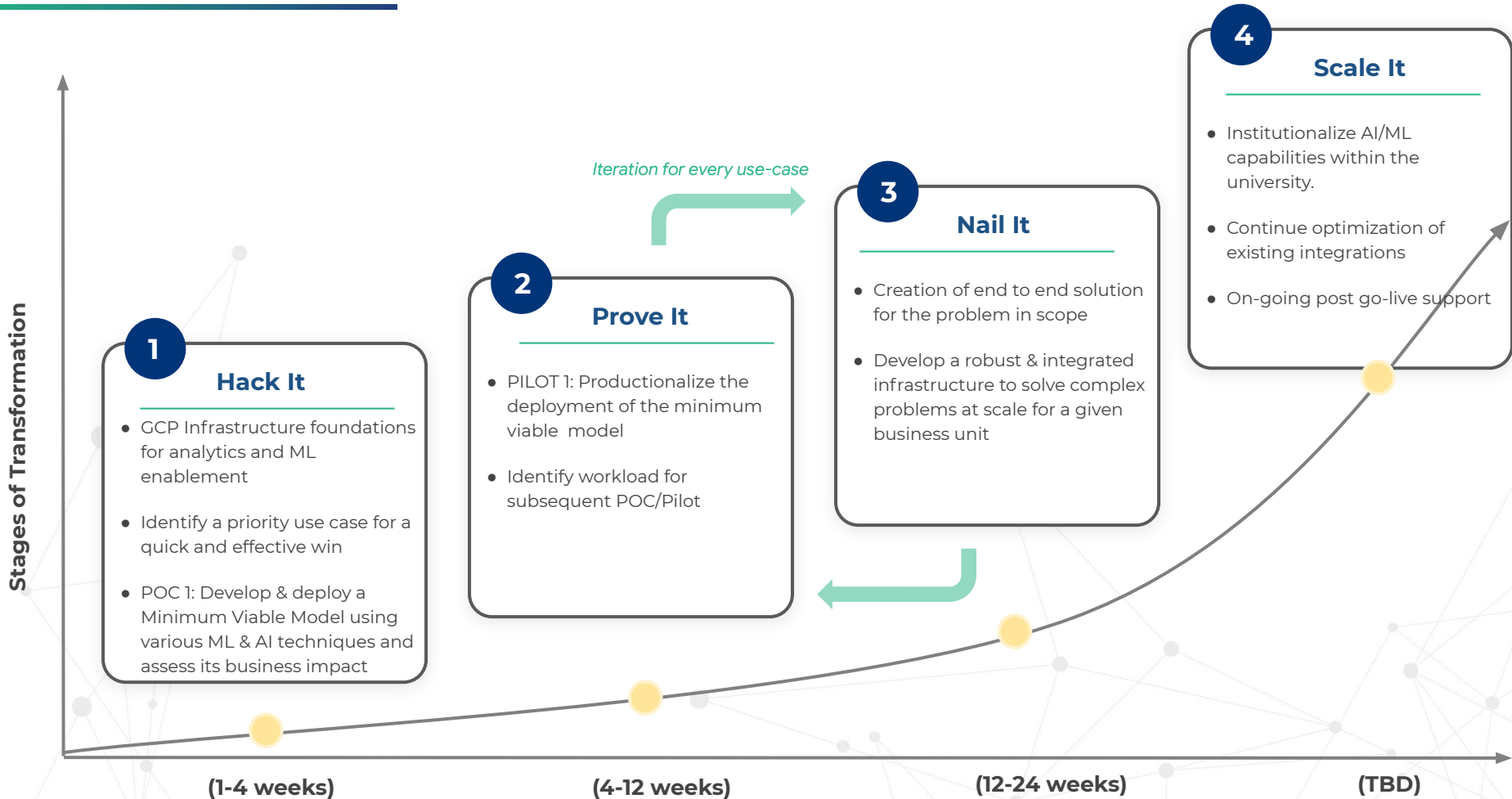


06

QUANTIPHI'S ENGAGEMENT MODEL



PROPOSED ENGAGEMENT JOURNEY



THANK YOU



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