



B- LAND

Promote and Strengthen Business Development Skills in Rural Communities

Module 7
Data analysis and research skills
CASE STUDIES

Developed by the University of Forestry, Sofia, Bulgaria



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Case Study 1: Data Ethics Debate

The Case: What if all this data collection takes a negative turn? What if, for example, an organization could predict which employees were looking for a new job by using data from social sites, job boards and internal communications systems, and then terminate the contracts of those employees? Would this use of data be ethical?

Have a conversation in a group of 3, write your findings below and present it to the other learners. A debate is strongly encouraged.

Case Study 2: The ethical Implications of the 2018 Facebook-Cambridge Analytica Data Scandal

The Case: the Facebook-Cambridge Analytica data scandal involved the collection of personally identifiable information of up to 87 million Facebook users. To worsen the situation, they have also developed a software program that profiled these citizens to predict voting patterns - and, through micro-targeted ads, influence US citizens' voting decisions. To learn more about this data breach take a look at the short video and record findings.

VIDEO → <https://www.youtube.com/watch?v=mrnXv-g4yKU>



Case Study 3: GDPR Compliance

The Case: As now you already know, the General Data Protection Regulation (GDPR) provisions are mandatory since May 2018, meaning that your company is required to implement appropriate technical and organizational measures in relation to nature, scope, context and purposes of their handling and processing of personal data.

The seven basic pillars of GDPR are listed in Unit 4. Legislative Aspects of Data Analysis on slide 29 of Module 7. Data Analysis and Research Skills. Choose four pillars and explain what you would do in that area. Record your suggestions and discuss it with the trainer and the rest of the learners.

Case Study 4: Google Data Center Security: 6 Layers Deep

The Case: Have you ever wondered how is the data security managed in Google? Watch the short video and learn about the six layers of physical security designed to thwart unauthorized access to Google Data Centre. Listen to the experts along the way to explore the inner workings of the technology and systems that make Google Cloud one of the most robust enterprise risk management platforms. Record your findings and discuss them with the trainer and the rest of the learners.

VIDEO → <https://www.youtube.com/watch?v=kd33UVZhnAA>



Case Study 5: Application of Big Data in Agriculture

The Case: Digital Transmission Network (DTN), a Big Data analytics system, developed by Schneider Electric, provides real-time weather and agricultural information solutions and market intelligence to farmers and other customers. Using DTN, farmers and traders can access up-to-date weather and pricing data to better manage their business. Faced with the challenge of managing a complex network of data sources – an enterprise resource planning (ERP) system, financial applications, GIS, agronomy packages, and sensing applications – to render information in real-time for customers, DTN current method of connecting these systems was proving too expensive to maintain. DTN invested in a modern data integration tool that consolidated data from multiple sources without having to write a ton of custom code. With a clean and consistent set of interfaces, DTN can now combine critical weather and agronomic data from fields to give accurate forecasts. Using DTN, farmers are able to improve yields and cut costs on the basis of these forecasts. DTN has rapidly become an industry standard for agribusiness information sharing and has evolved into an information hub for a networked farming and agribusiness community. In 2017, DTN was purchased by TBG AG, a Switzerland-based private holding company, in a deal valued at \$900 million.

Based on this information above, think about the opportunities and challenges of adopting Big Data solutions in Agriculture in your country. Record your suggestions and discuss it with the trainer and the rest of the learners.



Case Study 6: SMAG InVivo uses big data to empower precision farming

The Case: InVivo is France's leading agricultural cooperative group with 192 members and €5.1 billion revenues. SMAG, its subsidiary, is the French leader in agronomic information systems, representing a complete system that combines daily growing practices with the power of Big Data. Integrated into Smart Agriculture, SMAG solutions are aimed at increasing production on a sustainable basis using digital technologies and automation. The software is used by 80% of cooperatives and 50% of merchants in France. While SMAG had developed many mobile applications to support farmers in their daily operations, SMAG wanted to pool all its data – 30 years of weather data history, satellite and drone images, and soil types – to make informed decisions faster. Their objective: use digitization to solve the food challenges of the 21st century. Using a tool to help process the vast amount of stored and accumulated data, SMAG developed a complex agronomic Data Crop algorithm, allowing for the use of different types of data to optimize decision-making. For example, Data Crop enables users to track the progress of crops over the year and predict yields – a data point that has led to incredible wheat production results. Currently, 80% of French agricultural land under wheat cultivation is managed through Data Crop. SMAG plans to expand this to other crops and countries as well.

Based on this information above, record your top three benefits from adopting Big Data software solutions in Agriculture, selecting them from the following suggestions: increased farming productivity; reduced food waste; decreased labour force migration; enhanced supply chain tracking and management; optimizing farm equipment; using pesticides ethically; simplified data management; better weather prediction. Record your findings, justify your choice and discuss it with the trainer and the rest of the learners.



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Supplementary Materials: Data Analysis and Research Videos

How Big Data Can Solve Food Insecurity: https://www.youtube.com/watch?v=4r_IxShUQuA

Why everyone should be data literate: https://www.youtube.com/watch?v=8ovyQZ_Z8Xs

The ethics of collecting data: https://www.ted.com/talks/marie_wallace_the_ethics_of_collecting_data

Inside a Google Data Center: <https://www.youtube.com/watch?v=XZmGGAbHqa0>

Using Data to Read Business Signals: https://www.youtube.com/watch?v=5DNde2Xj_-0

How Facebook Tracks Your Data: https://www.youtube.com/watch?v=JAO_3EvD3DY



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Supplementary Materials: Data Analysis and Research Videos

Driving Efficiency in Agriculture and Forestry Through IoT: <https://www.youtube.com/watch?v=l6ppOjqr-dc&t=140s>

How data-driven farming could transform agriculture: <https://www.youtube.com/watch?v=dpVylFjT-Cw>

Digital Agriculture Transforming Farmers' Lives: <https://www.youtube.com/watch?v=MQaRqZpkQxk>



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<https://en.smag.tech/solutions-for-agricultural-performance/>

<https://gdpr.eu/>

<https://www.bbc.com/news/technology-54722362>

<https://www.theguardian.com/technology/2019/mar/17/the-cambridge-analytica-scandal-changed-the-world-but-it-didnt-change-facebook>

<https://www.frontiersin.org/articles/10.3389/fsufs.2019.00054/full>



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