



Wharton
UNIVERSITY of PENNSYLVANIA

 **Intercorp**

**Research Opportunity:
*Recommending Products/Brands
& Lending Opportunities***

Sponsored by **AI & Analytics for Business & Intercorp**
February 24th, 2023 – Project Kick-Off

Agenda

- Introductions
- About Intercorp
- Research Opportunities
- About the Data
- Data Access
- Research Proposal & Application Process
- Q&A

Introductions

- Brandon Krakowsky
Research & Education Director, AIAB
- Jamie Samper
Associate Director of Data Science
and Research, AIAB
- Jaden Dicopoulos
Data Scientist, AIAB
- Mary Purk
Executive Director, AIAB
- Iván Herrero Bartolomé
Chief Data Officer, Intercorp
- Gustavo Yupanqui Moreno
Corp. Customer Intelligence
Manager, Intercorp
- Renzo Osso
Head of Data & BI, Intercorp Retail

A Few Operational Notes

This webinar is intended for **researchers & scholars**. It should not be published or presented without permission from AIAB.

Questions about our research programs or
for press inquiries:

aiab-research@wharton.upenn.edu

To work with AIAB and Intercorp, research teams **must submit a proposal for approval**. More details throughout this presentation.

A Few Operational Notes

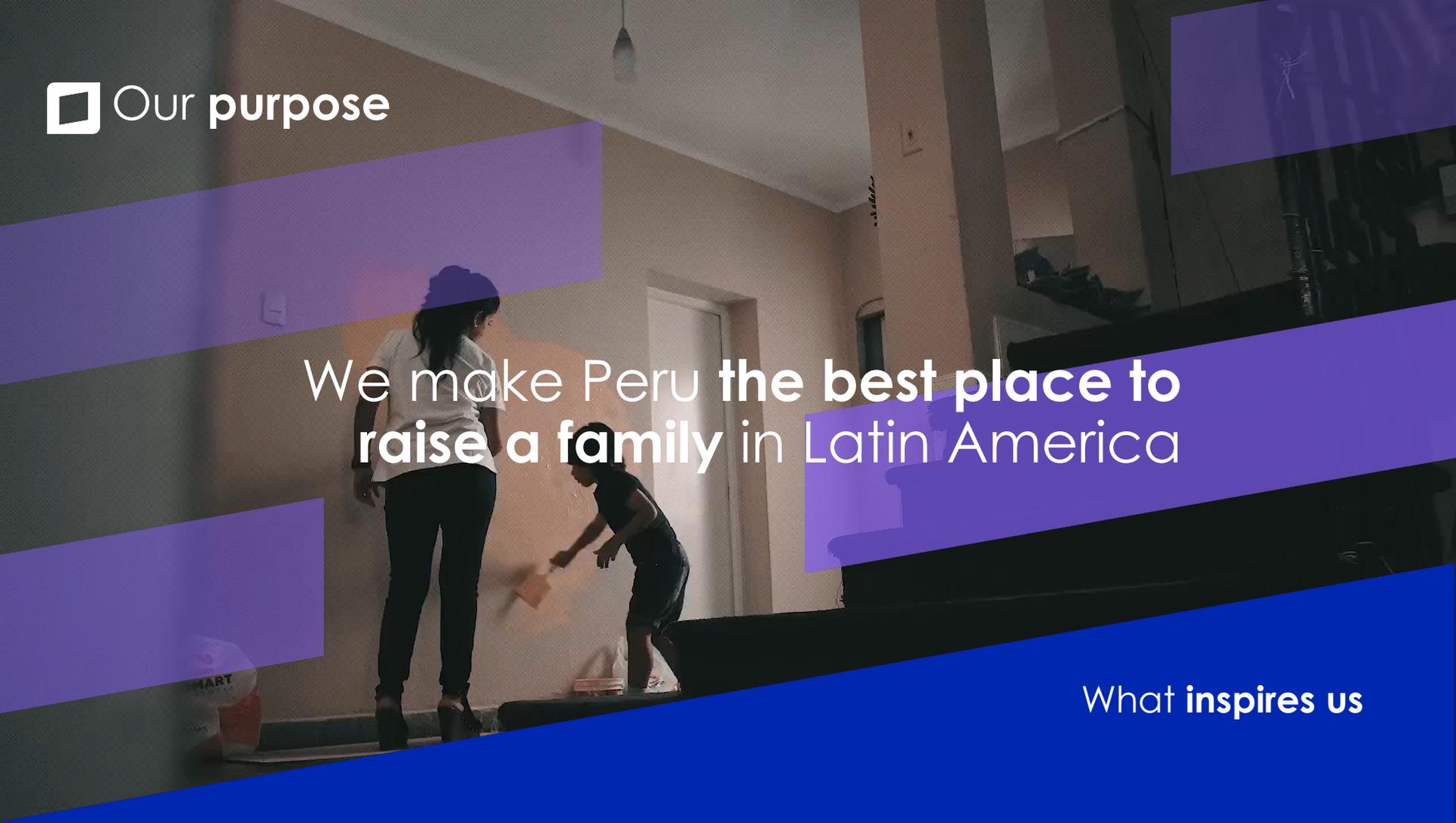
Q&A

To ask a question, click the chat button and type your question.
All questions will be answered live or via e-mail.

01

About Intercorp





 Our purpose

We make Peru **the best place to raise a family** in Latin America

What **inspires us**

Our companies

Financiera



Retail



Salud



Educación



Nexus



Corporate services



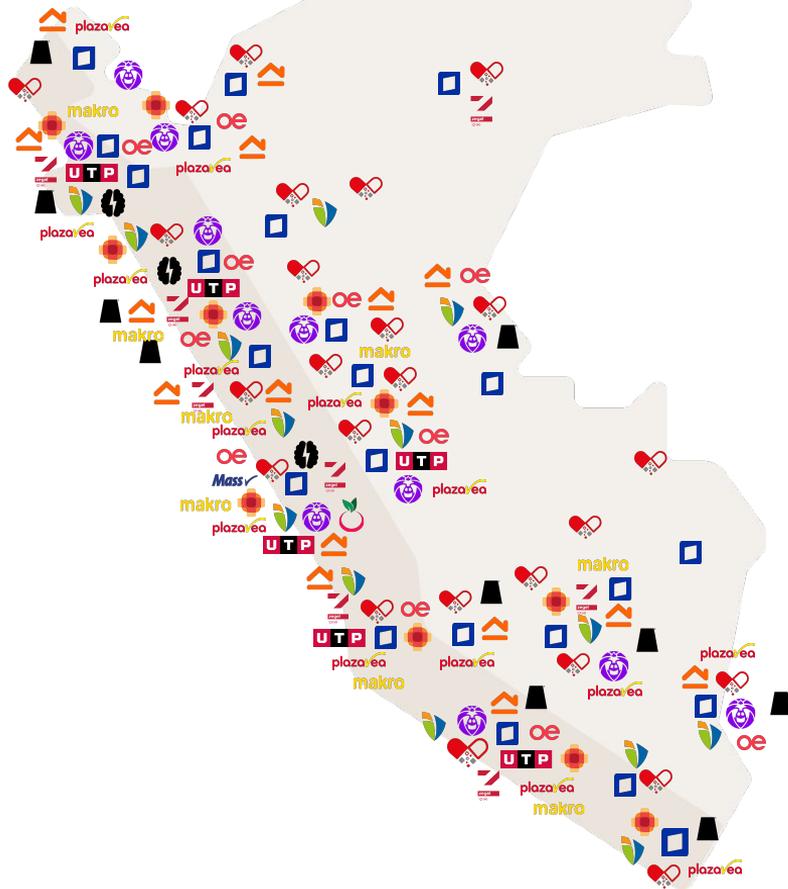
IR Management



Who we are

Our footprint

We are committed to the **wellbeing** of Peruvian families.



One
Group

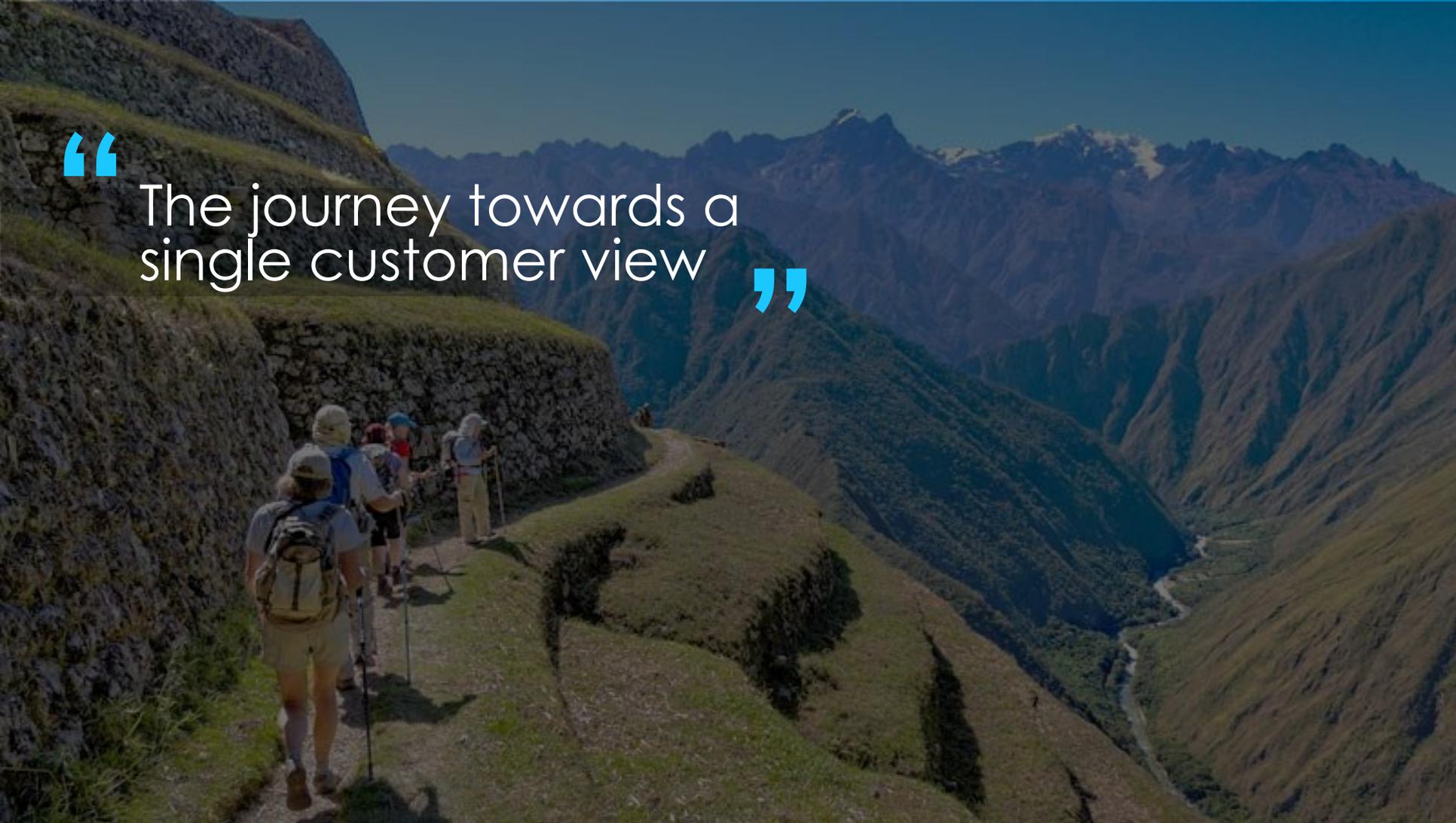
39
companies

+92,000
employees

02

Approach



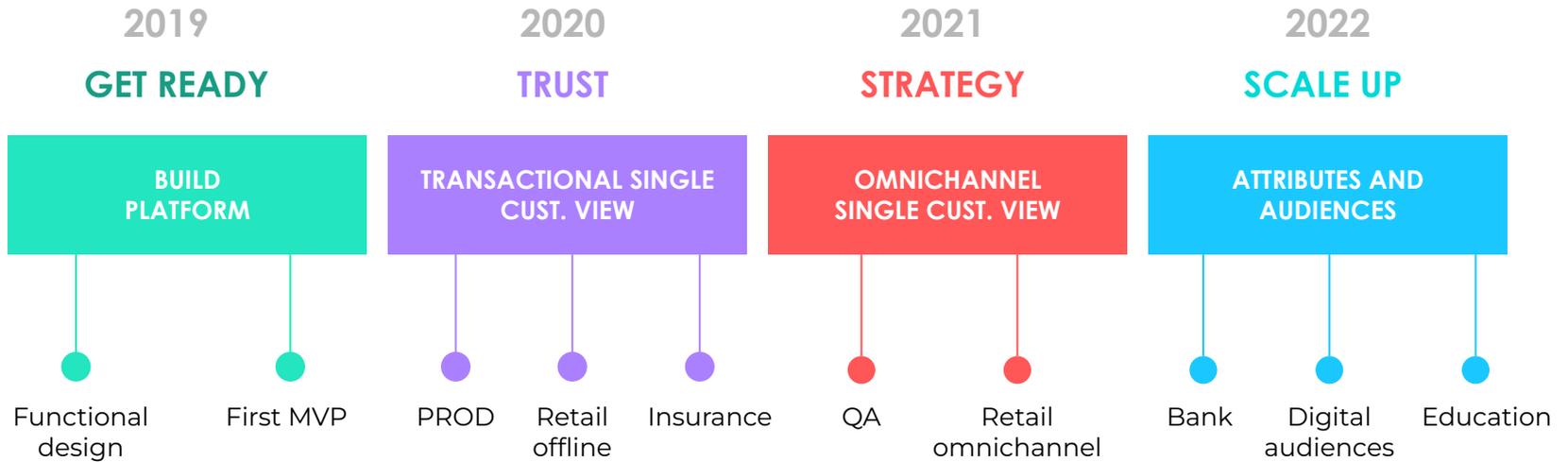
A group of hikers is seen from behind, walking along a dirt path on a grassy mountain ridge. They are wearing backpacks and using trekking poles. The landscape is rugged, with steep slopes and a deep valley below. In the distance, a range of mountains with some snow-capped peaks is visible under a clear blue sky. The overall scene is bright and scenic.

“

The journey towards a
single customer view

”

Evolution of the single customer view





Some numbers...

22 M
customers



Some numbers...

1,9B
transactions



Some numbers...

3B

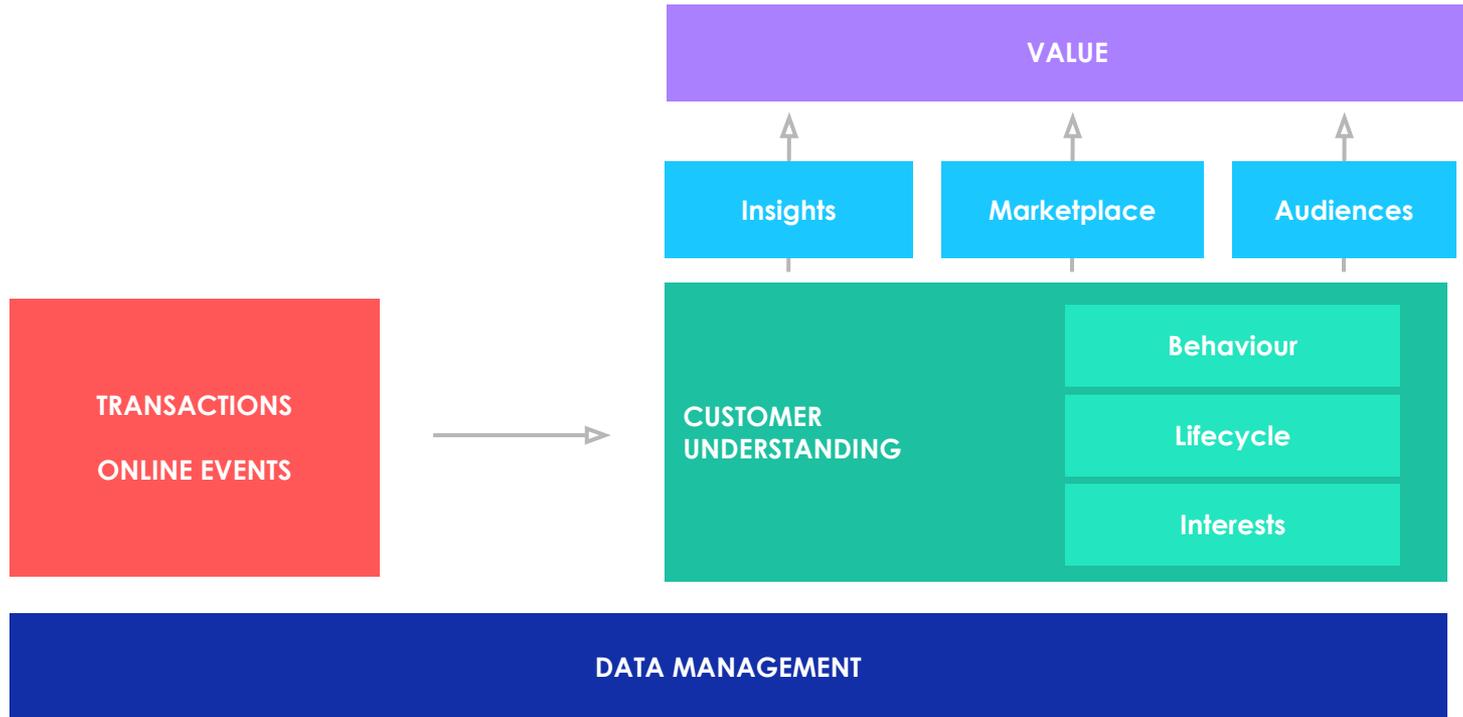
web events



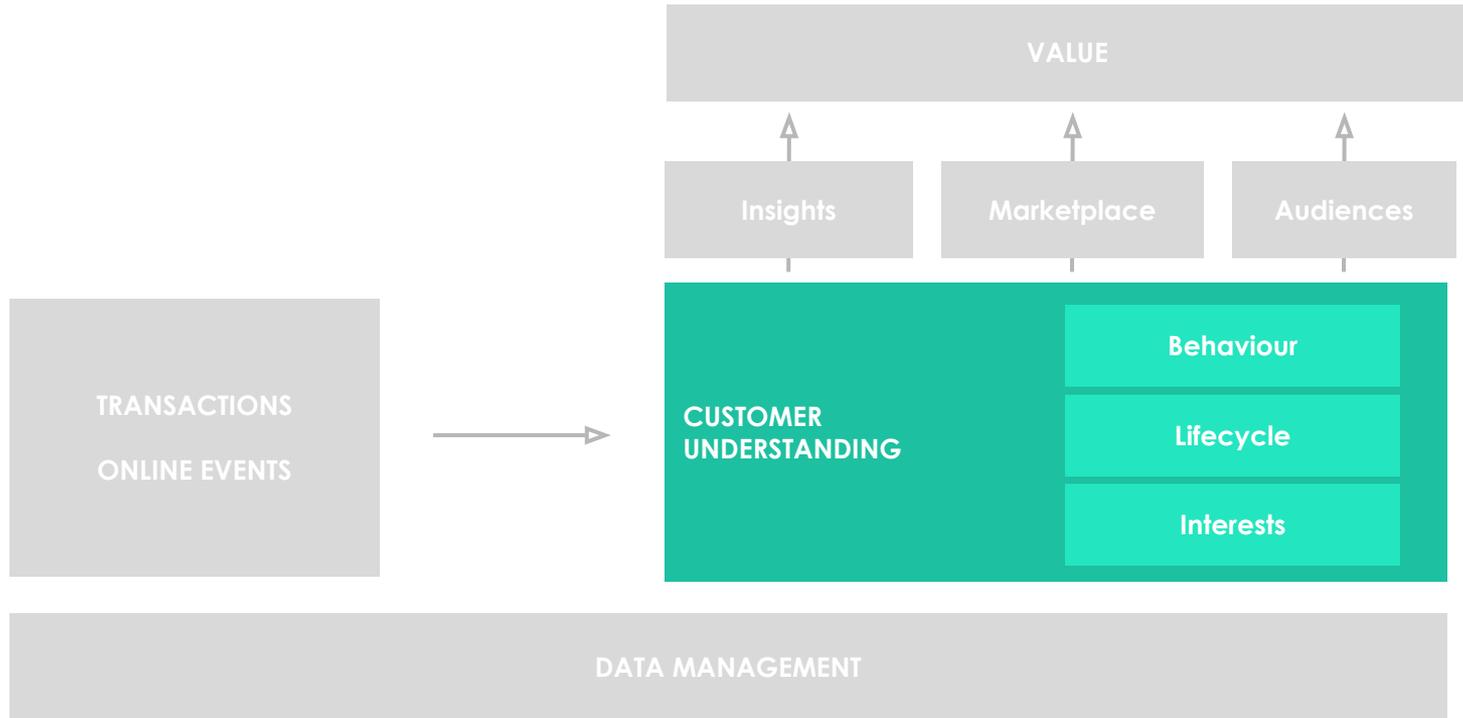
**So
what?**



From transactions to Value

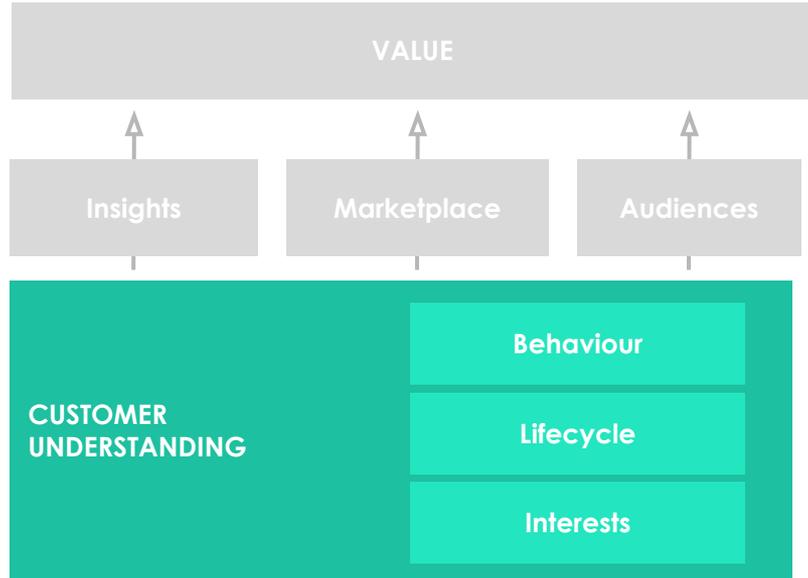


From transactions to Value



From transactions to Value

4,781
attributes



04

Research opportunities



Research opportunities

1 **Develop insights, segmentations and recommendation engines based on customer needs**, enabling an evolution towards a truly customer-centric approach from our current company-based models.

- **Build new attributes** such as the following ones, from the information we have in the single customer view:
 - Segmentations: by value, by behavior, by behavior change, by interest, by family size...
 - Personal features: age, gender, location, payment capacity...
 - Moment in life: young family without children, family with children, children's age...
- Use customer level attributes to **build lifestyle segments** and drive **actionable insights** for each of them.
- **Develop advanced recommendation engines** specialised for each channel and step of the customer journey.

Research opportunities

2 **Find creative solutions to guess customers' income and credit risk score from transactional data, so we can offer lending solutions** to people with no record on traditional banking.

- **Income prediction:**

- Identify and build signals related to our customers' payment capacity.
- Develop analytical models able to project monthly income and payment capacity.

- **Credit risk score:**

- Build attributes related to the payment behavior based on demographics and transactional data.
- Develop predictive models able to assign the default probability during the next 6 months.

Research opportunities

3 Optimize the use of product-based discounts with credit card.

- For our retail banking company. We store detail information about what products our customers bought. So, we give discounts to certain products if they pay with our credit card.
- Assess which products drive highest impact when a discount is offered.
- Identify the optimum discount for each product to increase the use of the credit card.

05

Details about our data



Details about our data

We're giving details of **24 main tables** grouped in **14 data domains**, which represents about:

+12 Billion rows, +16 TB

All our tables contain a **customer ID** which can be used as a primary key to join them.

The **data domains** are: Customers, Products, Promotions, Sales (transactions), Web sessions, Insurance, Vehicle, Demographics, Financial, Payments, Retail, Corporate, Digital behavior and Banking.

These main tables and columns are **described** in the **next** seven slides.

Details about our data

Customers & Products

Data domain	Table name	Table description	Column	Column description	Table Size (GB)	Rows	Data History	Load Frequency
Customers	m_customer	Clients of each company of Intercorp Group.	birth date, residence, customer type,	customer demographic by company	22.41	92,258,096	2018, 2019,2020,2021,2022	Dayly
	c_its_company	Intercorp companies catalogue.	company ID, comercial name	description of companies	0.00	67	Full	On demand
	m_customer_profile	Association of clients with segments and profiles generated by Intercorp Group companies.	customer segmentation	group of customer based on their behavior and interation	44.90	175,849,483	2019,2020,2021,2022	Dayly
Products	m_product	Product catalog of each Intercorp Group company.	product name, description, proce, SKU, model, brand name	product details by company	2.08	2,582,893	Full	Dayly
	c_product_group	Product grouping catalog according to the company.	product hierarchy	indicates hierarchy of segment and profile	0.40	1,826,363	Full	Dayly
	m_product_offering	Association between the promotion with the products (SKU) to establish the commercial offer.	name and description of promotional offer	detail information about promotional offer and relations by company	2.62	6,571,484	Full	Dayly

Details about our data

Promotions & Sales

Data domain	Table name	Table description	Column	Column description	Table Size (GB)	Rows	Data History	Load Frequency
Promotions	m_promotion	Catalog of promotions of each company of Intercorp Group.	name, description, type, status promotion	detail information about promotions	2.78	9,574,057	Full	Dayly
	m_promotion_configuration	Stores the configuration associated with the promotions. A configuration is the details such as place of sale, sales channel, payment method, and product associated with the promotion. Example: the configuration of the 2-for-1 promotion is in Plaza Vea e-commerce, in products of the Food category with Agora card payment method.	payment method and promotional purchase channel	payment method associated with transaction (cash, credit card, debit card)	24.53	91,356,923	Full	Dayly
Sales	m_place	Catalog of establishments where the company's products and services are acquired or marketed, which may be it's own or those of commercial partners. It considers points of sale, stores, warehouses, physical locations, online and telephone channels, real estate services, and georeferencing, among others.	description, geo-reference, business unit	details about point of sales	0.01	17,226	Full	Dayly
	t_retail_transaction	Stores the transactions generated by the customer in the Retail companies. Transactions are considered sales, refunds, or an exchange in which an item is sold and returned creating a transaction with zero balance.	date, ticket identifier, transaction amount	details about amount, products and transaction channel	4,355.34	5,763,921,875	2017,2018, 2019,2020,2021,2022	Dayly
	t_operation	Stores the detail of the operations performed by a customer in Intercorp Group companies. It can be considered a transaction made with the Agora debit card (e-wallet or physical card).	date, identifier, transaction amount	details about amount, channel and operation with Agora card	16.18	21,010,601	2020,2021,2022	Dayly

Details about our data

Web Sessions & Insurance

Data domain	Table name	Table description	Column	Column description	Table Size (GB)	Rows	Data History	Load Frequency
Web sessions	t_googleanalytics_sessions	Sessions and their characteristics are generated in Google Analytics day after day in the companies' e-commerce. A session is any interaction generated by the user within the web, from a search to purchase.	hits	details of interaction performed by the customer in e-commerce. Example: Record of product viewed, product added to cart, etc	2,970.44	215,435,080	2021,2022	Daily
			hits.product	Product information associated with the interaction				
			hits.eCommerceAction	Information on the type of interaction performed				
	t_googleanalytics_event	It captures all the events generated in Google Analytics day after day in e-commerce companies. An event is any interaction generated by the user within the website, from a search to purchase.	device	Information about the device used to connect	1,085.27	1,190,913,289	2022	Daily
			event_name	description of the type of event held				
			event_params	Details of the event performed by the customer in e-commerce. Example: Amount paid, delivery destination, traffic origin, etc.				
Insurance	ba_itc_attr_insurance	Catalog of customer's attributes and relationship with the insurance policies he/she is subscribed to.	insurance policy type	type of policy customer subscribed (VEHICLE, LIFE, TRAVEL)			2022	Monthly
			insurance policy amount	amount to be paid by the customer for the policy.				
			number of insurance policy beneficiaries	number of beneficiaries that are associated with policy				
			amount of time subscribed to insurance policy	time in months that has elapsed since subscribing to the policy				

Details about our data

Vehicle & Demographics

Data domain	Table name	Table description	Column	Column description	Table Size (GB)	Rows	Data History	Load Frequency
Vehicle	ba_itc_attr_vehicle_fleet	Catalog of customer's attributes vehicle.	vehicle characteristics	characteristics such as color, brand, model and class of vehicle			2018, 2019, 2020, 2021, 2022	Monthly
			number of vehicles	number of vehicles owned by the client				
Demographics	ba_itc_attr_demographic	Catalog of customer's attributes demographic.	age	person age	7.00	37,952,440	Full	Monthly
			residence	department, province and district where person resides				
			marital status	person's marital status (SINGLE, MARRIED, WIDOWED, DIVORCED)				
			education level	education level				
professional information	occupation and employer information							

Details about our data

Financial & Payments

Data domain	Table name	Table description	Column	Column description	Table Size (GB)	Rows	Data History	Load Frequency
Financial	ba_itc_attr_rcc	Catalog of customer's attributes financial information (this information is shared by the regulator with every financial institution on a monthly basis).	customer products in financial institutions	products available to customer in different financial institutions	875.00	172,624,622	2022, 2021	Monthly
			credit card debt	available balances, balance consumed in financial institutions				
			personal, mortgage and vehicle loan debts	paid, current and past-due debt in financial institutions				
			customer classification in financial institutions	customer classification in the different financial institutions				
Payments	ba_itc_attr_payment	Catalog of customer's attributes consumed with Agora card and Oh Card.	consumption with Oh card at Intercorp	consumption with Oh card at Intercorp companies in different periods			2022	Monthly
			consumption with Agora card at Intercorp	consumption with Agora card at Intercorp companies in different periods				
			consumption with Agora card in the competition	consumption with Agora card in the competition in different periods				
			consumption with Ohcard in the competition	consumption with Ohcard in the competition in different periods				
			consumption in different channels with Oh card and Agora card	consumption in face-to-face and digital channels with Oh card and Agora card				

Details about our data

Retail & Corporate attributes

Data domain	Table name	Table description	Column	Column description	Table Size (GB)	Rows	Data History	Load Frequency
Retail	ba_itc_attr_retail	Catalog of customer's attributes consumes in retail.	face to face consumption in retail	face-to-face consumption in retail by company	6,400.00	3,218,339,077	2019, 2020, 2021, 2022	Monthly
			digital consumption in retail	digital consumption in retail by company				
			face to face consumption by product categories	face-to-face consumption by retail categories and companies				
			digital consumption by product categories	digital consumption by retail categories and companies				
Corporate	ba_itc_attr_corporate	Catalog of customer's attributes interactions in Intercorp's companies.	customer segmentation	group of customer based on their behavior and interation by company	83.00	320,508,728	2022	Monthly
			customer profiling	customer grouping based on business rules and created for digital audiences				
			customer by company	identify which companies a person is a				

Details about our data

Digital behavior & Banking

Data domain	Table name	Table description	Column	Column description	Table Size (GB)	Rows	Data History	Load Frequency
Digital behavior	ba_itc_attr_digital	Catalog of customer's attributes interactions made in the e-commerce of the retail companies.	products viewed in e-commerce	frequency by category and sub-category of which products were viewed	109.00	184,004,046	2021, 2022	Daily
			products added to cart in e-commerce	frequency by category and sub-category of which products were added to card				
			products purchased in e-commerce	amount of purchase, frequency by category and sub-category of purchase, by category and sub-category.				
			device used in interaction	electronic device where interaction took place				
			delivery location	department, province and district where the product was sent				
Banking	ba_ibk_con_cli_com_elec	Catalog of customer's attributes interactions in the bank.	credit card consumption in ecommerce	number of transactions and sum of amounts per quarter	2.14	28,465,897	2022	On demand
			debit card consumption in ecommerce	number of transactions and sum of amounts per quarter				

Details about our data

Q&A

To ask a question, click the chat button and type your question.
All questions will be answered live or via e-mail.

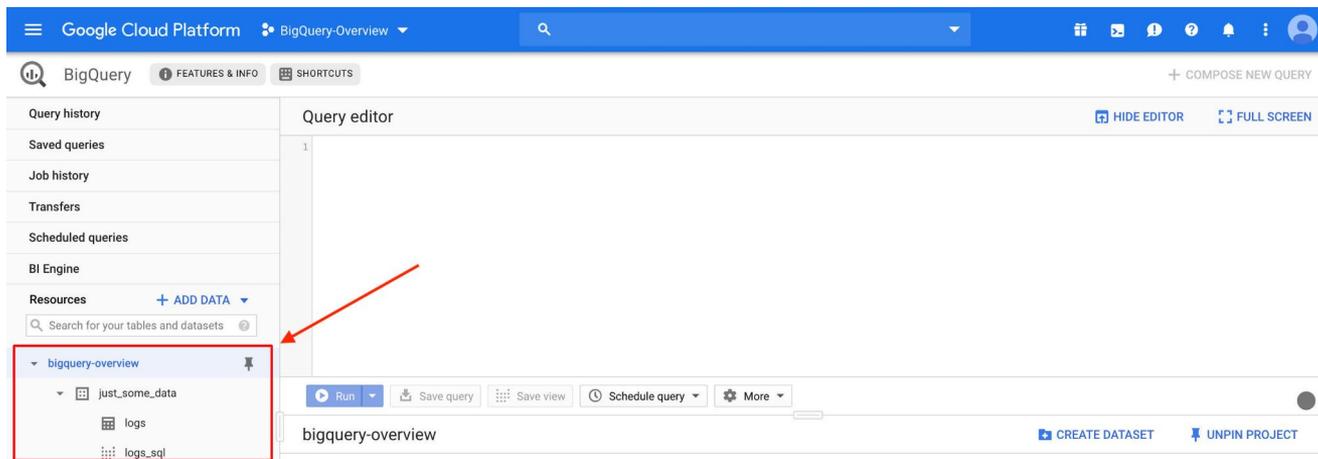
05

Data Access



Data access

- **Research teams will have full access to the data** they consider useful for the analysis
- **The data will be made available via the Google Cloud Platform** environment (BigQuery).



<https://cloud.google.com/bigquery/docs/introduction>

<https://cloud.google.com/blog/products/data-analytics/new-blog-series-bigquery-explained-overview>

06

Researcher Proposal & Application Process

Researcher Proposal Format

Researchers will apply and submit a proposal online. Proposals should be **in PDF format, no more than 2000 words**, and include the following information:

- Title
- Author(s) name, title, affiliation and e-mail address: Please designate a corresponding author (Note: Teams are strongly encouraged, e.g. doctoral student(s) + faculty)
- Author bios: Include up to a paragraph-long biography highlighting what each team member will contribute to the project
- Abstract
- Summary information: Include a single “slide” that visually summarizes the team & project

▣ Researcher Proposal Format (cont.)

- Introduction: Describe expected contribution(s), covering both the academic and practical aspects. Describe how you will approach the project and the key methods and ideas that you would like to bring to the table. Please keep it concise, and cite relevant work as necessary to explain your academic contribution. There is no need to include a lengthy literature review.
- Detailed project proposal: Please include supporting detail that will help us assess the feasibility of your approach and its compatibility with existing data
- Data Needs: Bulleted list of data required or requested for analysis. While we can't guarantee the inclusion of these items, we are happy to investigate the availability
- Languages/tools: What you propose to use and how it fits the project. (Note: There are no restrictions on software)

How to Apply

Submit your proposal here:

<https://aiab.wharton.upenn.edu/research/recommending-products-brands-lending-opportunities/>

- No later than **March 12th @ 9AM ET**

Please contact us at aiab-research@wharton.upenn.edu, if you have any questions prior to submitting your proposal

Researcher Proposal Selection Process

Multiple research teams will be selected for the Research Opportunities

- **In 2 weeks**, research proposals will be due
- **In 9 weeks**, research teams will be selected & notified
- **In 12 weeks**, projects will kick off
- Research teams **will meet regularly with AIAB and Intercorp** throughout the project
- **In 12 months**, research teams will present findings directly to AIAB and Intercorp

▣ Researcher Proposal Selection Process (cont.)

Proposals will be evaluated based on:

- Academic contribution and the researcher's ability to address issues of strategic importance to the research sponsor
- The researcher's willingness to share all code and findings with Intercorp
- The researcher's history of academic achievement

Proposal Review Committee

Research teams will be selected jointly by a committee of academics and representatives of Intercorp's analytics team:

- Kartik Hosanagar: Faculty Co-Director, AIAB
- Raghu Iyengar: Faculty Co-Director, AIAB
- Prasanna (Sonny) Tambe: Faculty Co-Director, AIAB
- Iván Herrero Bartolomé: Chief Data Officer, Intercorp
- Gustavo Yupanqui Moreno: Corp. Customer Intelligence Manager, Intercorp
- Renzo Rosso: Head of Data & BI, Intercorp Retail
- Other external reviewer(s)

Researcher Proposal & Application Process

Q&A

To ask a question, click the chat button and type your question.
All questions will be answered live or via e-mail.

❑ Other AIAB Opportunities for Researchers

If you registered for this webinar, you will receive regular announcements regarding upcoming Research Opportunities:

- Research Projects:

<https://aiab.wharton.upenn.edu/research/available-data-for-academics/available-data/#t=All>

- Research Papers:

[https://aiab.wharton.upenn.edu/search/#t=Custom&sort=relevancy&f:@martech_category=\[Research%20Papers\]](https://aiab.wharton.upenn.edu/search/#t=Custom&sort=relevancy&f:@martech_category=[Research%20Papers])

- Sign up for updates: <https://aiab.wharton.upenn.edu/about-aiab/contact-us/>

- E-mail us: aiab-research@wharton.upenn.edu



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Thank you!

Iván Herrero
Chief Data Officer
Intercorp

Brandon Krakowsky
Research & Education Director
AI & Analytics for Business