KNOWLEDGE FOR THE WORLD - DIGITAL STRATEGY

Part of the Aalborg University strategy 2016 to 2021

AALBORG UNIVERSITY
DENMARK

Content

Preface

The digital strategy is Aalborg University's (AAU) overall strategy for digitalisation. With its highly qualified and future-proof approach to digitalisation, the strategy shows due diligence; thereby, we will promote the best possible conditions for task performance within all the University's core activities: research, education and knowledge collaboration.

The digital strategy supports AAU's 2016-21 strategy *Knowledge for the World* and contributes to fulfilling the visions of the strategy. Furthermore, the strategy takes into account relevant national strategies. The strategic initiatives will be managed by the Strategic Committee for Digitalisation, who is responsible for AAU's portfolio of digitalisation projects, together with the strategic councils and the administrative management group.

The rapid digital development both entails that new opportunities and challenges will arise during the strategy period. Therefore, the strategy will be revised as required; the first revision process is expected in 2019.

The strategy is the result of a process of workshops and interviews to which staff, students and external collaboration partners have contributed. The process has also included a review of the current digital and technological trends and of how other national and international universities work strategically with technology and digitalisation. Furthermore, a consultation process at AAU has further strengthened the strategy.

We appreciate the input we have received from AAU staff, students and stakeholders as well as their involvement and interest in the digital agenda, and we will continue to need this involvement and interest in the implementation process.

The Executive Management
Aalborg University
January 2018

AALBORG UNIVERSITET

Overall vision

Aalborg University (AAU) gives high priority to the digital agenda both in terms of ensuring that we reap the benefits and address the challenges of the technological development.

The development of digital technologies is a framework condition which both offers new opportunities, require-ments and expectations – also of organisations and people to adapt continuously to an often unpredictable and ever-changing future. New cutting-edge technologies offer new opportunities – also for how AAU research can contribute to shaping future society. Therefore, AAU not only wishes to meet the requirements and expectations of the technological development but to exploit the oppor-tunities for innovation offered by the digital technologies in order to develop our organisation and its core activi-ties. We wish to generate critical reflection and innovative development of the digital research areas in which AAU already holds a strong position.

On this basis, AAU's digital strategy will support the visions of *Knowledge for the World* and serve to unfold the technological framework within which the University operates. Thus, the digital strategy comprises all levels of the organisation: from innovative support of research, education and collaboration to value-generating admini-stration and service. Digital skills development is a particular focus area, since the digital development require that both staff and students continuously develop their digital skills both in terms of the actual use of digital technologies and tools and in terms of the critical reflec-tion required by this development.

**VISION FOR
DIGITALISATION AT AAU**

- AAU takes an ambitious approach to applying digital opportunities for promoting the overall strategy and implementing strategic objectives

- AAU uses digital opportunities as a means of improving the quality of our core activities and strengthening our distinctive features

- AAU uses the opportunities for innovation of the digital development to position itself within research, education and knowledge collaboration

AAU's digital strategy lays the foundation for an ambitious vision that will support and develop the University's strategy and core activities.

Approach to Digitalisation

In this strategy, digitalisation is used as an umbrella term that both covers skills, organisation, tasks, processes and technologies.

Digitalisation must be meaningful and value-generating for the University as a whole and for the individual staff member. The following four approaches will ensure this.

1. WELL-FOUNDED DIGITALISATION

Digitalisation must be driven by organisational goals and must support AAU's visions and strategic objectives for core activities and support services.

Digital solutions must add value and make sense to the user groups.

Digitalisation must create value across organisational units and structures, and digital solutions must promote coherent task performance.

2. USER INVOLVEMENT

Digitalisation is an organisational change process. Therefore, AAU's digitalisation process is based on the way in which the organisation operates, and it aims at finding new and better ways of solving future tasks.

Staff members will be directly involved in the various stages of the digitalisation process. This approach will ensure that the knowledge, experience and skills of all relevant staff members will be brought into play during the entire process – from idea and identification of needs to the implementation of solutions in the organisation.

3. ORGANISATIONAL IMPLEMENTATION

Digitalisation requires broad implementation in the entire organisation and is therefore a cross-organisational responsibility. An important element in organisational implementation is to develop and implement digital solutions and processes that actually create the expected added value.

Since the development of organisational solutions and processes is part of organisational development, organisational implementation must be guided by the user groups who will be using the digital solutions.

4. MANAGEMENT FRAMEWORKS

Ensuring that AAU has the right order of priority of our digital initiatives and that these initiatives translate into value-generating solutions require a focused management approach to digitalisation.

AAU will continue to focus on the transparent management of the portfolio of digital initiatives. Furthermore, AAU will ensure that it is clear which organisational unit is responsible for a process or system and who is responsible for the organisational implementation.

Research

Digital initiatives within the area of research must promote AAU's research vision and strategy and must be a major driving force in the creation of new knowledge. With respect for academic autonomy, digital initiatives must contribute to ensuring high research quality and they must promote the University's recognition by focusing on four areas: accessibility, application, compliance and cooperation.

Accessibility to digital resources and the required capacity will contribute to AAU consolidating and developing its research strengths. Easy and secure access to digital resources is essential to facilitating researchers' use of digital resources. Digital initiatives within this area must be driven by the researchers' needs and requirements, and digital solutions must have the required capacity for experimental approaches. Digital solutions must promote collaboration and overcome academic, organisational and geographical barriers in order to accommodate the various types of innovation and knowledge collaboration AAU engages in with the wider world.

AAU must promote the use of digital solutions within research. Digital solutions must contribute to continued development and strengthening of research quality and the opportunities for creating new knowledge by using digital methods. This requires continuous development of skills to facilitate tapping into the potentials of new scientific methods and models for collaboration.

Compliance in relation to legal and contractual requirements as well as the standards of integrity in research will contribute to AAU maintaining its position as a credible and internationally recognised research institution and collaboration partner. Thus, facilitating compliance must constitute a central focus for digital initiatives.

Cooperation on digital initiatives within research is essential for ensuring accessibility, use and compliance. AAU must engage actively with local, national and international forums and communities in order to influence digital standards and framework conditions.

Digital solutions must promote the interlink between research and research-based teaching; thus, research infrastructures should be made available for students to use.

INITIATIVES – RESEARCH

**1.
COORDINATED
ENGAGEMENT**

1.1
AAU must participate in and influence joint national and international strategic digital initiatives within the research area. The University must actively seek to influence and be abreast of the standards and requirements set by funding suppliers, research programmes, infrastructure collaboration and research policy objectives.

**2.
INFRASTRUCTURE
AND GUIDANCE**

2.1
AAU must strengthen the research infrastructures and resources dedicated to research. This will be done through a coordinated development of the University's own facilities and in combination with active cooperation on digital infrastructures, tools and access to knowledge and data. The aim is to strengthen the availability and application of digital solutions, to ensure compliance and to support research collaboration, knowledge dissemination and knowledge production. This requires AAU to provide sufficient capacity for data processing, data storage and network.

2.2
To support the existing research support system, AAU will establish an advisory function for researchers. Specialists experienced in providing advice and support to researchers will carry out this advisory function; moreover, mentors will be assigned to the University's research environments. The advisory function will constitute a resource in the skills development of researchers.

3.
DATA MANAGEMENT

3.1

The University will strengthen its research data management through training and guidance and the preparation of policies and processes covering the full life cycle of research projects and research data. This initiative must be based on the principles of good academic practice as defined in "the Danish Code of Conduct for Research Integrity", and it must comply with formal requirements and academic standards. Furthermore, this initiative will support confidentiality in collaborating with external partners.

4.
KNOWLEDGE DISSEMINATION

4.1

AAU will strengthen its efforts in the digital support of the dissemination of the University's knowledge production. This will serve to strengthen the visibility and accessibility of AAU's research and must comply with the specific conditions and potentials applying to specific disciplines, such as new methods of publication, for example open science.

Education and
Problem-Based Learning

AAU will establish and maintain the best possible framework conditions for the digital support of PBL. This will focus on the digital learning environment of AAU's students and on developing strong teaching skills within digital learning.

AAU possesses strong academic skills in digital learning. We will use these strong academic skills as our basis for strengthening, developing and challenging the methods and practices of PBL through the application of digital opportunities.

AAU must provide its students with an attractive and modern student environment which takes into account their general student life. The digital student environment must support the coherence between various study activities, learning processes, project work and the social lives of students. Furthermore, through the application of digital solutions, AAU wishes to strengthen the opportunities for students to reflect on their own learning, and for academic self-evaluation and academic progression.

As a natural part of their disciplinary expertise, AAU students must be equipped to reflect critically on the implications of digitalisation and the requirements of their discipline; moreover, they must use and reflect on the digital opportunities available for communication, cooperation and information search processes, especially in connection with problem-based project work. Through digital education, the aim is that AAU students will be equipped to meet the digital skills required by the business world and to take part in the society of the future in which digitalisation will take on an ever-increasing role.

The AAU academic research environments within digital learning must propel the continued development of the pedagogical and didactic methods which are based on or involve digital technologies. Based on AAU's research-based disciplinary expertise within this field, AAU will incorporate digital solutions as an integral part of its PBL practice, focusing on generic, pedagogical models as well as subject specific didactic practices.

AAU will make the technological and organisational conditions available required for the development of a digital PBL, and AAU will ensure that lecturers, supervisors and students will receive the support required for applying digital resources in teaching activities, project work and as part of the learning environment.

INITIATIVES – EDUCATION AND PROBLEM-BASED LEARNING

**5.
KNOWLEDGE CENTRE
FOR DIGITAL LEARNING**

5.1
AAU will establish a cross-organisational knowledge centre for digital learning. The knowledge centre will both contribute to the continuous development of digital learning methods, especially PBL learning methods, and provide support to teaching staff and supervisors in their implementation of these learning methods. The knowledge centre will provide technical and pedagogical/didactic guidance. The knowledge centre will be linked closely to relevant AAU research environments. In setting up the knowledge centre, decentralised units for digital learning will be established for targeting specific local initiatives.

**6.
THE DEVELOPMENT OF
DIGITAL LEARNING
METHODS**

6.1
Based on the new digital opportunities and trends within the field of learning, PBL in particular, relevant academic environments will seek to develop new learning methods adapted to the digital development. This will lead to the development of a number of generic learning methods for digital learning and digital collaborative learning methods. The knowledge centre for digital learning will provide support in the implementation of the specific learning methods.

6.2
A new project will seek to exploit new digital pedagogical approaches in strengthening the area of further and continuing education.

6.3

Based on the experience and knowledge gained from the PBL development projects and the interdisciplinary PBL research project, both of which are initiatives included in Knowledge for the World, as well as the University's knowledge and skills within PBL and digital learning, a set of digital platforms, which are essential in translating a digital PBL model into efficient practice, will be established. In this respect, providing students with a digital framework for project work will be given special attention.

7. DIGITAL LEARNING RESOURCES

7.1

Through pilot projects and cases, AAU will explore the use of digital learning resources required by new digital learning methods. Considerations include recording of lectures, video production used in, for instance, the flipped classroom and the use of digital materials. The experience gained from the pilot projects and cases will lead to the launch of a digitalisation project which will aim to establish the technological and organisational prerequisites for AAU's teaching staff to develop and use digital learning resources.

7.2

AAU will launch one or a series of projects that aim to experiment with the students' production of digital materials as part of their learning activities. The experience gained from these projects will lead to the launch of a digitalisation project to establish the solutions necessary for students to produce digital materials in connection with teaching activities and project work.

8. STUDY ENVIRONMENT AND ACADEMIC PROGRESSION

8.1

The University will launch a digitalisation project that aims to strengthen a coherent study environment, comprising both academic and social relations in virtual as well as physical spaces. Digital solutions are expected to strengthen the relationship with and among students. AAU will examine the possibility of establishing a digital entry point for students to find information about their degree programmes, systems, etc.
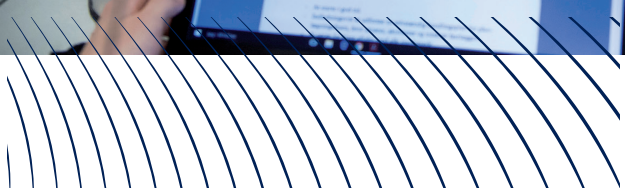
8.2

Through the application of digital solutions, AAU will seek to strengthen academic progression through increasing the students' awareness and reflection on their own learning and progress, individually and in connection with group work. In this connection, the digital opportunities available for providing feedback to students on their own learning development will be explored.

9.
DIGITAL SKILLS INCLUDED IN CURRICULA

9.1

Degree programmes must seek to incorporate the development of the students' overall and academic digital skills in the learning activities included in the degree programmes, and these must be included in curricula, semester descriptions and module descriptions when relevant.

Knowledge Collaboration

AAU will form a digital overview of its knowledge collaborations and make use of digital solutions for engaging in both external collaborations between AAU, the business community and public organisations and in internal collaborations between researchers/lecturers, students and administrative staff members.

In promoting the strategic and focused use of existing knowledge collaborations and in ensuring the documentation of their development and impact, AAU will use digital solutions to provide an overview of and easy access to AAU's collaboration agreements and collaboration activities.

Such digital solutions must be supportive of both the internal collaboration between researchers and students and the external collaboration with the University's external collaboration partners in relation to both collaborative research and project work.

Dialogues and the exchange of data, knowledge and information must be characterised by efficiency and a focus on meeting relevant requirements and expectations for handling data.

INITIATIVES - KNOWLEDGE COLLABORATION
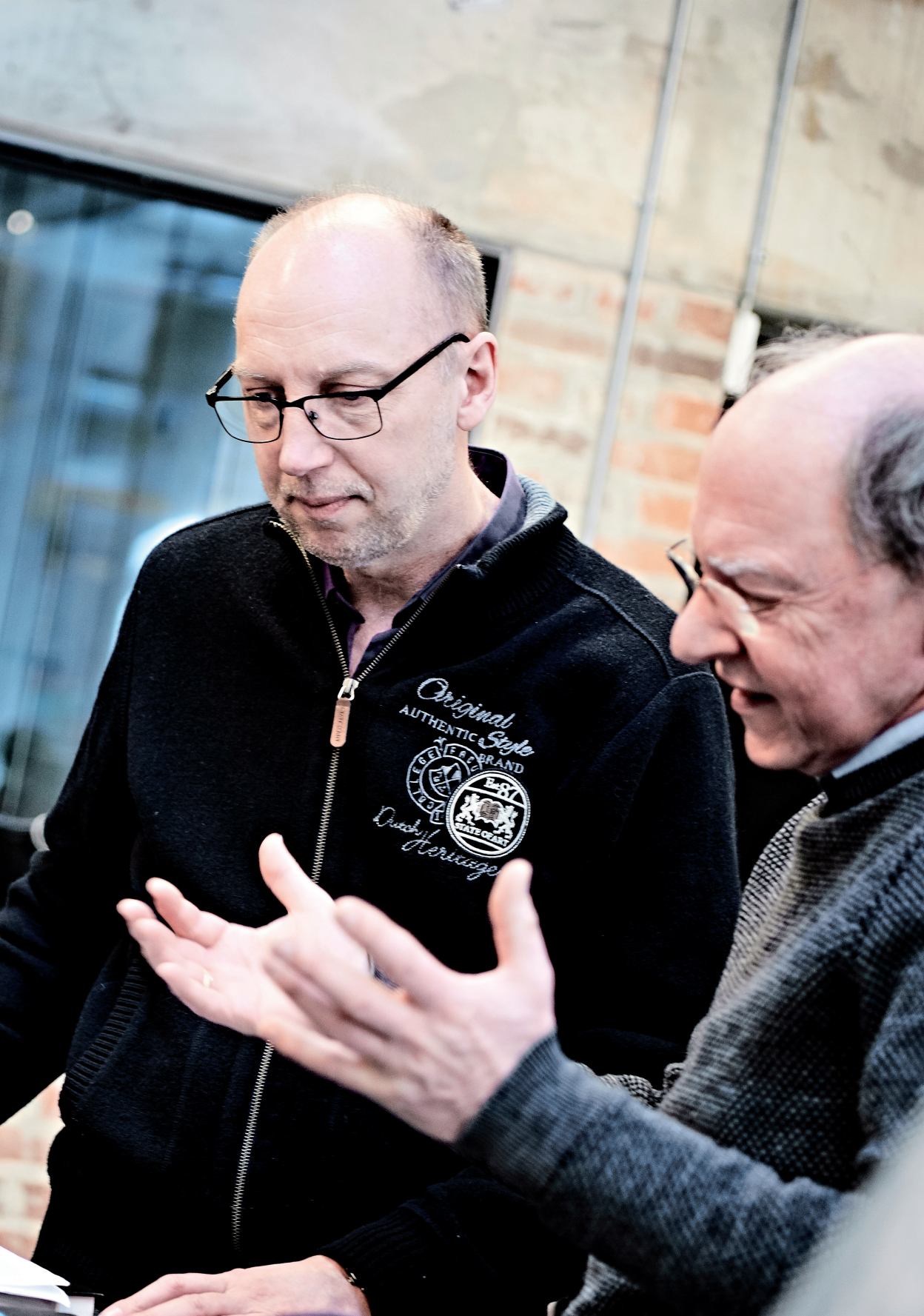
**10.
OVERVIEW OF COLLABO-
RATIONS AND IMPACT**

10.1
AAU will establish digital solutions to support the administration and general overview of AAU's collaborations and the impact assessment and documentation of such collaborations.

**11.
COLLABORATION
PLATFORMS**

11.1
In enhancing the digital support available for internal and external collaboration within education and research, AAU will establish flexible digital solutions to match similar digital solutions used by our external collaboration partners.

Skills

AAU will continuously improve the University's preconditions for implementing and realising digital initiatives, such as by strengthening the University's skills in managing and embedding the changes brought about by digitalisation.

AAU wishes to possess strong digital skills that will enable the organisation to digitise from a user-directed perspective based on the challenges and needs of the administration and the organisation's core activities. AAU staff members must have the knowledge to understand and the skills to use the possibilities offered by existing and new digital solutions.

AAU will improve its digital skills through the implementation of its competence strategy.

As an organisation, AAU must plan and manage the implementation of digital solutions and the changes brought about by digitalisation. This requires for AAU to, at all organisational levels, possess the skills necessary for implementing and realising digital initiatives.

Digital initiatives must be of relevance to the organisation and to the staff members in direct contact with the new solutions. Therefore, their implementation must be centred around the users, and staff members with relevant skills must be involved in identifying and developing the organisation's work processes. This will strengthen the organisation's ability to define needs and create solutions and processes which may be put into practice.

AAU strives for staff members to use their skills for taking advantage of and challenging the digital opportunities made available to staff. The aim is that each member

of staff will contribute to the development of both their own and the organisation's opportunities for generating value from digital solutions. Thus, all staff members must possess specific user skills and a critical constructive approach to the challenges and opportunities brought about by digitalisation within their own area.

Staff members with specialised digital skills must be able to combine their knowledge of new technological possibilities with their insight into the organisation's core activities and administration in order to advise, support and manage the development in close cooperation with academic environments and administrative units.

INITIATIVES – SKILLS

12. ORGANISATIONAL DIGITAL SKILLS

12.1
Based on AAU's experience in digitalisation, the organisational factors which might facilitate the initiation, implementation and realisation of digital initiatives must be described. This description must constitute the background material for a kick-off seminar for AAU's management addressing the requirements for promoting digitalisation and it must strengthen AAU's ability to plan and manage processes of change and implementation. This will result in the initiation of specific initiatives.

13. STAFF MEMBERS' DIGITAL SKILLS

13.1
In supporting the opportunities for skills development available to AAU staff members, AAU must describe the skills needed for AAU staff members to be involved in the implementation of digital initiatives, to manage the organisational implementation of solutions and to create value for the users of the digital solutions designed to support task performance. A special focus will be on the skills required by AAU's operations and support units which will ensure that AAU benefits from cross-organisational digitalisation.

13.2
Through close collaboration and coordination with the focus area 'Competence, organisation and management' of *Knowledge for the World,* the skills development opportunities available to AAU staff members must be ensured to provide staff members with the opportunity to acquire and develop the skills required for both using digital solutions and contributing to the digital development.

Administration

The digitalisation of the University's administrative task performance aims to enhance the efficiency of such tasks, thus to strengthen core activities. Through appropriate and coherent digitalisation, the administrative tasks will be solved in a simple and efficient manner.

The continuous digitalisation of AAU's administrative areas supports *Knowledge for the World* and expands on previously launched digitalisation initiatives (*Strategy for the administrative areas, The digital AAU*).

AAU will ensure the quality of the administrative digitalisation through digital task performance adapted to the needs of the University.

Coherent digital administrative solutions must benefit the entire University and contribute to increased quality and productivity. Digital workflows will be used to solve administrative tasks, and workflows that have proven effective in solving one particular type of tasks must be used to solve similar tasks as well. Standardised data, i.e. basic data, must be collected across systems and be made available where needed. Thus, basic data will form the basis of the creation of joint information and knowledge which will serve to strengthen how the University solves, plans and manages tasks.

Administrative digital solutions require for staff members to possess the skills necessary for them to be able to use the full potential of such digital solutions.

INITIATIVES – ADMINISTRATION

14.
THE PORTFOLIO OF
DIGITAL SOLUTIONS

14.1

On the basis of *the Digital AAU*, which is part of the *Strategy for the administrative areas*, and with an emphasis on digital processes, all existing and planned digital administrative solutions must be subject to continuous assessment in ensuring their high quality and their focus on the University's core activities.

15.
COHERENT
DIGITALISATION

15.1

AAU will continue to strive for creating coherent digitalisation of all administrative workflows. The aim is to create coherent workflows across AAU and thereby increase quality and productivity.

15.2

AAU will strive for the accuracy of data and for data to be shared across organisational units and systems. Data may originate in one part of the organisation, be updated in another part of the organisation and be applied in many different parts of the organisation.

15.3

AAU must further explore how and to what extent the University may provide decision support based on an analysis of basic data and through the application of data analysis methods such as predictive analytics.