

EXPLORE || DIGITAL SKILLS

Visual Storytelling

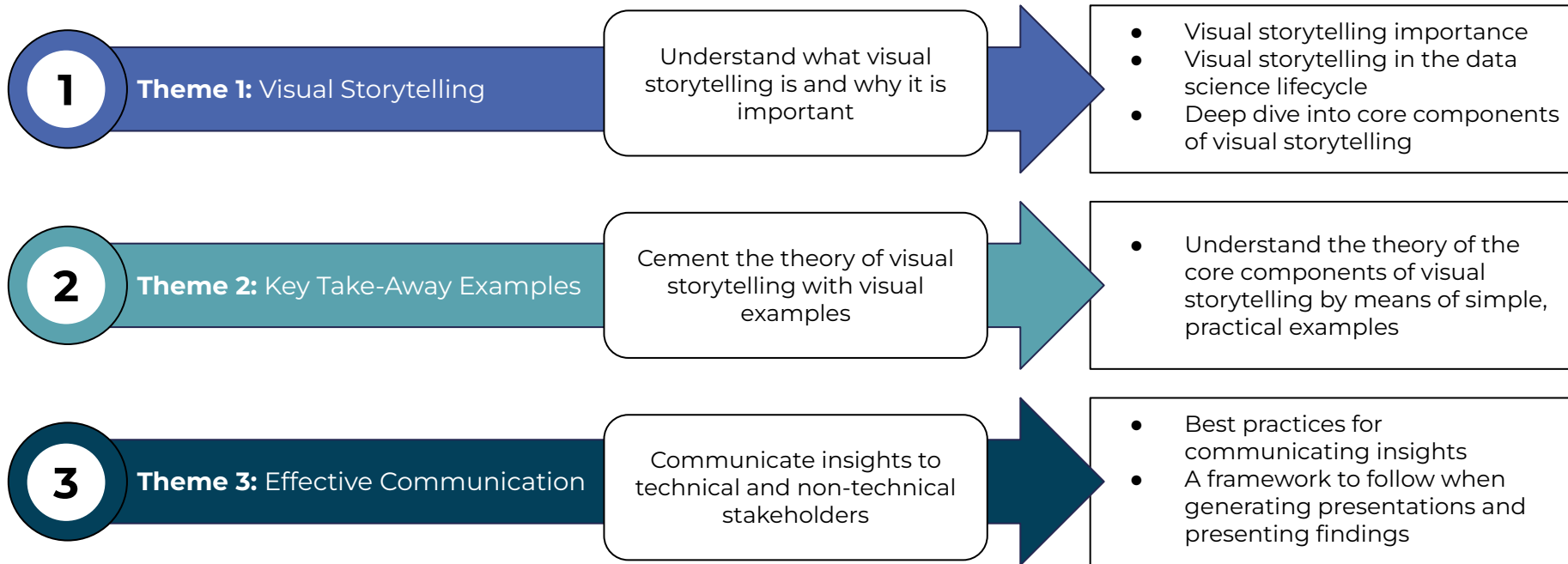
Train Overview

In this train we will cover the following:

Theme

Objective

Outcome



A full-page background image of an astronaut in a white spacesuit floating in space against a backdrop of stars and nebulae. The astronaut is positioned on the right side of the frame, facing left.

The Art of Visual Storytelling

Key Concepts of Visual Storytelling Deep Dive

The Explore Framework for Visual Storytelling

Conclusion

What is Visual Storytelling and Why is It Necessary?



Visual Storytelling:

Is the art of communicating messages through visual media. Think of a data scientist communicating his findings to his superior by means of a Powerpoint presentation.

Fun facts about visual storytelling:



It takes only 13 ms for the brain to process an image



80% of people remember what they see, with just 10% remembering what they hear, and 20% remembering what they read



Up to 90% of the information processed by the brain is visual

As a data scientist, you will constantly be communicating your findings, analyses, etc. with a broad range of stakeholders - internal, external, technical and non-technical.

This communication of findings will oftentimes come in the form of a presentation and it is therefore an essential skill in the arsenal of any skilled data scientist

Where does Visual Storytelling Fit In?

Visual storytelling cuts across all streams of any data science project. To be effective in your visual storytelling you need three things: 1) a clear message, 2) a structured narrative, and 3) a professional presentation

In the context of

**A Clear Purpose or
Desired Outcome**

**A Concise Well Thought Out
Storyline**

**Data Driven Insights and
Recommendations**

What do we do?

1 Message

What is the message you want to leave with your audience?

2 Narrative

What is the story and exploration that brought about your insights?

3 Style

Stick to a professional design, consistent colour and formatting.

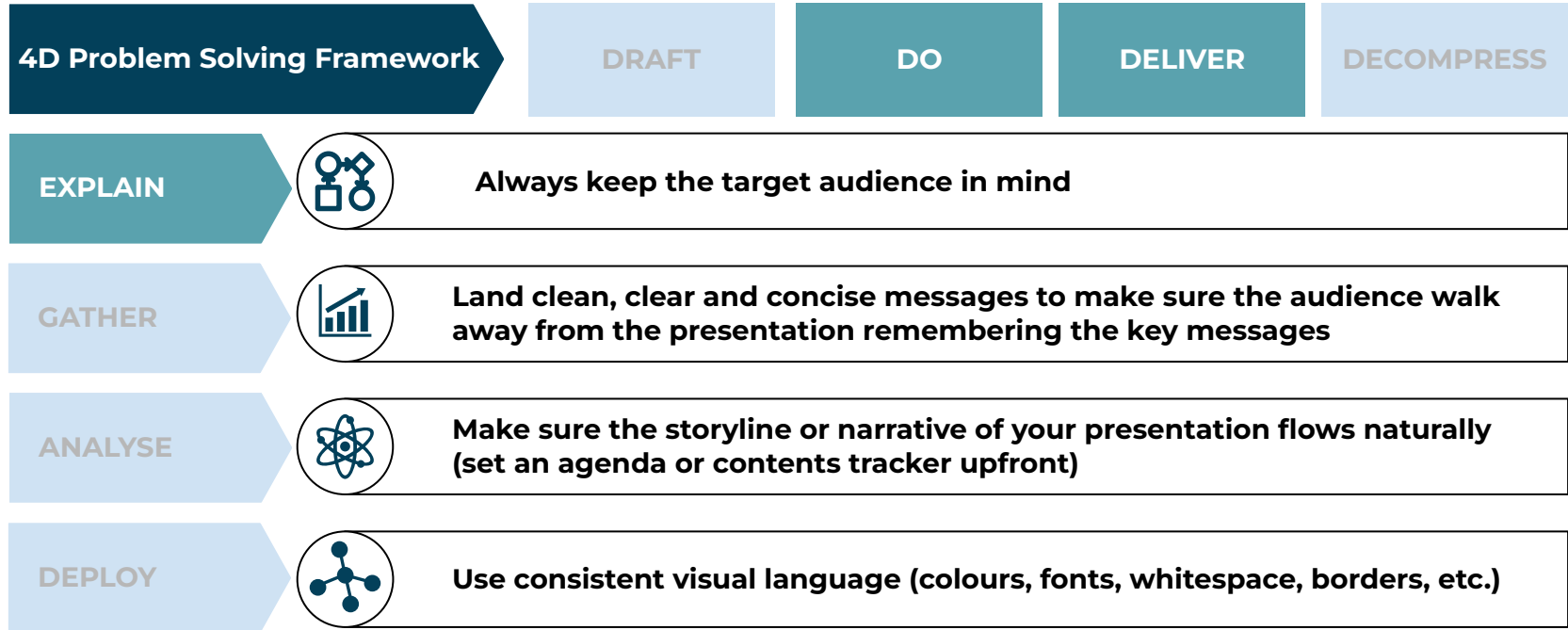
The Position of Visual Storytelling in the EGAD Framework

In the EGAD Framework visual storytelling forms part of the Explain - DO and Deliver elements

4D Problem Solving Framework	DRAFT	DO	DELIVER	DECOMPRESS
EXPLAIN	Problem Statement	Storytelling	Communication	Feedback
GATHER	Problem Landscape	Databases	Data Engineering	Insights
ANALYSE	Equation of Value	Programming	Solution Governance	Performance Metrics
DEPLOY	Project Management	Version Control	Production	Maintenance

EGAD Framework - Visual Storytelling and Communication

In the Explain - DO and Deliver sections, you have four main objectives when it comes to visual storytelling



Key Concepts of Visual Storytelling

When building a presentation it is important to check for messaging, clarity, structure and format

The **structure** refers to the **storyline** or plot **of your presentation**. It is important to always make sure your **presentation has a logical flow**.

That is, you should have a **sequential structure** where an Idea(s) **builds upon** the **information conveyed in the previous slides**.

Structure

When building a presentation it is important to **keep the audience in mind**. The **message** should be **tailored for the target audience**.

Considerations include **audience familiarity with the topic**, jargon, maturity, etc. It is also important not to clutter a slide. A single slide should have a **clean, clear and concise message**.

Messaging and Clarity

When it comes to presentations, **consistency in format is key**. That means **all slides should have the same font, position of headings, taglines, footers and logos**. It also means consistency in layout.

All slides should be setup to **read from left to right**, top to bottom to **keep the reader's full attention** throughout the presentation.

Format and Layout

A **powerful presentation has a clean layout** with **consistent whitespace** and **consistent format**.

That means that **all the slides** in the deck have the **same structure**, color palette, shapes, borders, boundaries, etc.

Look and Feel

The Art of Visual Storytelling





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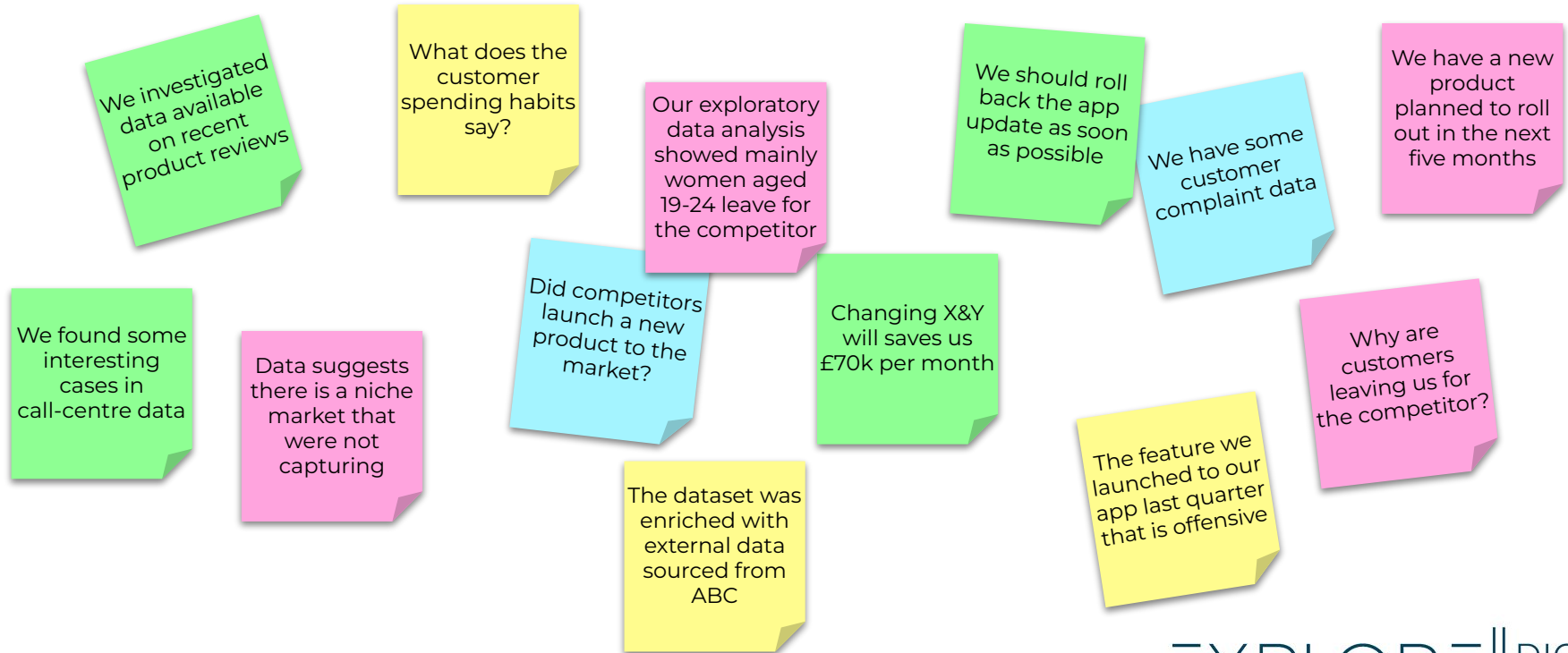
Storyline and Narrative of Presentation

Studies show that audiences retain structured information 40% more accurately than unstructured information

Storyline Considerations	Details
 Structure your Information	Logically position, distribute, highlight and introduce the information and/or data in your presentation
 Plan your storyline and your messages in each slide	Before starting to build your presentation, take some time to critically consider the structure and underlying messages of your presentation
 Always include a summary, body and conclusion section	At the very least a presentation should always include: a summary slide detailing the major findings in the presentation, a body detailing the high level approach and methodology, and a conclusion pulling everything together
 Tell the story of your findings	Instead of just throwing down screenshots of your analyses on a couple of slides, rather tell the story of your findings. Make sure each slide latches onto the next and builds up to the major findings and conclusion

Storyline and Narrative of Presentation Key Take-Away: Structure Your Narrative

Studies show that audiences retain structured information 40% more accurately than unstructured information



Storyline and Narrative of Presentation Key Take-Away: Structure Your Narrative

Studies show that audiences retain structured information 40% more accurately than unstructured information



- Structure your information to tell a story
- Plan your storyline and message in each slide
- Include a summary and conclusion



*discard what doesn't add to the story

Storyline and Narrative of Presentation Key Take-Away: Structure Your Narrative

Below is an example of the content every *world-class* presentation should have

1

Executive Summary Slide

2

High-Level Problem Background

3

High-Level Problem Introduction

4

Body (Analyses, Findings, Outcomes, etc.)





5

Conclusion

The trick is to **catch your audience's attention** with the single **summary slide** and then **progressively** dive into **how** these outcomes came to be

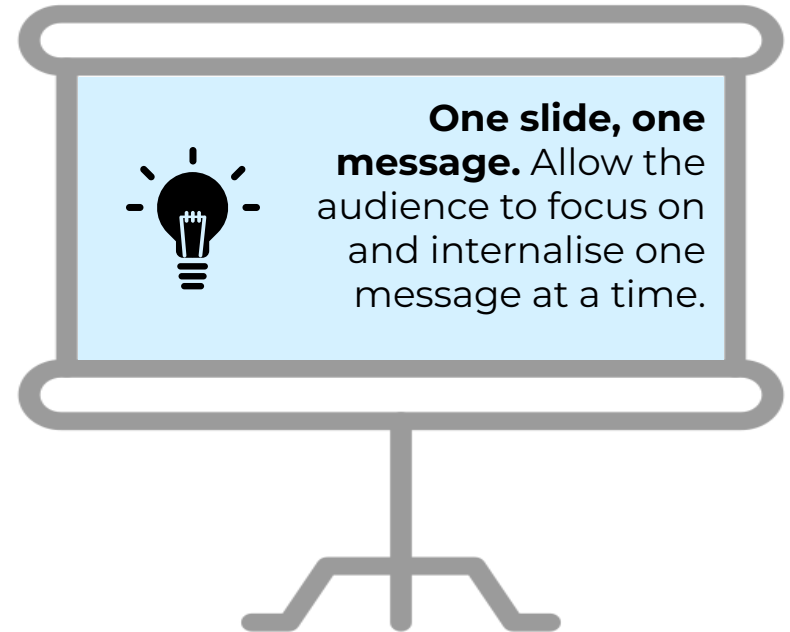
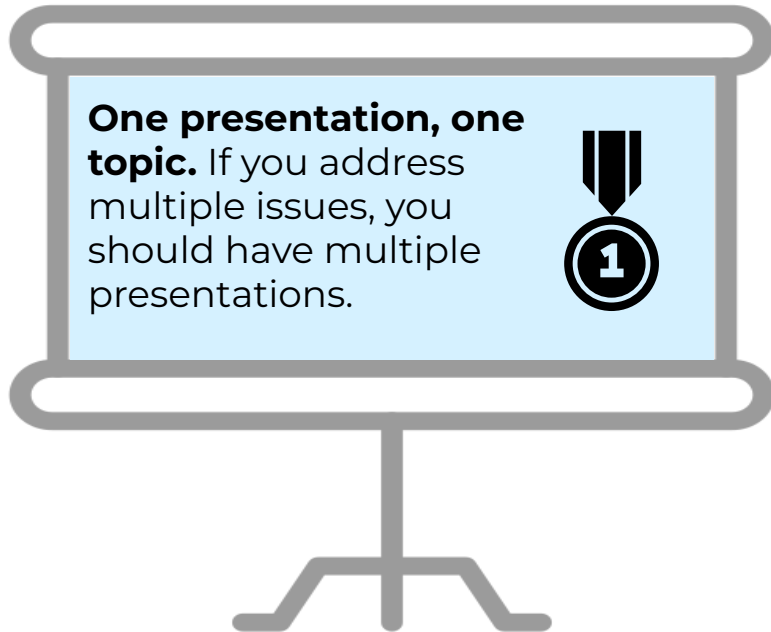
Messaging and Clarity of Presentation

Here your focus should be to land a clear and powerful message in every single slide

Messaging Considerations	Details
 Start with the end in mind	<p>Think of what you want your audience to get out of the presentation, what are the messages you would like to land and what are the important concepts they need to grasp</p>
 Critically look at findings	<p>The next step is to work backwards from the identified key messages you would like to land to the supporting data, analyses and findings that will support or enrich those findings</p>
 Establish best way to deliver message/outcome/finding	<p>Once the above is established, you need to spend time and evaluate what is the best way to deliver the key messages with the supporting data. It might be by means of a video, an infographic, a practical walkthrough, etc.</p>
 Think of the audience	<p>Finally you need to sit back and look at your presentation from the audience's point of view. Think of possible knowledge gaps, missing analyses, additional information and refine, add on or thin your presentation from there</p>

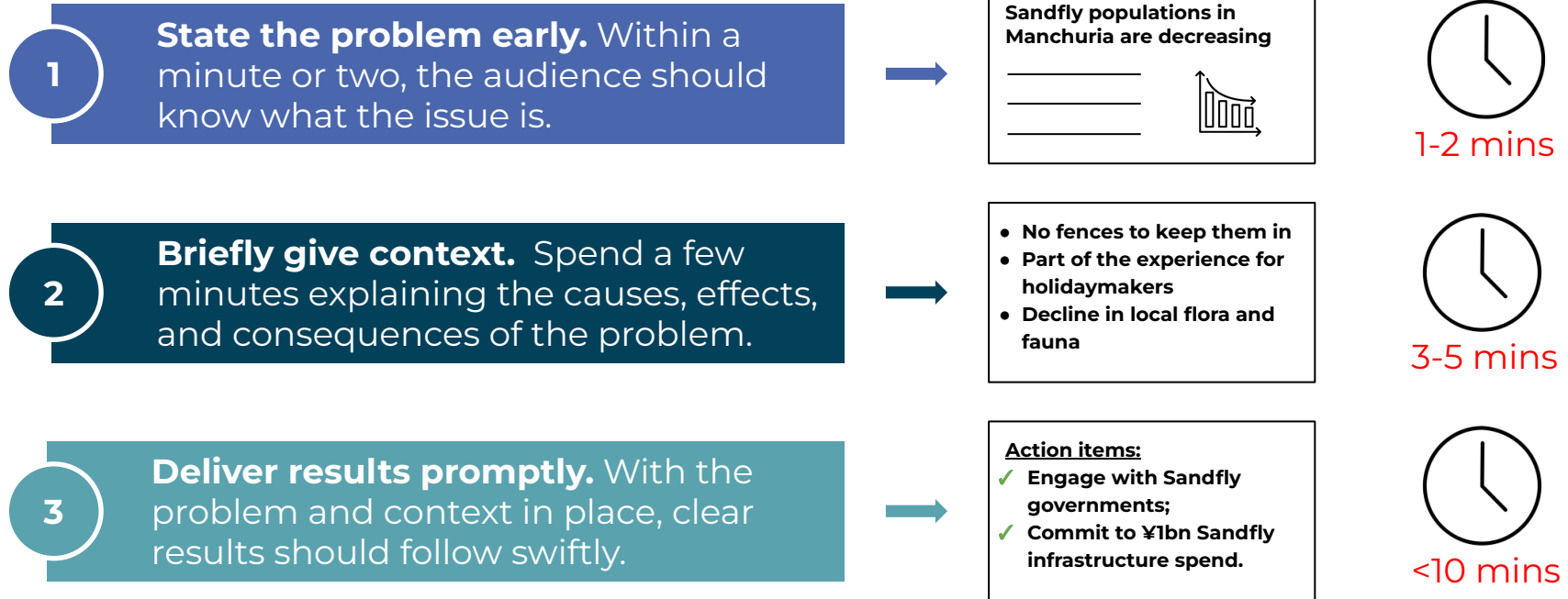
Messaging and Clarity of Presentation Key Take-Away: The One-One Rules

Allow the audience to focus on each key point by limiting the scope of each slide.



Messaging and Clarity of Presentation Key Take-Away: Don't Leave Viewers in Suspense

Make sure you arrive at key problems and results as early on as possible.



Messaging and Clarity of Presentation Key Take-Away: Calibrate the Presentation to the Audience

You'll be presenting to a wide range of interests and expertise; keep your content relevant for all.

Calibrate your jargon

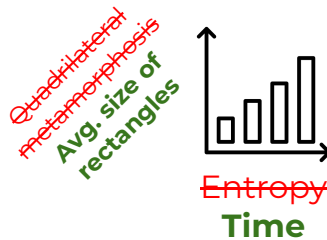


- **Jargon** is domain-specific knowledge;
- You'll have both **technical and non-technical** audience members;
- Use language that they will **all understand**.

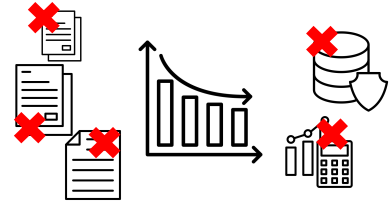
~~Algorithm~~ process

Use intuitive labels

- **Figures** contain a **wealth of information** as they are;
- Use **simple** and intuitive **labels** for axes, and self-explanatory plot **titles**.







Remove unnecessary details



- A **presentation** is necessarily **new information** to your audience;
- Help them to focus on your message by **only including what's necessary**.

Format and Layout of Presentation

The layout and format should, as far as possible, be kept constant throughout the entire presentation. This will ensure that you captivate the attention of the audience.

Format Considerations	Details
	Headings, notes, footers, taglines
	Consistent colour scheme
	Don't overcrowd with figures
	Effectively use whitespace
	Before doing anything, you should develop a master template which will be used as the baseline slide design for all slides in your presentation
	Together with the master template design, it is important to have consistent colors, fonts and font sizes. Choose a color palette and font style and use throughout the presentation. As a rule of thumb do not use more than three different font sizes on a single slide.
	Figures should be used sparingly and should rarely make up more than 50% of a single slide. Figures should be used to stress or highlight a particular point and not as a means to fill the whitespace in a slide.
	There needs to be a balance between whitespace and content. Never try to pack as much information as possible on a slide - rather strike a balance between content and whitespace. Ensure the whitespace is evenly and logically distributed.

Format and Layout of Presentation Key Take-Away: Use rulers, gridlines and guides

Rulers



- You can see and set tabs, move table borders, and line up objects in the document
- Also you can measure stuff

Gridlines



- Show gridlines in the background of your document for perfect object placement

Guides



- Show adjustable drawing guides which can align objects on the slide
- Can have multiple guides and delete guides

Format and Layout of Presentation Key Take-Away: Adjusting and Distributing

Before...

External Analysis

Definition

Macro Analysis



1

Analysis of **uncontrollable factors** that directly have an influence on an organisations **operations, decisions** and **strategies** currently and in the future

Industry Analysis



2

Analysis of the **complexity of a specific industry sector** in order for organisations to **determine their strategic planning**

Competitor Analysis



3

A strategic technique used to review a **companies direct and indirect competitors** in the market

Sector Analysis



4

A review and assessment of the **current condition, performance** and **future trends** of a given sector within South Africa.

After...

External Analysis

Definition

Macro Analysis



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Analysis of **uncontrollable factors** that directly have an influence on an organisations **operations, decisions** and **strategies** - current and future

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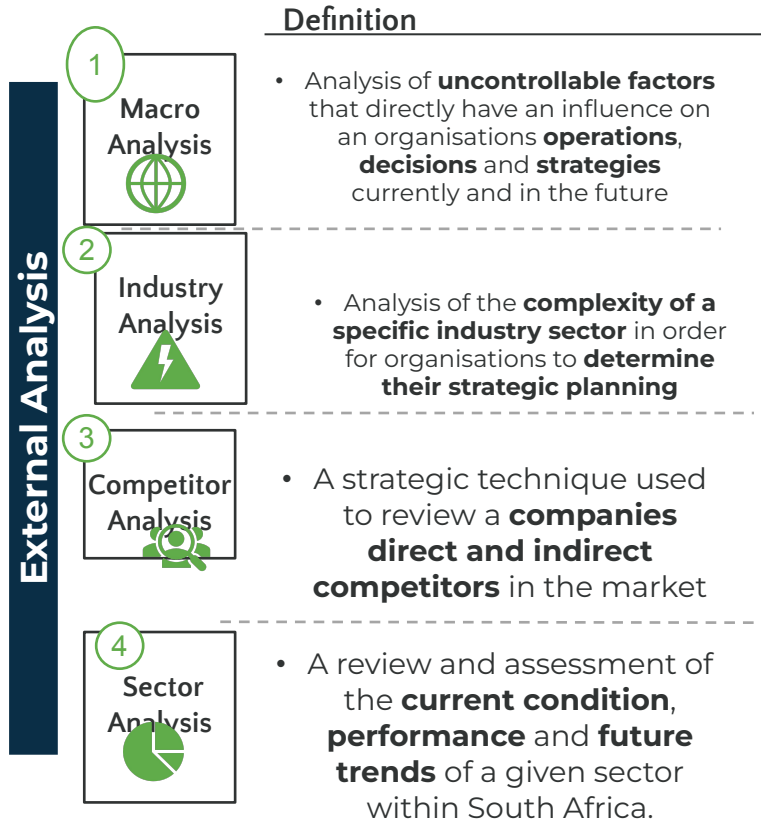
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A review and assessment of the **current condition, performance** and **future trends** of a given sector within South Africa.

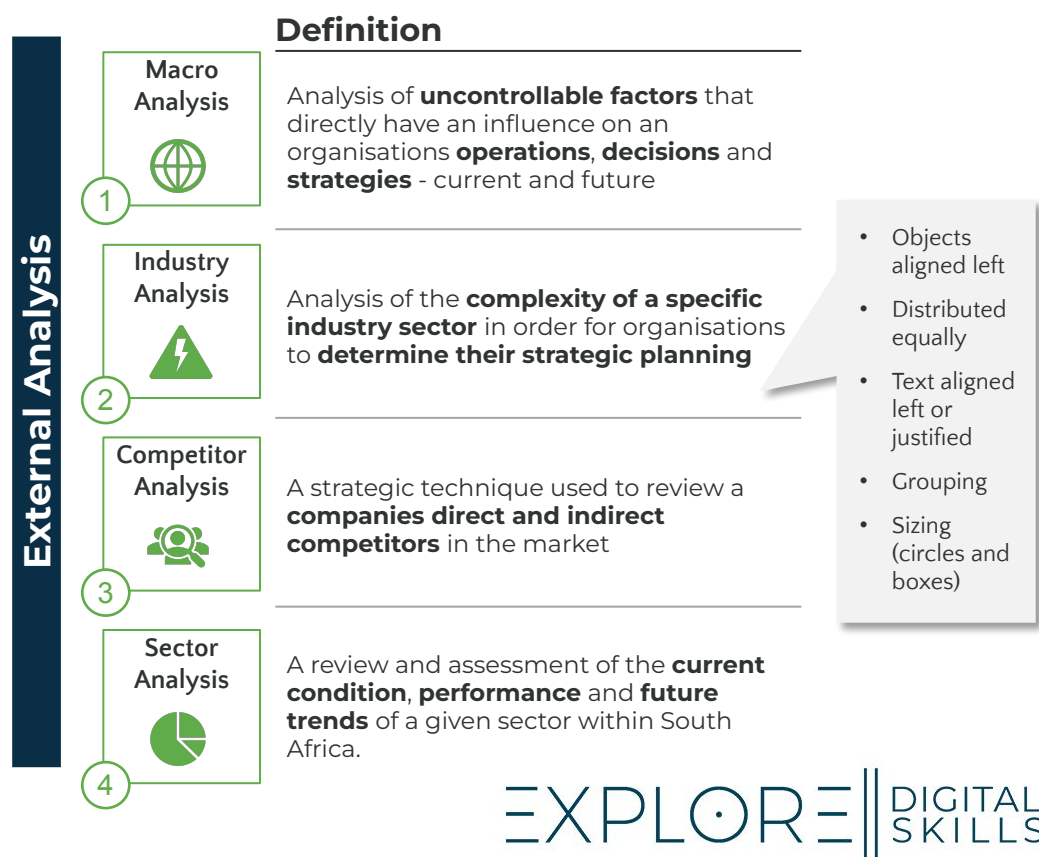
- Objects aligned left
- Distributed equally
- Text aligned left or justified
- Grouping
- Sizing (circles and boxes)

Format and Layout of Presentation Key Take-Away: Adjusting and Distributing

Before...







After...



Look and Feel of Presentation

The look and feel of a slide deck is what sets the difference between an amateur and a professional presentation

Look and Feel Considerations	Details
 Read from left to right	<p>When building slides, make sure that the content of a single slide flows naturally. That is, the slide reads from top to bottom and from left to right. This will ensure the audience can easily follow along.</p>
 Use colored keys to demonstrate differences	<p>Where possible, make use of different color shades to highlight certain differences of groups, categories, etc. Always remember to insert a key to show the reader which color maps to which category or insight.</p>
 Always make use of borders	<p>Set up borders on the master slide template (horizontal and vertical). Consider the whitespace inside the borders as free real estate and use this space to build out the content of your slide. Ensure that nothing overlaps the borders otherwise.</p>
 Use boxes to summarise slide content	<p>There come times when a slide is very dense and heavy with text. When this is the case and the content cannot be summarised, use a small box or thought cloud to call out and summarise the most critical and important findings</p>

Look and Feel of Presentation Key Take-Away: Conclude Conclusively

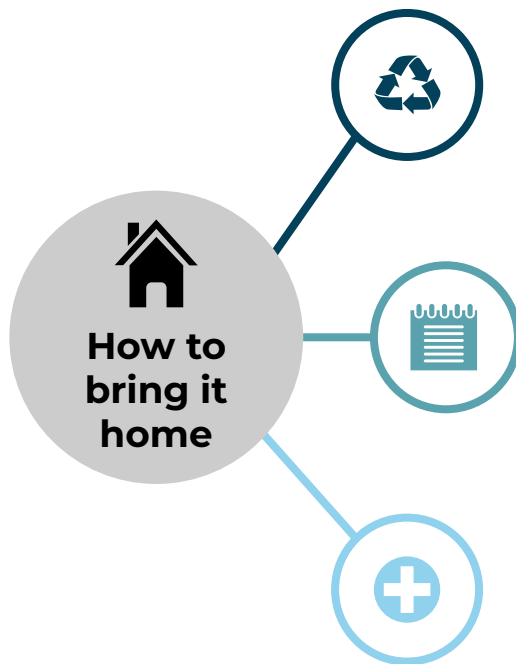
Your audience will likely remember most clearly the last thing you show them: make it count.

Rule of 3 Humans like seeing groups of three items

Colour-coding key takeaways can be helpful

Use **reds** for **negative** results, or what not to do

Use **greens** for **positives**, or what to do



Always include a **clear and concise** conclusion. Consider this section a **summary** of your whole **project**.

- **Lists** are helpful here;
- Bullets of **action items** are memorable;
- **Assign items** to relevant personnel [DS];
- If no action items, list **key takeaways**.

Don't introduce new info in the conclusion. **Anticipate questions** and place answers in an **appendix**, along with technical details, methods, processes, etc.

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The Explore Framework for Visual Storytelling

The S.S.H.P framework can be used to prepare and deliver a world class presentation - Story, Simple, Highlight, and Practise

Definition

1
Story

Rather than seeing a presentation as a report of your findings, see it as **an opportunity to tell the story of your data** and insights. Think of a **logical**, easy to follow **storyline** i.e beginning, middle and end.

2
Simple

At the heart of every good presentation are **two key elements 1) the content and 2) the delivery**. You can have a **world class delivery but** if your **presentation** content is **sluggish** you will **lose** your audience's **attention**.

3
Highlight

Be sure to **effectively land your key messages** and **stress the most important points**. When giving a presentation you have one goal, to **ensure your audience walks away with the key messages**.

4
Practise

It is essential that you **speak with confidence, know your presentation by heart and anticipate audience response**. Always do a dry-run in front of the mirror, to friends and family or any other audience

Effective Tools

Build your presentation structure with the end and key messages in mind

Follow the best practise and general guidelines defined throughout this train

Start, build up to and end with the key messages

As a rule of thumb, run through your presentation at least 5-7 times before the main event

An astronaut in a white spacesuit is shown from the waist up, floating in space. The background is a deep blue and black void filled with numerous small white stars and some faint, wispy green and blue nebulae. The astronaut's helmet is reflective, showing some details of the suit and the surrounding environment. The suit has various straps, buckles, and a life-support system on the back.

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Conclusion

In this train we've touched the following concepts of visual storytelling:

Areas Covered:

**Key Concepts Of Visual
Storytelling**

**World Class Presentation
Delivery**

What We've Learned:

1

**High-Level
Overview**

- What is visual storytelling
- What are the key concepts and elements of visual storytelling

2

Best Practise

- How to create a professional slide deck and how to communicate the insights effectively

3

**How to
Effectively
Deliver a
Presentation**

- A framework that can be used to guide you in building and delivering world class presentations

Appendix



The Purpose of an Appendix

An appendix is there to **include relevant technical slides** to **answer anticipated questions** from the audience. It also serves the purpose of **including relevant information** which **does not perfectly fit** with your **main presentation storyline**.

Where does Visual Storytelling Sit in the Data Science Lifecycle?

Communication in the Data Science Lifecycle



Brainstorm and/or meet with **relevant stakeholders to understand the problem at hand**. Here a data scientist might **communicate possible solutions** to the problem described. The type of communication used by the DS here might come in the form of **whiteboarding or rough sketches**. Also here, the DS might throw together a presentation to communicate outcomes of the meeting with internal stakeholders.

Where does Visual Storytelling Sit in the Data Science Lifecycle?

Communication in the Data Science Lifecycle



In the **data collection phase** the data scientist will **communicate with data custodians and data engineers** in order to find out **where the required data to solve the problem is sitting**. For this purpose, the data scientist might want to throw together a slide deck **detailing the data requirements, the anticipated data schema, architecture, etc to facilitate an efficient engagement with the relevant parties**.

Where does Visual Storytelling Sit in the Data Science Lifecycle?

Communication in the Data Science Lifecycle



In the **data formatting and data engineering** phase, a data scientist might want to **sit with a domain expert in the particular solution field**. To guide the domain expert and **get her/him up to speed with current project objective, status, etc., the data scientist will typically throw together a slide deck** to guide the discussion. This will ensure maximal value is extracted from the session

Where does Visual Storytelling Sit in the Data Science Lifecycle?

Communication in the Data Science Lifecycle



When **performing EDA**, we sometimes run into unexpected results that either does not **align with intuition** or does not make logical sense with respect to the business rules defined in the business understanding phase. When this happens the **data scientist might want to report the findings to his/her manager**. Rather than detailing the entire process followed in a long meeting, a slide deck can be generated and sent to the relevant manager for them to spot any red flags

Where does Visual Storytelling Sit in the Data Science Lifecycle?

Communication in the Data Science Lifecycle



Model **performance, architecture and hyperparameter configuration often need to be sense checked by internal and external stakeholders.** Rather than sitting with each stakeholder individually, the data scientist might build a presentation detailing all aspects of model configuration, training, testing, performance etc. **This way internal and external stakeholders can in his/her own time and individual follow up meetings can be set up as required.**

Where does Visual Storytelling Sit in the Data Science Lifecycle?




Communication in the Data Science Lifecycle



With model deployment there may arise **errors associated with data drift, performance, scalability, ect.** Or it might be time to **decommission a model and replace with a newly developed one.** These decisions usually involve the Chief Data and Chief Technical Officers. To communicate what is required, how the project will be approached and what will be done the **lead data scientist will typically create a slide deck and send through to the C-Suite executives for sign off.**




Problem Solving Framework

The very first step before communicating a solution, is solving a problem - which can be an art in itself. To guide you in your problem solving journey, consider the following six-step process:

Process Step	Discussion	Key Questions/ Considerations
 Problem Id.	In the problem identification phase it is important to understand the ins and outs of the problem. Here you need to focus on the root cause of the problem and understand the need for improvement. Thoroughly understanding the problem will aid you in the solution hypothesis generation phase.	<ol style="list-style-type: none">1. What went wrong?2. How did it go wrong?
 Problem Assessment	Here we critically look at the problem and prioritise main causes of the problem at hand. The prioritised list should run from most likely reason for failure to least likely reason for failure.	For generating the prioritised list, tools such as the five-why-methodology might be a guiding light. Key questions might include: <ol style="list-style-type: none">1. When did it go wrong?2. Why did it go wrong?
 Solution Generation	In this step we start generating possible solutions to the defined problem. The solution generation phase can happen in multiple ways including group brainstorming, multi-stakeholder engagements etc.	We need to consider what would be the best way to generate solutions - rapid generation, agile or waterfall approach, who are the right people to get in the room, etc.

Problem Solving Framework

The very first step before communicating a solution, is solving a problem - which can be an art in itself. To guide you in your problem solving journey, consider the following six-step process:

Process Step	Discussion	Key Questions/ Considerations
 Solution Evaluation	The solution evaluation phase is where we critically evaluate the feasibility, efficiency, and effectiveness of every plausible solution generated in the previous step. Once the best solution is identified it is time to deploy/ implement on a small or large scale. The size of initial implementation is on a case by case basis.	<ol style="list-style-type: none">1. How will this impact the business bottom line?2. What are the people, process and system implications?3. What are the upfront capital investments required?
 Solution Monitoring	Next is the testing and monitoring of the implemented solution. Here we monitor if the solution is achieving the required, pre-defined targets.	<ol style="list-style-type: none">1. Is the solution solving the problem identified?2. Does it have the expected impact on the people, processes and systems?
 Learnings	Finally the learnings and outcomes should be well documented and stored for future reference and to ensure there is a growing corporate memory .	Here it is important to include the problem, how the solution was identified, how the solution was implemented, what went well and what went wrong.