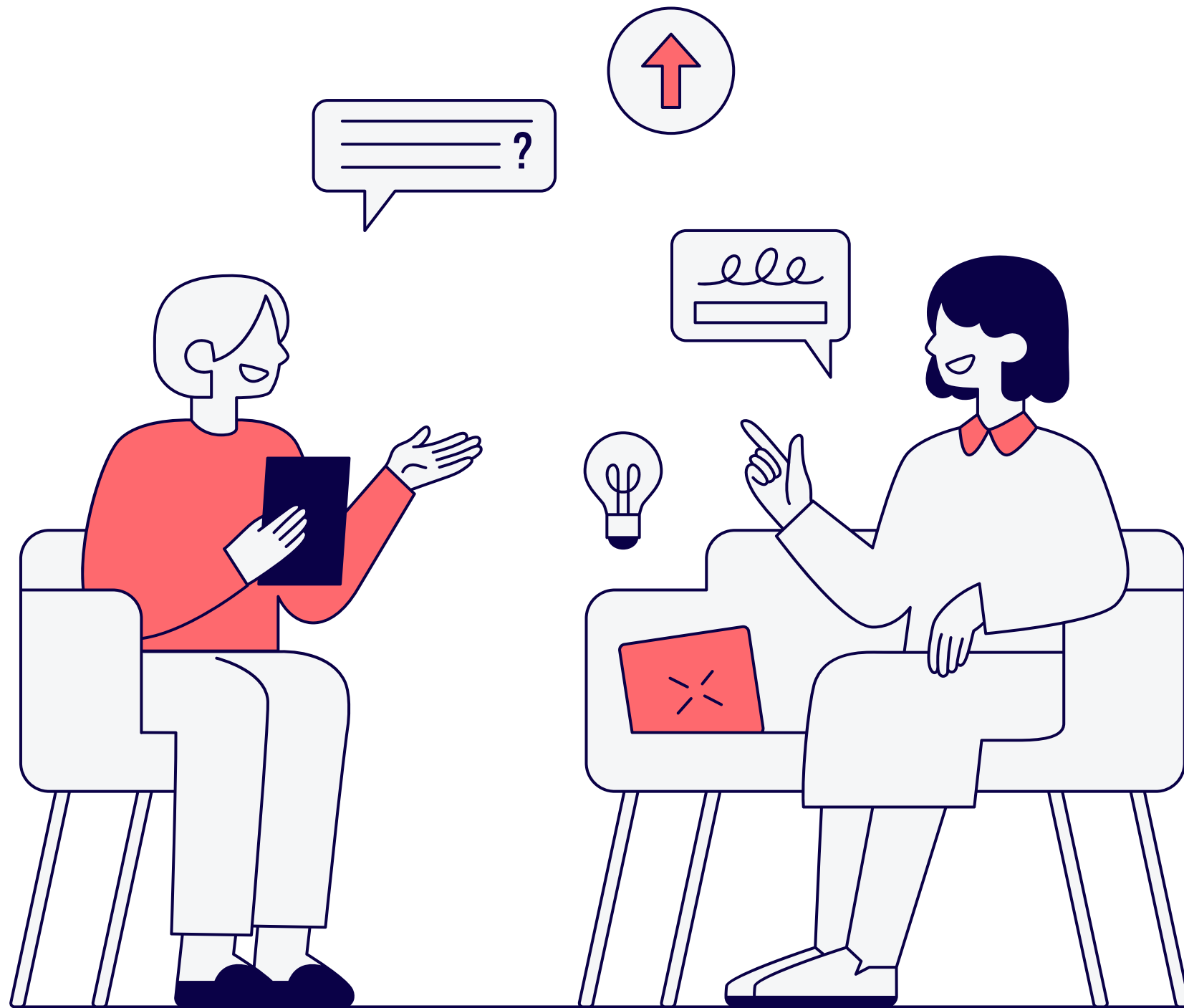




Data Analytics

**SUSS CENTRE OF EXCELLENCE FOR
SOCIAL GOOD (CESG)**

PLAYBOOK FOR THE SOCIAL SECTOR
August 2024



Objective:

The playbook aims to serve as a self-help guide for non-profit organisations (including social service agencies and volunteer centres) to explore guided steps towards achieving the desired organisational and social outcomes.

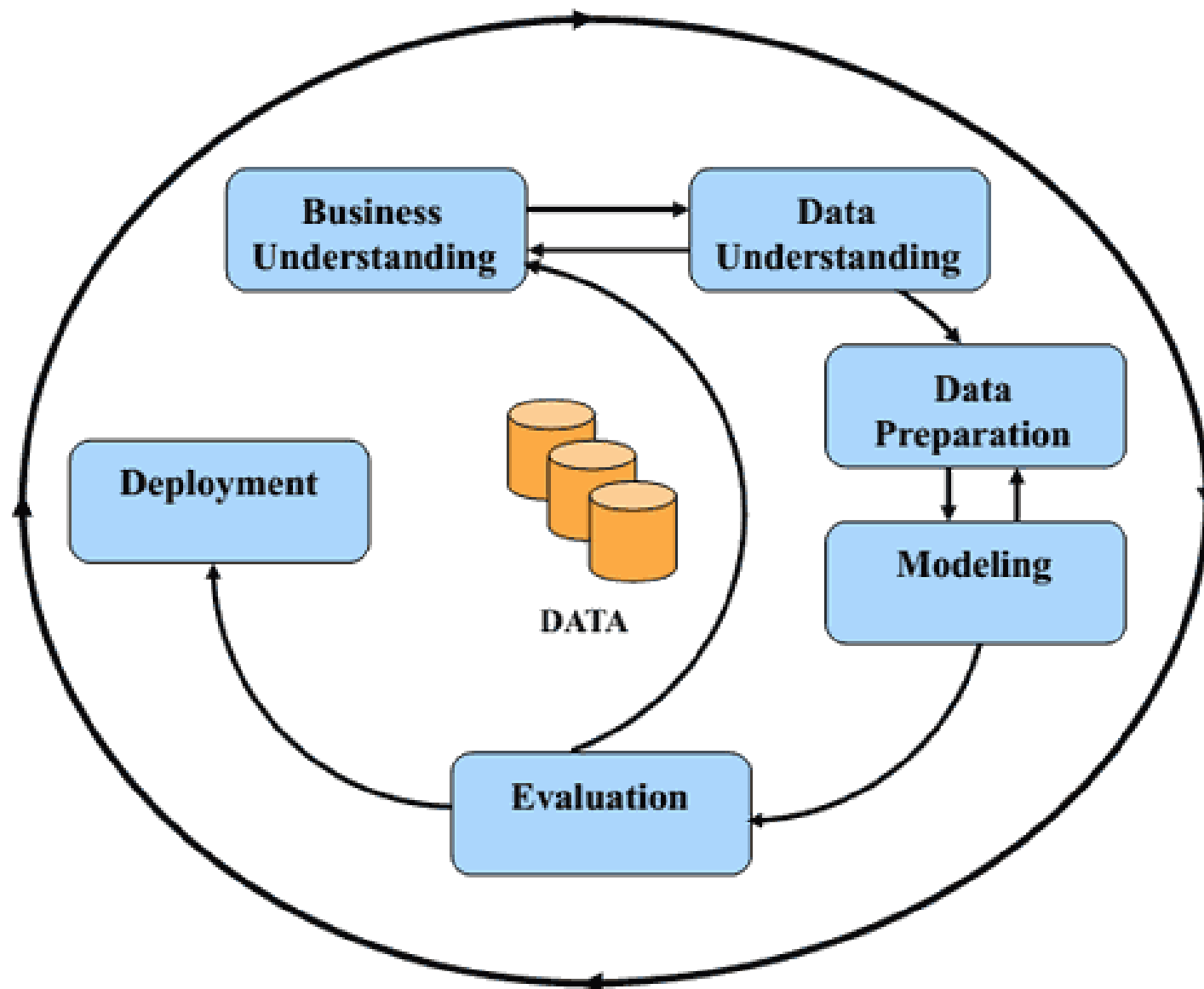
Data Analytics Process Guidelines:

The data analytics (or data mining) process can be summarised by the CRISP-DM (Cross-Industry Standard Process for Data Mining) Framework, as shown below:

Data is central to the data analytics process in that data have to be available before analytics is feasible. Also, the available data have to be “clean” as bad data means bad data analytics results. Data preparation is usually the most time-consuming part of a data analytics project.

Business understanding is often the starting point of a data analytics project. Generally, data analytics generates insights and information to support decision making – with respect to business vision, mission, operations, issues, challenges and problems. The term “business” is used in a generic sense, and non-profit organisations have their core businesses too.

Once the data are ready for analytics, data mining (or modelling) can be performed, the results evaluated, and the findings deployed to achieve business objectives.



Cross-Industry Standard Process for
Data Mining (CRISP-DM) Framework
(ftp://public.dhe.ibm.com/software/analytics/spss/documentation/modeler/14.2/en/CRISP_DM.pdf)



Starting your Data Analytics Journey

1

Consider what insights and information can help support decision making, increase efficiency and effectiveness, or address business issues, challenges and problems. For example, what insights and information would non-profit organizations need to target clients or deploy volunteers better?

Look at what data are available to generate these insights and information. Existing data can provide a good starting point but they may need preparation. For example, the data may not be readily available and accessible, or may contain missing values and errors.

2

3

Review if existing data are sufficient. For example, organizations may want to know the demographic profiles of their volunteers but demographic data may not have been collected for volunteers in the past. This means that additional data collection is needed, which will require time and resources. It is useful to start with existing data and explore what insights and information can already be generated from them before additional data collection.

Examine and plan for the time and resources that data analytics require – such as manpower (e.g., to prepare data, perform data mining, manage the project ... etc.) and software (say, to run relatively sophisticated algorithms). Software may not be a big problem as useful freeware is available.

4

5

Gain a good overview of what data analytics is all about, what it can (or cannot) do, how it can help data-driven and evidence-based decision making, how it can improve efficiency and effectiveness ... etc. Understanding before doing is critical, if not prudent.

Then, plan for the data analytics journey and benefit from it.

Additional Resources

It is unlikely for non-profit organisations to have all the resources necessary for data analytics. Therefore, additional resources can be very useful, if not essential.

There are a lot of online resources (such as YouTube videos) that cover various aspects of data analytics. Also, many books (some available in the National Library) have also been written about the subject matter. Locating such resources is not difficult.

Closer to home are SUSS's Centre of Excellence for Social Good that offers data analytics workshops and initiatives targeted at non-profit organisations, as well as the School of Business that offers courses/training on data analytics. SUSS faculty, consultants and students can provide additional resources too.

Koh, Hian Chye (2005), Data Mining Applications for Small and Medium Enterprises, Centre for Research on Small Enterprise Development. This book is available for public access.

(<https://catalogue.nlb.gov.sg/search/card?recordId=12453320>)



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