eleven | X-HEC – Data Augmented Proposal Challenge

To the attention of the Data Science for Business' master students

January 30th, 2023

HEC PARIS

ÉCOLE POLYTECHNIQUE

eleven
strategy • data • digital

AGENDA

1. About eleven
2. Structure of a commercial exchange
3. Case presentations
   a) The Right Price
   b) The Endless Line
4. General information
   a) Expected output
   b) Practical information

eleven is Europe's first ever specialist strategy firm specifically founded to accompany clients' transformation through the AI and digital revolution, thanks to a unique combination of strategy perspective and hands-on approach

eleven
strategy • data • digital

DIGITAL & AI STRATEGY SPECIALIST

revolution is unlocking new, untapped value creation opportunities

STRATEGY X HANDS-ON POSITIONING

supporting C-level executives and organizations from strategic ignition to project scale-up and

A UNIQUE BLEND OF SKILLS

and data science ones, thanks to its 50+ consultants that master the continuously evolving

DISTINCTIVE ENTREPRENEURIAL MINDSET

us to provide issue-based methodologies centered on your business needs

CSR AT THE CORE OF OUR DNA

Our approach enables our clients' projects to meet CSR expectations. Both financial and CSR impacts are tracked, proven and reported thanks to our mastering of digital and AI levers

AGENDA

1. About eleven
2. Structure of a commercial exchange
3. Case presentations
   a) The Right Price
   b) The Endless Line
4. General information
   a) Expected output
   b) Practical information

Based on a major sales concept: AIDA, eleven relies on its unique expertise to provide innovative solutions to clients' problems

Attention

Catch client's attention:

- Address the client's true needs
- Differentiate…

eleven

Capture attention through an innovative approach

Interest

Identify client's needs:

- Present the main characteristics of the offer
- Provide a clear storytelling
- Show it is complex

eleven

Generate interest by showing business/operational impacts of a data-driven approach

Desire

Make the offer irresistible:

- Show the relevance of the offer / the benefits of the proposed solution
- Create dissatisfaction with current situation

eleven

Increase interest with a promising demo and promising results

Action

Be practical and convincing:

- Be explicit about the next steps
- Help the client visualize their work with you

eleven

Convince of feasibility through a detailed technical roadmap

Key elements

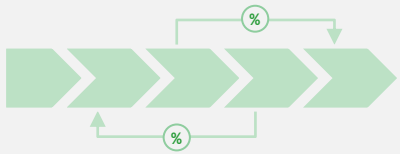
✓ Data enriches the discourse and makes it more effective at each stage of a commercial proposal

Your mission: structure a data-augmented commercial exchange

You are expected to deliver the following:

- Your code used to solve the use case, including any relevant dashboard, data analysis, model training, etc. This code should be readable by anyone, with a clear *Readme*, *requirements*, potential *quickstart.py*, etc.
- A "client-ready" PowerPoint presentation of your work, structured as follows:

1 Context & Objectives: what do you understand from the project? Why is the context very complex?



- ✓ Present your understanding of the situation
- ✓ Include the process, the needs, the potential ROI, etc.

➢ c. 2/3 slides

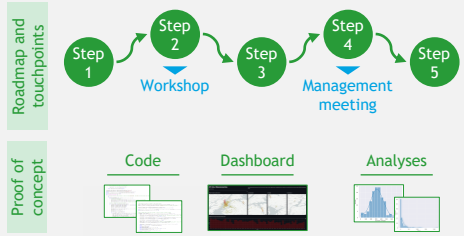
2 Key Success Factors: what would be the reason of your success?

KSF	WHY?	HOW?
Business oriented		
Hands-on approach		
etc.		

- ✓ Explain the reasons of success: strong interaction with client? Deep expertise in AI?

➢ c. 1 slide

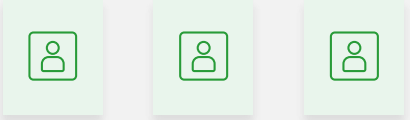
3 Proposed methodology: what could you do for the potential client?



- ✓ What you could do, how, what you have already done, any relevant insight to prove your expertise and how much time do you need for the mission!

➢ c. 6/8 slides

4 Team: who are you and what have you done? Why are you relevant to solve the case?



- ✓ Introduce yourself, your background and explain why you are relevant for this mission

➢ c. 1 slide

AGENDA

1. About eleven
2. Structure of a commercial exchange
3. Case presentations
   a) The Right Price
   b) The Endless Line
4. General information
   a) Expected output
   b) Practical information

eleven augmented proposal challenge: deliver a convincing commercial exchange to your prospect leveraging your dual expertise in business and data science

Exercise:

- ✓ Make groups of 5 people
- ✓ Choose among the 2 available topics
- ✓ On your topic, put yourself in a data consultant's shoes during a 1st commercial exchange:
  - ✓ What is the context of the company? (value chain, competition, technological trends, etc.)
  - ✓ How could you generate added-value for them using potential of new technological enablers? (e.g., time-series, machine learning for tabular data, NLP, etc.)
  - ✓ How will the mission be structured? (roadmap, key steps, meeting with management, etc.)
  - ✓ Can you make a first assessment of the feasibility of your solution? (data visualization, 1st demo, etc.)
  - ✓ How will you leverage the results to provide key business insights?
- ✓ Note that the best solution for your client may not be the development of a custom-made solution, but could be the acquisition of a company, some key partnerships, etc.
- ✓ Synthesize your work in a commercial exchange (up to 20 slides)
- ✓ Upload your work on the Sharepoint (presentation, code, etc: see details at the end of this presentation)
- ✓ Present to the jury and prepare for questions

The Right Price

How to estimate a property price?

The Endless Line

How to forecast waiting times in a theme park?

The Right Price

improving definition and computation of mutability score in Île-de-France

Context: the potential client, a player in real-estate industry, wants to optimize its whole value chain, especially the purchase/sale price estimation

Value chain of a real estate development project

For illustration purposes

Prospection → Construction → Operation → Renovation → Sale

What can be constructed?

- *Data:* PLU (Plan Local d'Urbanisme)

What is constructed today?

- *Data:* Databases of constructed buildings (height, areas, ..)

What is purchase/sale prices today?

- *Data:* Databases of historical transactions

Scope of the supercase

What is the willingness to sell/buy?

- *Data:* NA

- Note that a price is useless without a related typology/area

E.g. In the same location a 60m² flat could be sold at 6000€/m² and a 40m² flat at 6500€/m²

Sources: eleven strategy

Objectives: The client wants to correctly estimate the price of a land in order to identify the best opportunities

Scope of the case study

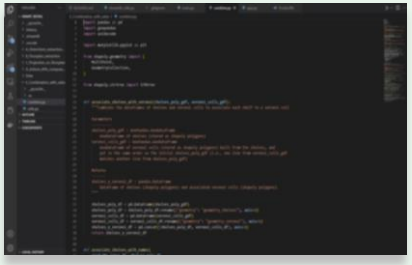
1

How to accurately predict the selling price of properties in a given land parcel?

2

How to leverage this information to give strategic recommendations to the client?

Deliverables



1. The code used to build the demo tool

2. A visual dashboard to present the results to the client

3. A "client-ready" deck of PowerPoint slides

Sources: eleven strategy

Data available: you have access to geo-localized data from official mutation databases in Île-de-France, thereby providing valuable data sources with large and various information on the properties

Note that as in any data science project, the data may require further data engineering before being fully leverageable

datemut	anneemut	moismut	coddep	libnatmut	vefa	valeur fonciere	codtypebien	libtypbien	longitude	latitude	nbdispo	nblot	nbcomm	l_codinsee	nbsection
22/10/2018	2018	10	75	Vente	FALSE	147000.0	121	UN APPARTEMENT	2.3449403	48.860205	1	1	1	75101	1
26/10/2015	2015	10	75	Vente	FALSE	95000.0	131	UNE DEPENDANCE	2.3304056	48.866149	1	1	1	75101	1
13/06/2019	2019	6	75	Vente	FALSE	1900000.0	152	BATI MIXTE - LOGEMEI	2.3435634	48.861828	1	0	1	75101	1
20/04/2017	2017	4	75	Vente	FALSE	1509000.0	121	UN APPARTEMENT	2.3375203	48.865924	1	2	1	75101	1
06/03/2015	2015	3	75	Vente	FALSE	28250.0	131	UNE DEPENDANCE	2.3436309	48.860933	1	1	1	75101	1
01/08/2017	2017	8	75	Vente	FALSE	500000.0	121	UN APPARTEMENT	2.3427047	48.861218	1	1	1	75101	1
03/07/2019	2019	7	75	Vente	FALSE	367000.0	121	UN APPARTEMENT	2.3403178	48.863702	1	1	1	75101	1
27/10/2016	2016	10	75	Vente	FALSE	90000.0	121	UN APPARTEMENT	2.3487978	48.863630	1	2	1	75101	1
23/11/2018	2018	11	75	Vente	FALSE	135000.0	121	UN APPARTEMENT	2.3354345	48.866459	1	1	1	75101	1
26/08/2016	2016	8	75	Vente	FALSE	190000.0	121	UN APPARTEMENT	2.3416377	48.864750	1	1	1	75101	1
28/12/2017	2017	12	75	Vente	FALSE	300000.0	14	ACTIVITE	2.3473709	48.864122	1	2	1	75101	1
11/06/2014	2014	6	75	Vente	FALSE	730000.0	121	UN APPARTEMENT	2.3316604	48.864810	1	2	1	75101	1
02/05/2018	2018	5	75	Vente	FALSE	935000.0	121	UN APPARTEMENT	2.3293296	48.865974	1	1	1	75101	1
11/05/2016	2016	5	75	Vente	FALSE	535000.0	121	UN APPARTEMENT	2.3468805	48.859271	1	1	1	75101	1
07/10/2016	2016	10	75	Vente	FALSE	339050.0	121	UN APPARTEMENT	2.3361317	48.865615	1	1	1	75101	1
11/07/2018	2018	7	75	Vente	FALSE	413438.0	121	UN APPARTEMENT	2.3334257	48.864586	1	2	1	75101	1
22/10/2018	2018	10	75	Vente	FALSE	3327000.0	14	ACTIVITE	2.3407276	48.862311	1	3	1	75101	1
06/02/2018	2018	2	75	Vente	FALSE	650000.0	122	DEUX APPARTEMENTS	2.3331821	48.864667	2	2	1	75101	1
04/09/2018	2018	9	75	Vente	FALSE	375000.0	14	ACTIVITE	2.3452226	48.860565	1	1	1	75101	1
09/02/2015	2015	2	75	Vente	FALSE	163000.0	121	UN APPARTEMENT	2.3413226	48.865097	1	2	1	75101	1
18/06/2020	2020	6	75	Vente	FALSE	768490.0	121	UN APPARTEMENT	2.3437107	48.863758	1	1	1	75101	1
07/06/2017	2017	6	75	Vente	FALSE	15000.0	14	ACTIVITE	2.3428064	48.861055	1	1	1	75101	1
13/11/2014	2014	11	75	Vente	FALSE	480000.0	121	UN APPARTEMENT	2.3413863	48.861495	1	1	1	75101	1
30/03/2018	2018	3	75	Vente	FALSE	823000.0	121	UN APPARTEMENT	2.3330651	48.863992	1	2	1	75101	1
14/09/2015	2015	9	75	Vente	FALSE	250000.0	121	UN APPARTEMENT	2.3448141	48.858214	1	1	1	75101	1
16/02/2018	2018	2	75	Vente	FALSE	2873000.0	122	DEUX APPARTEMENTS	2.3354345	48.866459	2	3	1	75101	1
11/03/2019	2019	3	75	Vente	FALSE	525000.0	121	UN APPARTEMENT	2.3356954	48.865197	1	2	1	75101	1

Optional: Bonus point

✓ How would you have geo-localized this data by yourself?

Resources : You are free to use any resources you want, here are some recommendations to help you get started

Languages

python™

We highly recommend you use Python even though same kind of results could be achieved with similar tools (with R for instance)

Relevant libraries

scikit learn

To develop a wide range of ML models

GeoPandas

To use geo-localized visualization tools

Rtree

To use geo-localized advanced ML models

Streamlit

To efficiently develop a dashboard / front-end

For information: the origin source of the data

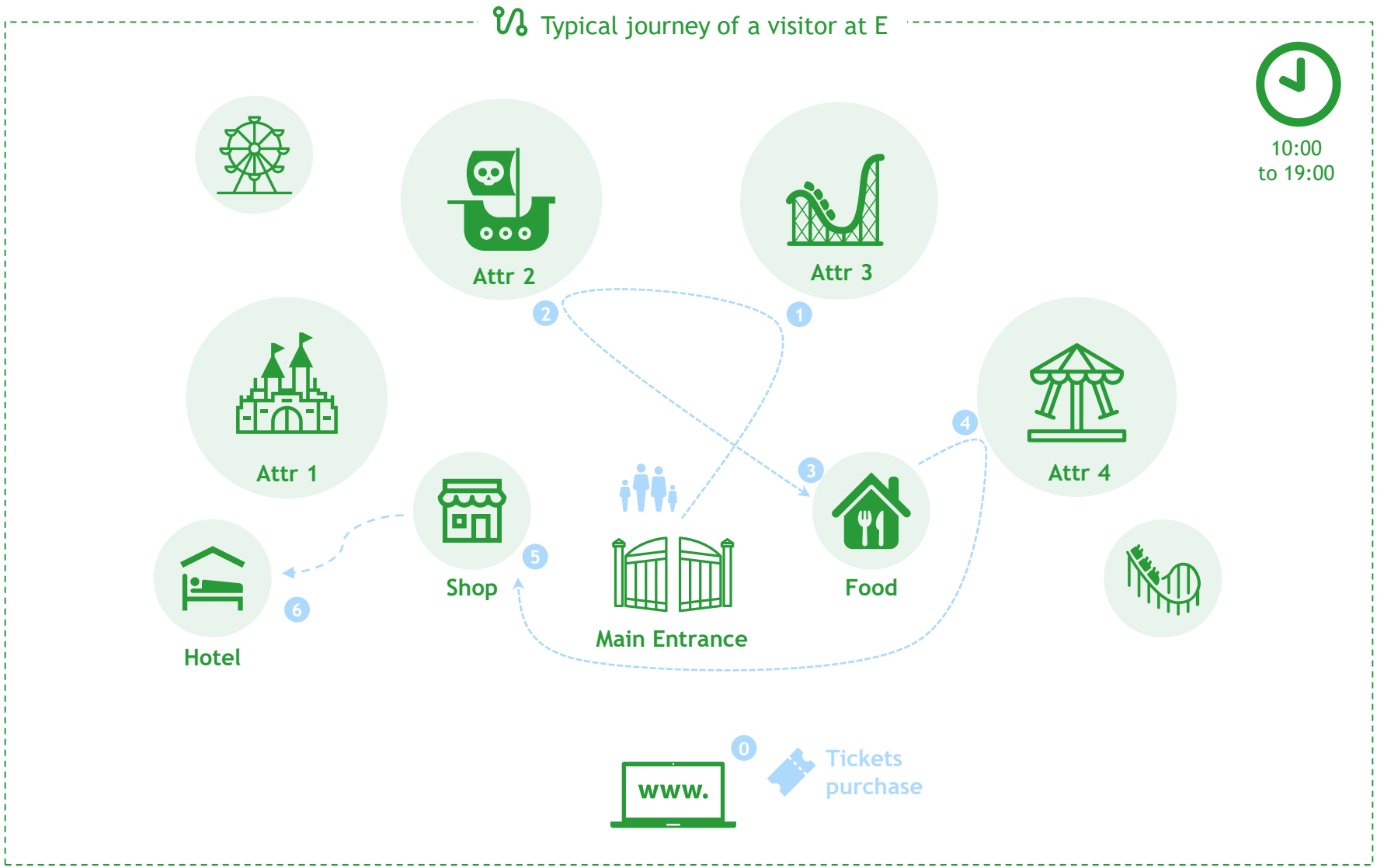
AGENDA

1. About eleven
2. Structure of a commercial exchange
3. Case presentations
   a) The Right Price
   b) The Endless Line
4. General information
   a) Expected output
   b) Practical information

The Endless Line

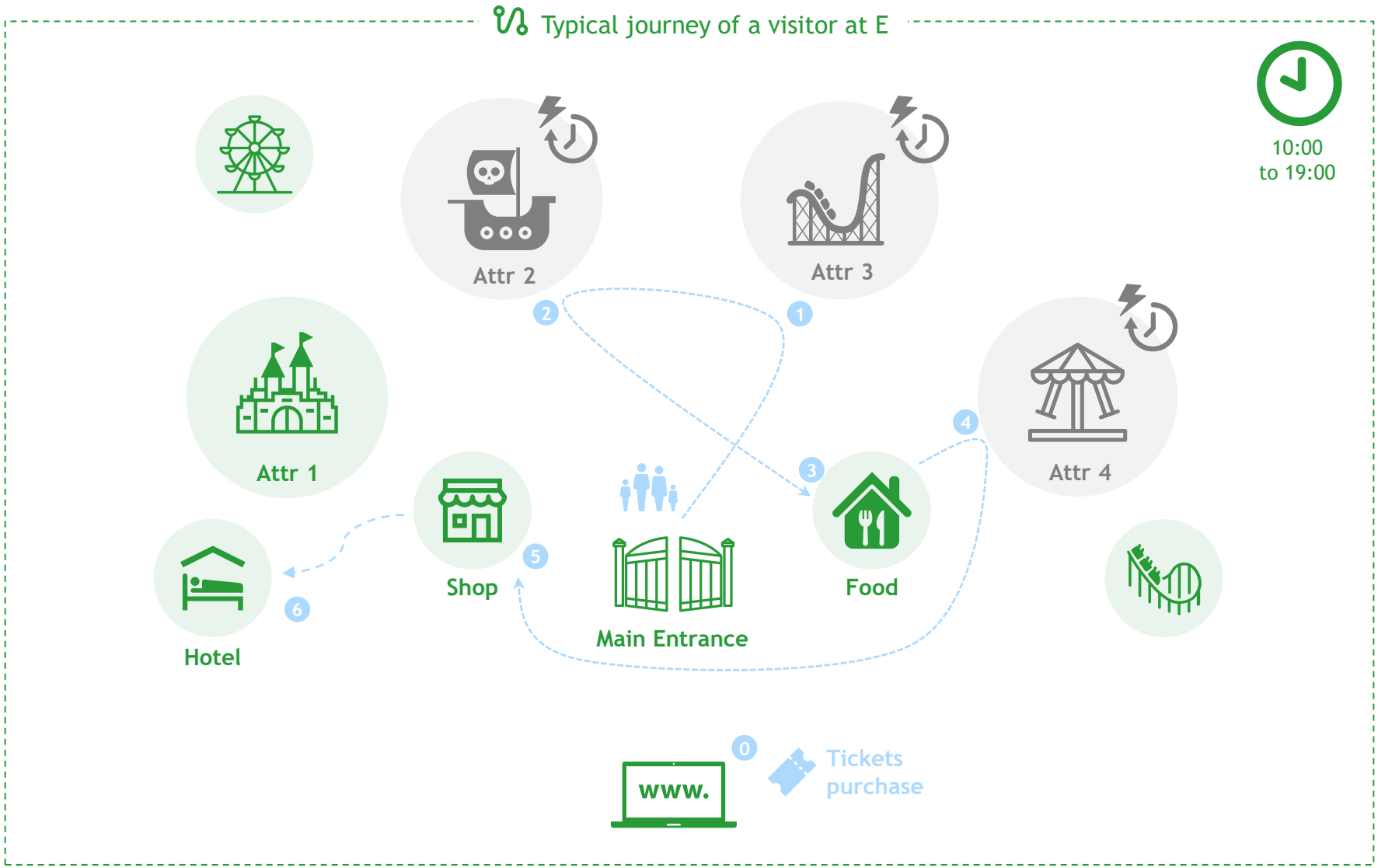
Forecasting waiting times in a theme park to improve visitor experience

Context: E, a global theme park, is experiencing a significant increase of waiting times at attractions, which affects visitor satisfaction (1/3)



Sources: eleven strategy

Context: E, a global theme park, is experiencing a significant increase of waiting times at attractions, which affects visitor satisfaction (2/3)



Sources: eleven strategy

Context: E, a global theme park, is experiencing a significant increase of waiting times at attractions, which affects visitor satisfaction (3/3)

Typical journey of a visitor at E

10:00
to 19:00

Attr 3

Attr 4

Food

Shop

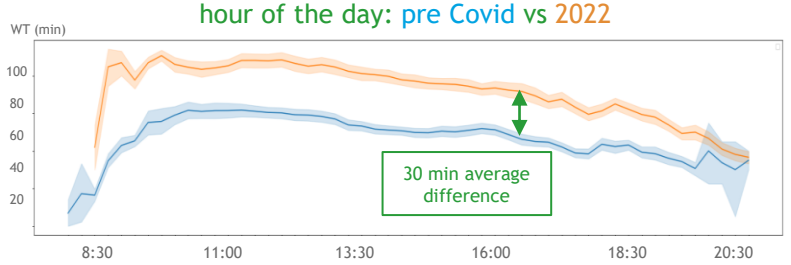
Main Entrance

Hotel

www.

Tickets
purchase

Average waiting time at attraction 3 at every hour of the day: pre Covid vs 2022



Major Pain point : significant increase of waiting times since pre-covid era resulting in degraded visitor experience and dissatisfaction

Sources: eleven strategy

Objectives: E, therefore, wants to accurately forecast waiting times for its attractions and identify use cases to leverage this information to improve the park's KPIs

Scope of the case study

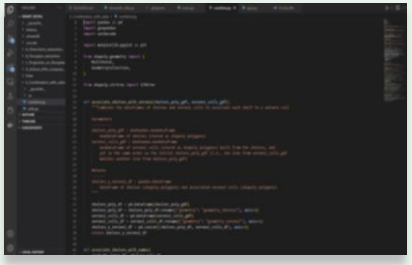
1

How to accurately forecast attractions waiting times?

2

How to leverage this information to enhance E's KPIs?

Deliverables



1. The code used to build the demo tool

2. A visual dashboard to present the results to the client

3. A "client-ready" deck of PowerPoint slides

Sources: eleven strategy

Objectives: E, therefore, wants to accurately forecast waiting times for its attractions and identify use cases to leverage this information to improve the park's KPIs

Scope of the case study

1

How to accurately forecast attractions waiting times?

The client is looking for medium/long term forecasts, assuming normal operation of the attractions. Therefore, make sure to remove any data related to any unplanned event

Deliverables

1. The code used to build the demo tool

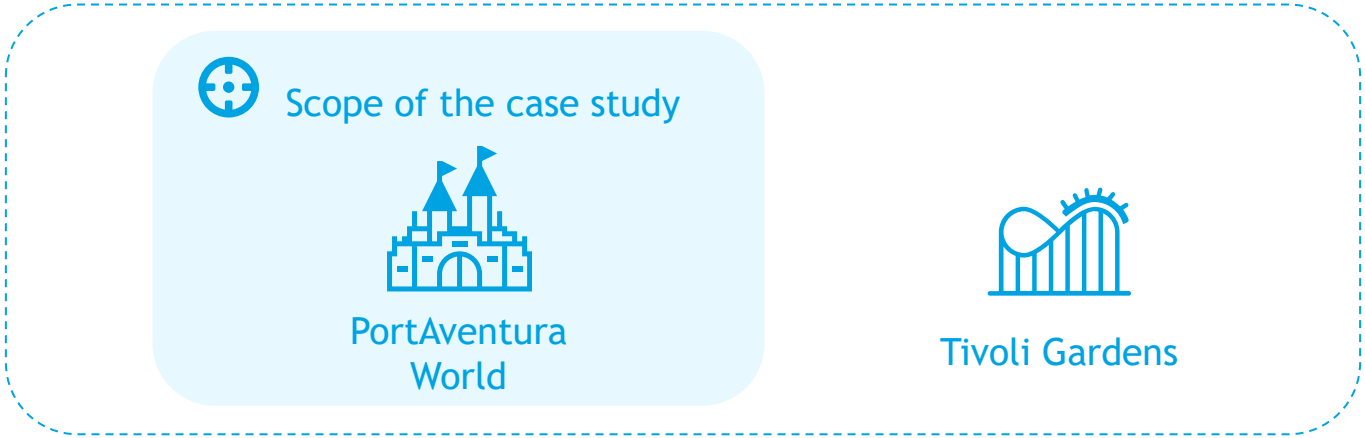
2. A visual dashboard to present the results to the client

3. A "client-ready" deck of PowerPoint slides

Sources: eleven strategy

Data available: you have access to past waiting times, parks' attendance, weather data, schedule of parades and opening/closing times

E operates two theme parks in the same location: in this case study, we will focus on waiting times at **PortAventura World**



You have access to five datasets to perform your analyses and build your models

waiting_times.csv (1)

attendance.csv (2)

entity_schedule.csv (3)

weather.csv (4)

parade_night_show.csv

link_attraction_park.csv

Data available: past waiting times are provided for each attraction at a granularity of 15 minutes

15 minutes time slots

Waiting time

WORK_DATE	DEB_TIME	DEB_TIME_HOUR	FIN_TIME	ENTITY_DESCRIPTION_SHORT	WAIT_TIME_MAX	NB_UNITS	GUEST_CARRIED	CAPACITY	ADJUST_CAPACITY	OPEN_TIME	UP_TIME	DOWNTIME	NB_MAX_UNIT
01/01/2018	01/01/2018 21:00	21	01/01/2018 21:15	Roller Coaster	0	2.0	0.0	0.0	0.0	0	0	0	2.0
01/01/2018	01/01/2018 19:30	19	01/01/2018 19:45	Bumper Cars	5	18.0	148.0	254.749	254.75	15	15	0	18.0
01/01/2018	01/01/2018 22:30	22	01/01/2018 22:45	Rapids Ride	0	1.0	0.0	0.0	0.0	0	0	0	2.0
01/01/2018	01/01/2018 12:45	12	01/01/2018 13:00	Crazy Dance	5	1.0	46.0	250.001	250.0	15	15	0	1.0
01/01/2018	01/01/2018 17:00	17	01/01/2018 17:15	Skyway	5	15.0	92.0	211.5	198.25	15	15	0	16.0
01/01/2018	01/01/2018 18:15	18	01/01/2018 18:30	Free Fall	50	3.0	0.0	0.0	0.0	0	0	0	3.0
01/01/2018	01/01/2018 13:30	13	01/01/2018 13:45	Monorail	70	11.0	145.0	223.751	223.75	15	15	0	11.0
01/01/2018	01/01/2018 15:00	15	01/01/2018 15:15	Roller Coaster	20	2.0	51.0	75.0	75.0	15	15	0	2.0
01/01/2018	01/01/2018 18:00	18	01/01/2018 18:15	Swing Ride	50	12.0	74.0	242.25	242.25	15	15	0	12.0
01/01/2018	01/01/2018 17:15	17	01/01/2018 17:30	Crazy Bus	5	6.0	271.0	353.0	353.0	15	15	0	6.0
01/01/2018	01/01/2018 13:15	13	01/01/2018 13:30	Drop Tower	5	16.0	41.9999	140.25	140.25	15	15	0	16.0
01/01/2018	01/01/2018 18:45	18	01/01/2018 19:00	Spinning Coaster	45	6.0	309.0	526.25	526.25	15	15	0	6.0
01/01/2018	01/01/2018 21:00	21	01/01/2018 21:15	Monorail	0	11.0	0.0	0.0	0.0	0	0	0	11.0
01/01/2018	01/01/2018 11:30	11	01/01/2018 11:45	Scooby Doo	60	36.0	162.0	425.0	425.0	15	15	0	36.0
01/01/2018	01/01/2018 19:30	19	01/01/2018 19:45	Superman Ride	0	2.0	0.0	0.0	0.0	0	0	0	3.0
01/01/2018	01/01/2018 17:30	17	01/01/2018 17:45	Spiral Slide	0	2.0	37.0	75.0	75.0	15	15	0	2.0
01/01/2018	01/01/2018 22:30	22	01/01/2018 22:45	Inverted Coaster	0	1.0	0.0	0.0	0.0	0	0	0	3.0
01/01/2018	01/01/2018 11:00	11	01/01/2018 11:15	Spinning Coaster	25	5.0	230.0	526.25	438.5	15	15	0	6.0
01/01/2018	01/01/2018 21:30	21	01/01/2018 21:45	Water Ride	15	10.0	0.0	0.0	0.0	0	0	0	11.0
01/01/2018	01/01/2018 12:45	12	01/01/2018 13:00	Water Ride	20	10.0	133.0	247.001	224.5	15	15	0	11.0
01/01/2018	01/01/2018 13:15	13	01/01/2018 13:30	Power Tower	5	16.0	47.0	234.499	220.75	15	15	0	17.0
01/01/2018	01/01/2018 20:15	20	01/01/2018 20:30	Roller Coaster	0	2.0	0.0	0.0	0.0	0	0	0	2.0
01/01/2018	01/01/2018 13:15	13	01/01/2018 13:30	Free Fall	90	3.0	61.0	134.749	134.75	15	15	0	3.0
01/01/2018	01/01/2018 11:30	11	01/01/2018 11:45	Water Ride	15	10.0	130.0	247.001	224.5	15	15	0	11.0
01/01/2018	01/01/2018 11:00	11	01/01/2018 11:15	Top Spin	10	1.0	36.0	288.25	144.25	15	15	0	2.0
01/01/2018	01/01/2018 17:00	17	01/01/2018 17:15	Crazy Bus	5	6.0	264.0	353.0	353.0	15	15	0	6.0
01/01/2018	01/01/2018 12:15	12	01/01/2018 12:30	Log Flume	50	37.0	173.0	429.5	424.5	15	15	0	88.0
01/01/2018	01/01/2018 15:30	15	01/01/2018 15:45	Oz Theatre	10	2.0	80.0	387.5	387.5	15	15	0	2.0
01/01/2018	01/01/2018 18:45	18	01/01/2018 19:00	Circus Train	0	1.0	0.0	0.0	0.0	0	0	0	1.0
01/01/2018	01/01/2018 11:15	11	01/01/2018 11:30	Giant Wheel	55	3.0	188.0	503.75	302.25	15	15	0	5.0

Data available: you also have access to the park's daily overall attendance

USAGE_DATE	FACILITY_NAME	attendance
01/06/2018	PortAventura World	46804
01/06/2018	Tivoli Gardens	20420
02/06/2018	PortAventura World	57940
02/06/2018	Tivoli Gardens	29110
03/06/2018	PortAventura World	44365
03/06/2018	Tivoli Gardens	23727
04/06/2018	PortAventura World	37617
04/06/2018	Tivoli Gardens	15115
05/06/2018	PortAventura World	32438
05/06/2018	Tivoli Gardens	16373
06/06/2018	PortAventura World	28399
06/06/2018	Tivoli Gardens	15831
07/06/2018	PortAventura World	39436
07/06/2018	Tivoli Gardens	16587
08/06/2018	PortAventura World	36459

Data available: The *entity_schedule* dataset contains all information on the opening, closing and rehabilitation works of attractions

REF_CLOSING_DESCRIPTION	ENTITY_DESCRIPTION_SHORT	ENTITY_TYPE	DEB_TIME	FIN_TIME	UPDATE_TIME	WORK_DATE
	Tivoli Gardens	PARK	19/11/2018 10:00	19/11/2018 18:00	20/11/2018 08:24	19/11/2018
	Dizzy Dropper	ATTR	07/04/2022 08:30	07/04/2022 22:04	08/04/2022 08:00	07/04/2022
	Sling Shot	ATTR	28/03/2018 08:37	28/03/2018 18:12	29/03/2018 08:24	28/03/2018
	Gondola	ATTR	11/04/2019 09:55	11/04/2019 20:19	12/04/2019 08:59	11/04/2019
	Monorail	ATTR	29/06/2019 08:30	29/06/2019 20:35	30/06/2019 08:14	29/06/2019
Fermeture Réhab	Top Spin	ATTR	07/04/2019 23:59	07/04/2019 23:59	08/04/2019 07:40	07/04/2019
	PortAventura World	PARK	17/07/2018 08:30	17/07/2018 09:30	18/07/2018 07:48	17/07/2018
	Skyway	ATTR	13/12/2019 08:23	13/12/2019 18:02	14/12/2019 07:59	13/12/2019
	Sling Shot	ATTR	21/07/2018 08:33	21/07/2018 20:13	22/07/2018 07:46	21/07/2018
	Gondola	ATTR	11/11/2019 09:00	11/11/2019 18:22	12/11/2019 07:18	11/11/2019
	Tivoli Gardens	PARK	19/04/2019 08:30	19/04/2019 09:30	20/04/2019 07:43	19/04/2019
	PortAventura World	PARK	28/02/2019 08:30	28/02/2019 09:30	01/03/2019 09:23	28/02/2019
Fermeture Réhab	Kiddie Coaster	ATTR	21/02/2018 23:59	21/02/2018 23:59	22/02/2018 08:36	21/02/2018
	PortAventura World	PARK	18/08/2019 08:30	18/08/2019 09:30	19/08/2019 07:34	18/08/2019
Fermeture Opérationnelle	Oz Theatre	ATTR	04/09/2018 23:59	04/09/2018 23:59	05/09/2018 08:12	04/09/2018
	PortAventura World	PARK	05/02/2020 10:00	05/02/2020 19:00	06/02/2020 08:09	05/02/2020
	Free Fall	ATTR	04/01/2020 08:11	04/01/2020 18:15	05/01/2020 07:52	04/01/2020
	Tivoli Gardens	PARK	04/05/2018 08:30	04/05/2018 09:30	05/05/2018 11:16	04/05/2018
Fermeture Opérationnelle	Oz Theatre	ATTR	24/06/2018 23:59	24/06/2018 23:59	25/06/2018 08:03	24/06/2018
	Giga Coaster	ATTR	08/04/2019 09:25	08/04/2019 21:00	09/04/2019 07:45	08/04/2019
	Tivoli Gardens	PARK	29/01/2020 08:30	29/01/2020 09:30	03/02/2020 15:22	29/01/2020
	Inverted Coaster	ATTR	15/09/2018 09:55	15/09/2018 18:20	16/09/2018 08:38	15/09/2018
	Himalaya Ride	ATTR	05/06/2018 10:00	05/06/2018 23:00	06/06/2018 07:27	05/06/2018
	Water Ride	ATTR	02/05/2019 08:30	02/05/2019 21:14	05/06/2019 09:12	02/05/2019

Data available: The hourly weather at the park was also made available

dt_iso	temp	visibility	feels_like	temp_min	temp_max	wind_gust	rain_1h	rain_3h	snow_1h	snow_3h	clouds_all	weather_main	weather_description	weather_icon
1999-01-01 00:00:00 +0000 UTC	8.33		5.28	8.14	9.32						8	Clear	sky is clear	01n
1999-01-01 01:00:00 +0000 UTC	8.08		5.18	7.94	9.32						6	Clear	sky is clear	01n
1999-01-01 02:00:00 +0000 UTC	8.08		5.38	7.94	8.74						14	Clouds	few clouds	02n
1999-01-01 03:00:00 +0000 UTC	7.31		4.42	7.14	8.62						39	Clouds	scattered clouds	03n
1999-01-01 04:00:00 +0000 UTC	6.91		4.0	6.74	8.32						52	Clouds	broken clouds	04n
1999-01-01 05:00:00 +0000 UTC	5.45		2.35	4.6	7.32						52	Clouds	broken clouds	04n
1999-01-01 06:00:00 +0000 UTC	5.63		2.57	4.6	7.62						57	Clouds	broken clouds	04n
1999-01-01 07:00:00 +0000 UTC	5.64		2.38	3.6	7.32						65	Clouds	broken clouds	04n
1999-01-01 08:00:00 +0000 UTC	5.99		2.69	4.6	6.94						61	Clouds	broken clouds	04d
1999-01-01 09:00:00 +0000 UTC	6.72		3.42	5.6	7.97						83	Clouds	broken clouds	04d
1999-01-01 10:00:00 +0000 UTC	7.01		3.97	5.6	8.77						89	Clouds	overcast clouds	04d
1999-01-01 11:00:00 +0000 UTC	9.41		7.22	8.6	11.77						92	Clouds	overcast clouds	04d
1999-01-01 12:00:00 +0000 UTC	10.98		10.14	10.6	11.47						73	Clouds	broken clouds	04d
1999-01-01 13:00:00 +0000 UTC	10.8		9.92	10.6	12.32						32	Clouds	scattered clouds	03d
1999-01-01 14:00:00 +0000 UTC	12.09		11.34	11.32	12.77						52	Clouds	broken clouds	04d
1999-01-01 15:00:00 +0000 UTC	11.6		10.83	10.92	11.94						42	Clouds	scattered clouds	03d
1999-01-01 16:00:00 +0000 UTC	10.38		9.61	8.77	10.94						32	Clouds	scattered clouds	03d
1999-01-01 17:00:00 +0000 UTC	9.69		7.88	8.32	9.94						8	Clear	sky is clear	01n
1999-01-01 18:00:00 +0000 UTC	7.93		5.59	6.07	8.6						8	Clear	sky is clear	01n
1999-01-01 19:00:00 +0000 UTC	7.69		5.29	6.74	8.32						19	Clouds	few clouds	02n
1999-01-01 20:00:00 +0000 UTC	6.8		4.17	6.6	7.32						79	Clouds	broken clouds	04n
1999-01-01 21:00:00 +0000 UTC	6.56		3.86	6.14	6.72						100	Clouds	overcast clouds	04n
1999-01-01 22:00:00 +0000 UTC	5.91		2.97	5.74	6.32						98	Clouds	overcast clouds	04n
1999-01-01 23:00:00 +0000 UTC	5.91		2.8	5.74	6.32						94	Clouds	overcast clouds	04n
1999-01-02 00:00:00 +0000 UTC	5.78		2.29	5.44	6.32						100	Clouds	overcast clouds	04n
1999-01-02 01:00:00 +0000 UTC	5.91		2.2	5.74	6.32						100	Clouds	overcast clouds	04n
1999-01-02 02:00:00 +0000 UTC	6.74		3.04	5.74	7.32						100	Clouds	overcast clouds	04n
1999-01-02 03:00:00 +0000 UTC	6.64		2.74	6.64	6.92						100	Clouds	overcast clouds	04n
1999-01-02 04:00:00 +0000 UTC	6.91		2.94	6.74	7.32						100	Clouds	overcast clouds	04n

AGENDA

1. About eleven
2. Structure of a commercial exchange
3. Case presentations
    a) The Right Price
    b) The Endless Line
4. General information
    a) Expected output
    b) Practical information

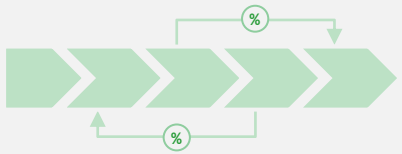
Expected output: how should you structure a commercial exchange?

Reminder

You are expected to deliver the following:

- Your code used to solve the use case, including any relevant dashboard, data analysis, model training, etc. This code should be readable by anyone, with a clear *Readme*, *requirements*, potential *quickstart.py*, etc.
- A "client-ready" PowerPoint presentation of your work, structured as follows:

1 Context & Objectives: what do you understand from the project? Why is the context very complex?



- ✓ Present your understanding of the situation
- ✓ Include the process, the needs, the potential ROI, etc.

➢ c. 2/3 slides

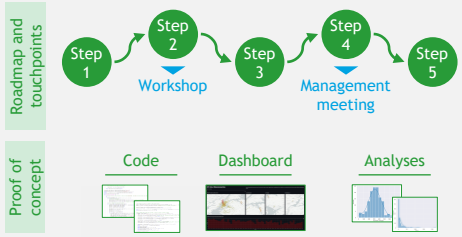
2 Key Success Factors: what would be the reason of your success?

KSF	WHY?	HOW?
Business oriented		
Hands-on approach		
etc.		

- ✓ Explain the reasons of success: strong interaction with client? Deep expertise in AI?

➢ c. 1 slide

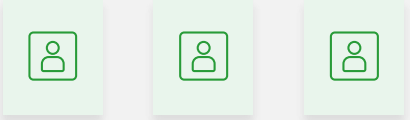
3 Proposed methodology: what could you do for the potential client?



- ✓ What you could do, how, what you have already done, any relevant insight to prove your expertise and how much time do you need for the mission!

➢ c. 6/8 slides

4 Team: who are you and what have you done? Why are you relevant to solve the case?



- ✓ Introduce yourself, your background and explain why you are relevant for this mission

➢ c. 1 slide

1 Context & Objectives: example of potential output

For illustration

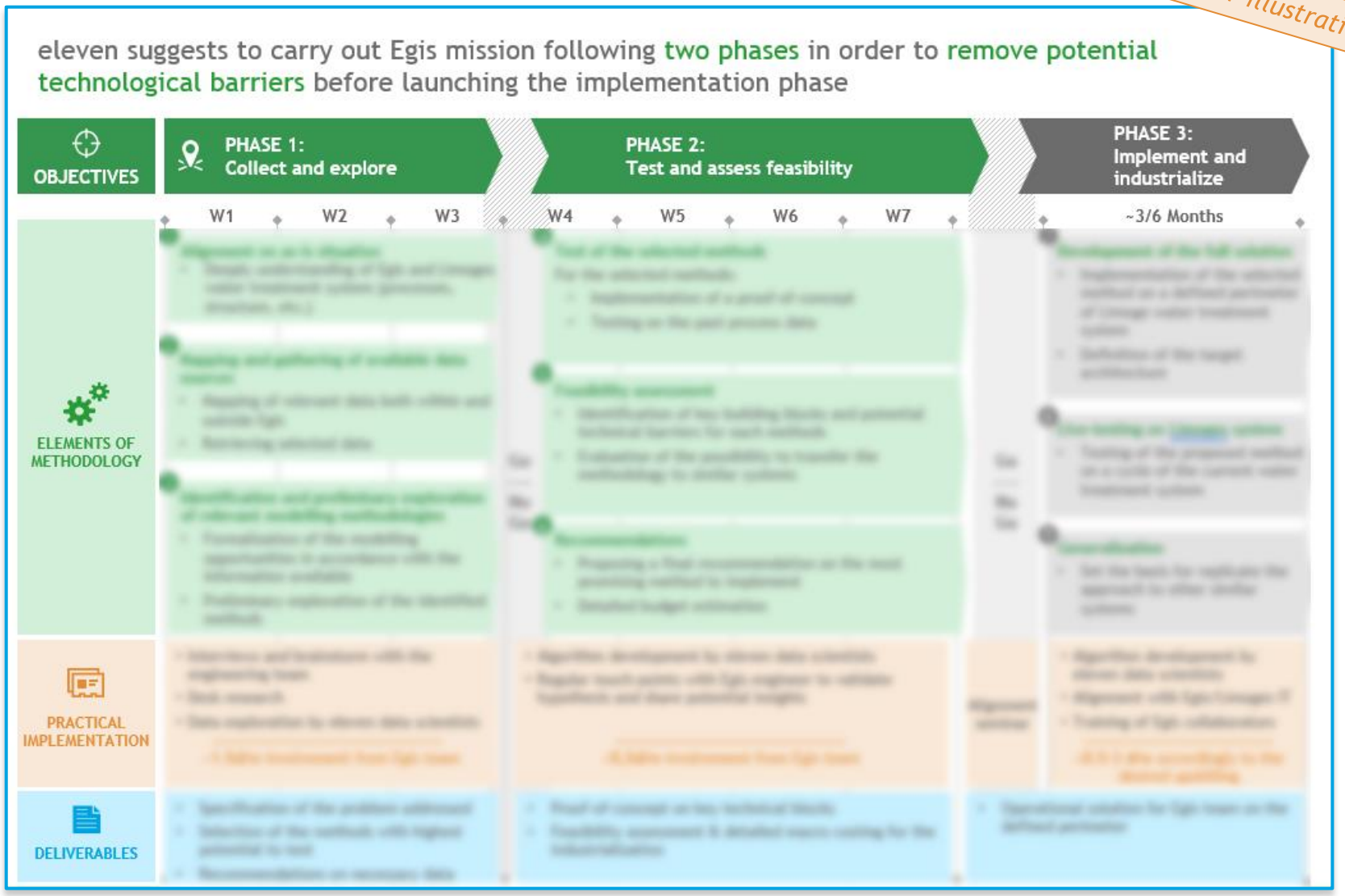
2 Key Success Factors: example of potential output

For illustration

Based on past experiences, eleven has identified five key success factors to successfully launch a first AI initiative

4 Proposed methodology: example of potential output – Detailed roadmap

For illustration



4 Proposed methodology: example of potential output – Detailed roadmap

For illustration

Progressing on three axes, [1] a mapping of requested usages, [2] a gap analysis with what the existing solutions cover, and [3] synthesis of recommendation, the project would extend over a three-month period

Key milestones	Kick-off	Weekly meeting	Weekly meeting	Weekly meeting	First milestone	Weekly meeting	Weekly meeting	Second milestone	Weekly meeting	Weekly meeting	Weekly meeting	Weekly meeting	Final readout
	02/11	TBD	TBD	TBD	01/12	TBD	TBD	12/01	TBD	TBD	TBD	TBD	09/02

4 Proposed methodology: example of potential output – Detailed roadmap

For illustration

The approach is structured around three complementary axes leading to several deliverables at each step of the project

6. Approach

eleven's suggested approach

4 Proposed methodology: example of potential output – Detailed roadmap

For illustration

AGENDA

1. About eleven
2. Structure of a commercial exchange
3. Case presentations
    a) The Right Price
    b) The Endless Line
4. General information
    a) Expected output
    b) Practical information

Proposed schedule for the week: the timing may be short, do not hesitate to split the work between the members of the team

For illustration

	Monday 30st	Tuesday 31st	Wednesday 1st	Thursday 2nd	Friday 3rd
AM session	**Kick-off (*9:40 am* -T305)** **In-depth understanding & Q&A (on-site) (T306 + T308)** ✓ *We will move between the groups to answer the different questions and help you structure the case study*	**Business - T306 & T308** ✓ Present your team and your relevance for the mission ✓ Describe the value chain of the client and identify the potential untapped levers and/or pain points **Data** ✓ Start data exploration and cleaning ✓ Confirm analyses to be led or models to be used (e.g., define target variable, metrics etc.)	**Business** ✓ Work on the story-line of your commercial proposal ✓ Start brainstorming about possible usage of your solution for the client **Data** ✓ Keep building relevant features ✓ Build more advanced models ✓ Select evaluation metrics and setup an hyperparameter optimization pipeline	**Business** ✓ Finish gathering preliminary insights from your models and deduce preliminary recommendations ✓ Finalize structuring your story-line **Data** ✓ Take a step back: evaluate the quality of your models, and select the most appropriate one ✓ Keep building the dashboard	**Business** ✓ Rehearse your pitch to make it impactful for the D-Day ✓ Be prepared with all your speakers knowing their part **Final Pitch (*11:30 am* - T306 + T308)** ✓ Be sure your slides are "client-ready" ✓ Upload both final presentation and final code ✓ Planning on slack **Closing Session (*2:30 pm - T305*)** **Cocktail (*3:30 pm - T033*)**
PM session	**Working Time (T306 + T308)** ✓ Ensure your understanding of the value chain of the potential client ✓ Collect and explore the data ✓ Validate the analysis you would like to perform with the provided data ✓ Split the work between the team ✓ We will be available on-site to answer your questions *Start sliding quickly, last minute slides could lead to poor final work quality*	**Business** ✓ Identify the Key Success Factors ✓ Start working on the methodology you could use to deliver a solution **Data** ✓ Train a baseline model ✓ Build relevant features **Q&A (remote)** ✓ 30' per group ✓ Planning on slack	**Business** ✓ Synthetize the preliminary results of the model ✓ Start evaluating the added-value your solution could provide to your potential client **Data** ✓ Start building a dashboard to present your results ✓ Keep enriching and optimizing your models	**Business** ✓ Complete the expected methodology to answer client's needs **Data** ✓ Finalize your dashboard ✓ Clean your code and write a doc **Q&A (remote)** ✓ 30' per group ✓ Planning on slack	

Detailed schedule for the Q&A sessions

Provisional schedule **

Q&A sessions *

	Q&A sessions (remote) - Tuesday 31st			
	The Right Price		The Endless Line	
3:30pm-4pm	Team 1	Team 2	Team 5	Team 6
4pm-4:30pm	Team 3	Team 4	Team 7	Team 8

	Q&A sessions (remote) - Thursday 2nd			
	The Right Price		The Endless Line	
3:30pm-4pm	Team 1	Team 2	Team 5	Team 6
4pm-4:30pm	Team 3	Team 4	Team 7	Team 8

* Q&A sessions will be led by two eleven consultants per topic: each group will be followed by one consultant throughout the week

** Time slots and groups repartition may be updated during the Hackathon: any change of time will be notified on Slack

Detailed schedule for the pitch sessions

Provisional schedule **

Pitch sessions

	Pitch sessions (T306 + T308) – Friday 3rd	
	The Right Price (T306)	**The Endless Line (T308)**
11:30am-12pm	**Team 1**	**Team 5**
12:10pm-12:40pm	**Team 2**	**Team 6**
12:50pm-13:20pm	**Team 3**	**Team 7**
13:30pm-14:00 pm	**Team 4**	**Team 8**

** Time slots and groups repartition may be updated during the Hackathon: any change of time will be notified on Slack

Final presentation details and best practices:

On Friday 3rd, you will have to present your work in front of a jury during a closed-door session

The modalities of the presentation will be as follow:

- 15min group pitch based on a PowerPoint presentation
- ~10min Q&A session with the jury
- ~10min debrief from the jury

For each case, a winner will be announced. The two winner groups will then present their work to the other students (same modalities with questions from the students)

The presentation must be as professional as possible. Here are some advices and best practices that may be useful:

- Structure your presentation: start by stating the problem that you want to solve, then present the way you tackled it, and finally describe your solution. The "story" of the presentation should be natural and easy to follow
- Be concise and precise: focus on the most important messages, as you only have 15 minutes to present the work achieved. You should limit the number of slides you present (you can still add appendices if needed)
- Be organized as a team: split up the speaking time between the team members beforehand to make it smoother
- Be honest: tell where you encountered issues or challenges
- C-suite level: you should convince both the CEO and the CTO/CDO of the company

Evaluation criteria:

**The contribution of each criteria may not reflect the actual value of each step for a commercial exchange*

Although different in their essence, the cases will be graded based on similar criteria.
NB: any provided code will be tested in order to confirm its good functioning.

Topic		Description	Contribution to the final grade*
Engagement		The engagement of the team during the exercise (how far you've gone, how autonomous you have been, how much you have asked questions when stuck, etc.)	2 points
Business aspect	Presentation quality	The quality of your final presentation: how professional it looks (slide quality), how clear and complete it is (storytelling), how pertinent your answers are, etc.	3 points
Business aspect	Business methodology	The creativity and relevance of the methodology (i.e., scientific approach) you choose regarding the problem you try to solve, and the data provided, the business sense behind your methodology and the pragmatism of your presentation	6 points
Technical aspect	Technical choices	The explanation of your technical choices and your ability to present them in non-technical terms	3 points
Technical aspect	Model efficiency or Analysis relevance	The performance of your model (specific to each case), the relevance for the problem in question, the quality of the analysis led	5 points
Technical aspect	Code good practices	Your code must be well structured, easy to run and easy to understand with clear readme and requirements.	1 point

Please note that all groups will be graded at the end of the week

The Slack workplace

For this challenge, we opened a Slack workplace for you to ask your questions when eleven consultants are not on campus

On this workplace, you will find three channels:

1) **général**: for all questions and information related to the organization of the challenge
2) **TheRightPrice**: for all questions specifically related to *TheRightPrice* case
3) **TheEndlessLine**: for all questions specifically related to *TheEndlessLine* case

Additional information may also be pinned in these channels (schedules, classroom numbers, etc.)

Please use the right channel to ensure fluidity of the interactions

Before asking something, also make sure that the requested information has not been given already ;)

You may download the slack application on your device or access it via your usual browser

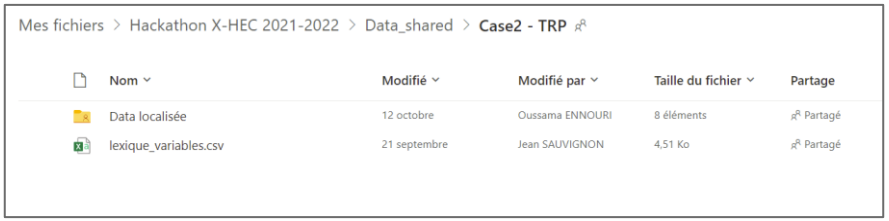
Download instructions & submission process

How to download datasets ?

You can download datasets and potential additional information at the following links:

- **Case #1: TEL** - get your files here

- **Case #2: TRP** - get your files here



How to submit your works ?

Each group will receive a link by email with a Sharepoint folder to submit their assignment (both Presentation + Code)

Notes:

- You can organize your folder as you wish.
- You can keep old files that should not be submitted to the jury in a *0_Archives* folder

Now is your turn!

- ✓ Find your groups of 5/6 people and choose a subject
- ✓ Put yourself in a data consultant's shoes: start structuring your approach and start exploring the data
- ✓ We will be here until 4:00 pm to validate your approach and answer your questions

Mamoun, coach for « The Endless Line »

Oussama, coach for « The Endless Line »

Charles, coach for « The Right Price»

Raphaël, coach for « The Right Price»

Enjoy the challenge!