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Strategic Research Management

The Case of the Architecture and Design Sectionof the Department of Architecture, Design and Media Technology

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Strategic Research Management

– The Case of the Architecture and Design Section of the Department of Architecture, Design and Media Technology

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I. Introduction

A. *Definition and scope*

The purpose of this study is to investigate the potentials of strategic research management as a means to improve the research performance of the Aalborg University Department of Architecture, Design and Media Technology (ADMT) section of Architecture and Design (AD). The relevance of this investigation is suggested by the introduction of a new performance measurement system, the Bibliometric Research Indicator (BFI) and the increased linkage of performance to budgets for the Danish state universities. Also, AD's acquisition of external funding is below university average.

In strategic management terms, ADMT is an organisation which employs highly specialised professionals to conduct research (and to teach) in order to be able to publish as many scientific books and journal articles (and patents) as possible with the highest quality possible, within its field of research. The products, books and articles, are very well defined, and there is little scope for redefining the organisation's products within the organisation itself.

Strategic management is responsive to the organisation's competitive environment. Therefore, performing an environmental analysis is normally an essential part of to strategic analysis (Lynch 2009, Crossan, Fry & Killing 2004). Due to the nature of the competitive environment of a research department like ADMT, an argument why an environmental analysis is not relevant is offered instead while the focus has been on a more thorough resource analysis.

Internally, this study is limited to only the department level within the university. From a strategic management perspective, It might be relevant to consider also the faculty and central administrative levels, as the overall performance of the university is indeed dependent on the management at these levels. This would far exceed the capacity of the author and furthermore, based on personal experience as head of programme for two years, it is very difficult to instigate change in a bottom-up manner at these levels. Therefore, even though it would be possible to identify potential strategic improvements at these levels, it is uncertain whether such changes would be implemented.

The study only focuses on the architecture and design section within the Department of Architecture, Design and Media Technology. ADMT is a young department, formed by the merger of two previous departments, the Department of Architecture and Design and the Department of Media Technology. Currently the two old departments are still located in different campi and largely operate independently of each other. Looking into both sections would imply engaging with two different research cultures and possibly different sets of problems which would exceed the capacity of this study and possibly lead to more vague and blurry results.

Although teaching accounts for a large proportion of the section's activities, it has been excluded from this study. First, analysing teaching in a strategic perspective would expand the study beyond its capacity as it would involve another set of issues particular to teaching. Second, teaching has not been made subject to performance measurement in the same way as research has it. Furthermore, the strategic challenge for teaching has to do primarily with budget cuts per student capita which require different strategic actions than the strategic challenges

for research. Finally, although teaching and research are interlinked in the operations of the department, strategic research management can still be meaningfully considered in isolation.

Although initially intended, it has proven far to ambitious to analyse the AD external funding pattern. This is unquestionably an important parameter which must be considered in terms developing a research management strategy for the department. The fact that such an analysis has not been included in the study does not mean however, that the topic has been left completely untouched. The topic has been raised in the seven interviews which were made as part of the study. Hence, the topic has been discussed qualitatively.

B.   Methodological approach

This study is a case study based in part on statistical and other data, and in part on semi-structured open-ended interviews with 8 academics at AD including the head of department and the chair of the department research committee. The statistical data comes from two university repositories, Videnbase Nordjylland (VBN) which is accessible through the university website, and PURE which is managed by the VBN editorial office. Information about the BFI has been accessed through the Danish Agency for Science, Technology and Innovation website. One internal document, a draft research strategy for ADMT for 2010-14 has also been included.

Management theory has been used as a framework for discussion rather than as a methodological framework. However, the choice of topics of investigation has been loosely guided by Lynch's analysis framework (strategic environment vs. resources and capabilities) (2009). In relation to Crossan et al.'s Diamond-E framework (2004), the primary focus of this study is on the analysis of the relations between strategy and management and resources respectively and between strategy and environment. The relation between the internal organisation and strategy has not been analysed but will be discussed (figure).
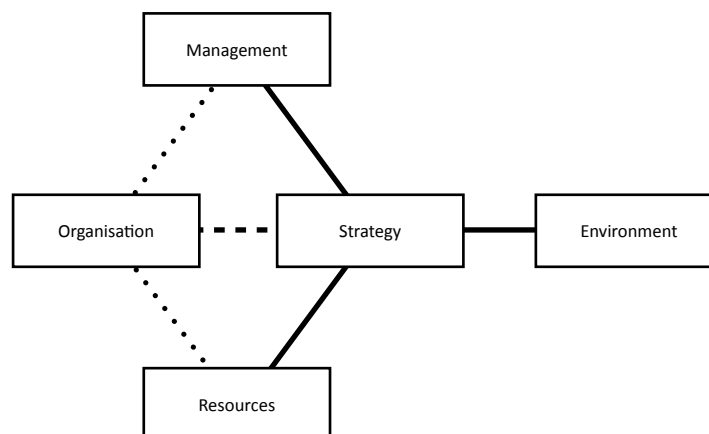
Primary focus of this study within the Diamond-E framework. Adapted by the author from Crossan et al. (2004).

C.   Theoretical approach

The fundamental idea of this study is to investigate the potential of applying strategic management and performance measurement theory – developed for, and applied in, the corporate world – to the public sector setting of an academic

research organisation. The hypothesis is, that doing so enables a framing of academic research behaviour which offers relevant responses to the environmental change which academic research institutions in Denmark are currently facing. The aim is not to offer an alternative to traditional framings of academic research but rather to offer an additional framing, which may expand and critically examine existing idiosyncrasies.

The theoretical foundations for this endeavour are found primarily in strategic management theory and writings on performance measurement. However, both organisational culture and change management theory is inescapably relevant in this context. While strategic management and performance measurement will be discussed separately, organisational culture and change management theory will be referenced in the context of the case study.

Thinking of what a research department does in strategic and economic terms is alien to most academics. However, ADMT like any other research department, is inescapably situated within an economic reality. This economic reality is currently changing, and if the department does not respond to these changes it is likely to face a deterioration of its scope of operation. Even though some of the issues discussed in this study may appear odd or even offensive to the academic reader, a strategic and economic focus has been sought throughout the study.

Interestingly enough however – as my conclusions will show – what seems to be most advantageous for the department from a strategic and economic perspective, is also what seems to be most advantageous from the academic perspective of the individual researcher. I therefore appeal to the potential academic reader to consider the full argument of the study without prejudice and to save a potential dismissal until the argument has been carried to its conclusion.

II. Strategic management and performance measurement – what is it?

This section introduces the concepts of strategic management and performance measurement. While the former is discussed in general, the latter is discussed specifically in the context of public organisations and knowledge organisations. Performance measurement must be differently designed in public organisations than in private companies in order to be successful (de Bruijn 2009). Furthermore, knowledge workers in professional organisations are likely to respond differently to management than other types of employees and thus require a different type of management (Andersen, Barlebo Rasmussen 2005, Løwendahl 2005).

A. *Strategic management*

The purpose of strategic management is to make an organisation better at what it does through an *analysis* of its environment and its resources and subsequent *formulation* and *implementation* of a strategy achieve it (Lynch 2009). Strategic management can be either prescriptive, starting from a definition of the organisation's purpose, or emergent, reacting to changes in the environment as they occur, or both (ibid.).

In strategic management, both context (the environment within which the strategy operates), content (the main actions that different people must carry out to implement the strategy), and process (how actions link together and inter-

act as the strategy unfolds), are important elements to consider. While the two former may be relatively easy to get into grip, the latter represents the biggest challenge in strategic management, as people may have different views and interests, and environments may change (ibid.).

Different organisations may respond differently to environmental change depending on the nature of their environment and their resources. Rather than staying in the same environment (or market) and stay competitive mainly through continued efficiency improvements, an organisation may try do redefine its market through unique products and thus eliminate competition altogether in a so-called Blue Ocean Strategy (Kim, Mauborgne 2005). An organisation's capacity to do so is very much dependent on its innovative capacity and success in cross-fertilising between different realms of ideas (Johansson 2004).

Internally, an organisation must examine how its management, organisation and resources are tuned to meet the challenges of implementing a strategic change and to which extent they can be altered, improved or moderated to that aim (Crossan, Fry & Killing 2004). Hence, the actual formulation of a strategy is an act of balance between modifying the different elements of the organisation itself – and the strategic advantages and disadvantages of doing so – and modifying its environment.

In a change management perspective, the formulation and implementation of a strategy are only two steps in a long chain of steps necessary to achieve a successful organisational change. According to Kotter (1999), the formulation of a strategy must be preceded by an initial sense of necessity within the organisation and succeeded by several steps of vision communication, competence improvements, short term gains and cultural consolidation of new procedures, and more – which altogether form parts of the strategy implementation – in order to succeed.

B. Performance measurement

Central to strategic management is the formulation of goals and ways of achieving them. In order to evaluate whether the organisation works towards the goals, some kind of measurement system must be implemented:

The central idea behind performance measurement is a simple one: a professional organization formulates its envisaged performance and indicates how this performance may be measured by defining performance indicators. Once the organization has performed its tasks, it may be shown whether the envisaged performance was achieved and how much it cost.

– (de Bruijn 2009)

However simple this may sound, performance measurement is not an innocent endeavour, as there are both advantages and disadvantages to it. On the one hand, performance measurement may produce some beneficial effects, as it may create transparency and learning, and allow for appraisal (internal and external) as well as sanctioning (positive and negative).

On the other hand, it may also produce some perverse effects. Performance measurement may lead to strategic behaviour (not to be confused with strategic management), it may block innovation and ambition, drive out the professional attitude, and lead to copying rather than learning. And ironically, performance

measurement might veil actual performance and even lead to punishment of performance (ibid.).

According to de Bruijn, performance measurement can be designed to cater for beneficial effects and eliminate perverse effects by observing three design principles in order to maintain some important values. In order to maintain trust and fairness, a principle of interaction must be observed, which allows the professional to influence the definition of indicators, and how performance is measured and assessed. In order to maintain content, a principle of variety must be observed, so that performance measurement is not only quantitative but allows for multiple perspectives. And finally, in order to maintain liveliness, performance measurement should be dynamic rather than static by focussing not only on results but also on processes (ibid.).

Without trust and a sense of fairness, the professional might respond to performance measurement with perverted behaviour. In order to avoid that, negotiation of conflicting managerial and professional values must be possible. Both management and professionals must feel ownership to the system, and mutual trust must be established. This calls for interaction on many different levels between the management and the professionals.

Because public service is a multi-value activity, unambiguous measurement criteria are hard to define. In order for performance measurement to maintain legitimacy, it must incorporate multiple criteria, both product definitions, performance indicators, methods of measurement and ways of forming a judgement is concerned.

While the first two design principles are concerned with output in form of products and services, the third design principle is concerned with the processes of producing the output. As the ways in which products and services are produced are may change, and as new products and services may develop, performance measurement must be responsive to process dynamisms in order to continue to make sense (ibid.).

III. Strategic research management – why?

A. *Environmental change*

In Denmark as in many other developed countries, there is a new – some would say neo-liberal – rhetoric in the political debate in recent years, which focuses on the utilitarian aspects of the provision of public goods. There is a raised attention towards "how taxpayers' money are spent". Therefore, the idea has evolved that the performance of public services, from nursing schools to senior services, must be measured, so that the politicians may more easily justify spending – or spending cuts – for various services. In this view lies also the idea, that rewards must be given for good performance while sanctions must be imposed for bad performance.

For the Danish state universities (and other public research institutions), the implications of this is that a new performance measurement system, the BFI, has been introduced to measure the research output from university departments. The BFI – the Bibliometrical Research Indicator – calculates points for each journal article, book chapter, etc., published by each researcher, according to specific

criteria.[1] Also, in line with the idea that performance should be linked to rewards and sanctions, the number of points generated by each university will determine an increasing share of their research budgets.

At Aalborg University, this funding model is trickled down on the department level. This means that an increasing share of the departments' budgets will be determined by the number of points generated by publications made by the department employees. Framed within the terminology of strategic management, this is an environmental change compare to only a few years ago. And due to this new link between publications and budgets, departments now have a strategic interest in increasing their turnover of publications.

To this end, it could seem relevant to introduce strategic management. However, the new link between publications and budgets is only one among a number of reasons why strategic management might be a good idea. This direct focus on financial means as a strategic aim and purpose of their activities may suffer some reluctance among academics, and it may therefore be difficult to implement in the context of a university department. Seen in a wider perspective however, more publications is not just linked to better budgets, but also to a number of other aspects which are important, both to the individual researchers and to a research organisation.

The quality and number of publications which a researcher has made is an indication of her importance in her field of research, and thus of her standing among her peers in the field. Therefore, more and better publications are likely to increase the interest of a researcher's environment in her, and thus in the opportunities she may get. Opportunities may be requests to do peer reviews or keynotes, invitations to sit on various boards and committees or to collaborate on joint research projects, and to acquire research funding and awards.

This in turn, may raise the attention towards the department in which the researcher is working and make it more attractive for other good researcher to work in the department, which in turn may improve the department's reputation even more. A better reputation means better media coverage which may lead to more students. And more students lead to higher budgets and more job openings for academics. And the department may grow, not just qualitatively but also quantitatively and lead to the formation of a better and bigger research environment.

But all these things may not happen without a deliberate and well-conceived strategy. This – in a much wider sense – is why strategic management is relevant to consider in the context of a university department. It may be claimed then, that what may at first glance appear to be a misconceived attempt to measure the performance of university researchers may instead be brought to work as a lever for a new course for the department's future, as well as for the future of each individual researcher.

B.   Environmental analysis

In corporate strategic management, an important element in is to do an environmental analysis in order to identify potential markets and competition (Lynch 2009, Crossan, Fry & Killing 2004). In the corporate world, a possible conclusion

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[1] For a definition of these criteria see Forsknings- og Innovationsstyrelsen 2009

from this analysis could be to redefine the aim and scope of the corporation and to enter new markets or define new products. In the case of a university, the market can be defined as the consumers of research and teaching, and the competition can be defined as other universities and research organisations.

There is little scope however, to redefine the aim and scope of a university. Unlike private corporations, universities are providers of public goods, education and research, and by their definition, they would no longer be universities, if this aim and scope was changed. This does not mean however, that there cannot be collateral activities (such as consultancy or outreach activities, etc.) but they would always be subsidiary (which is why such activities are not considered in this study).

Academic research in general has no direct consumer. However, it is valued in a number of ways, first, by other researchers such as peer reviewers, and by external funding bodies such as research councils. While the latter directly influences the revenue in the form of research grants, the former only indirectly influence the revenue, as publications may trigger funding from other sources. Second, research publications may be quoted by other researchers. This may lead to prominence which in turn may give better access to funding.

The definition of research is also relatively well-defined and stable. Research, essentially, is what peers acknowledge as research. This acknowledgement is expressed through acceptance of research results for publication by journals, publishers and conferences. Criteria for acceptance are defined by the research culture and may vary significantly from one research field to another. Research cultures may change over time, but essentially it is not up to the individual research institution or department to define the criteria.

In a strategic perspective, the competitors can be defined at three levels. On the societal level, research competes with other economic sectors for its share of the overall economy. Within the research world, each field of research competes with other fields of research over their shares of the total research economy. And within each field of research, research departments and institutions compete with other research departments and institutions over the distribution of funding for their particular field of research.

There is very little a research department can do to directly influence competition on the societal and research world levels. A research department can at best contribute to the discourses at these levels and hope that over time this will favour its particular field. On the research world level, one such discourse concerns the definition of performance measurement methods which may reflect some research cultures more than others and hence prioritise some types of research over others.

On the level of particular fields of research, strategic advantage over competitors is achieved first and foremost by producing better research for the reasons explained above. In conclusion, the benefits of focusing on the environment are limited in a strategic research management perspective. Therefore, competitive advantage must be achieved through focusing on the internal resources.

C. Resources

A university department is a professional organisation. It produces highly specialised services with little scope for standardisation as each task is unique. The most important resource therefore, is the research employees. This means that the most important challenge for a university department is to attract the best possible academics and to keep the ones it has. In order to do so, it must offer the most attractive work conditions possible for its researchers.

Ultimately, successful professionals are likely to have high requirements to their work conditions. If these are not met, there is a risk that they might leave for a better position, which would cause a blow to the department, as the knowledge and performance capacity of the department resides with the professional (Løwendahl, 2005).

On the other hand, less successful professionals are unlikely to have high requirements to their work environment, and hence will accept less attractive work conditions, as they do not have an alternative. In principle this is even more true in a university environment than in private firms for a number of reasons:

1. Universities have a sort of monopoly status in that academics are likely to have to move geographically in order to change to another, similar position. This is particularly true outside of larger urban areas where there might be only one university with a department in the academic's professional field.

2. Very often therefore, only those willing – and able – to move geographically in order to make a career move will have a real alternative to their current position, as the only alternative would otherwise be to leave academia.

3. The fact that most senior academics in Denmark hold permanent positions which it is very unlikely to get sacked from, means that for less ambitious academics there is a very small incentive to improve their performance.

IV. The architecture and design section in a strategic perspective

This section profiles the resources of the AD section of the ADMT in terms of its researchers and their research production. The profile is based in part on statistics from the PURE and VBN databases. Due to ambiguities between different database readings and practical difficulties in acquiring comparable database readings and the fact that some statistics have only been acquired for one year, the information which is presented here is only indicative.

A. AD academic staff

AD has a total full-time staff of 56 employees, distributed across academic staff (line staff) and secretarial, technical and academic support staff with an approximate ratio of line to support staff of 3:1 (figure).

Number of AD staff by staff category
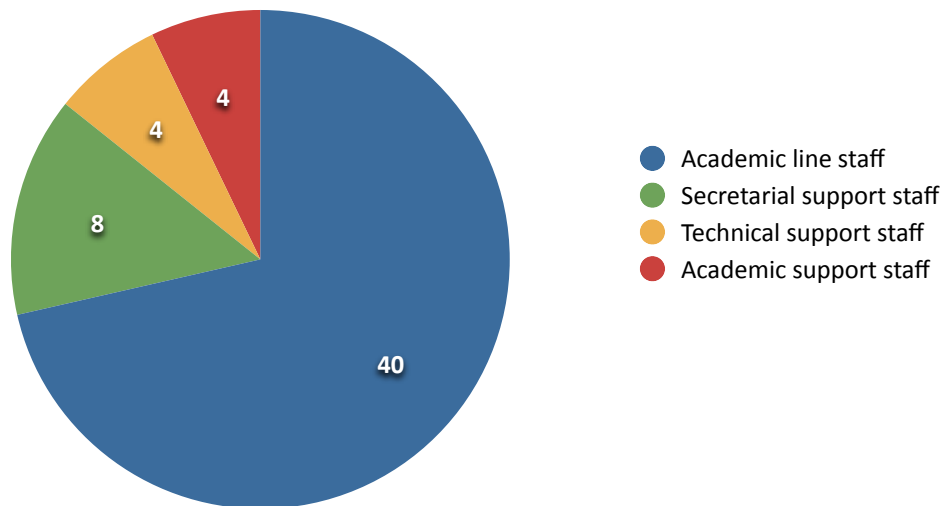
Source: VBN, 2010, adapted by the author. Graphics: The author

The history and previous success of AD is based on the architecture and design teaching programme. From its inception in 1997, the programme quickly grew to become the third largest teaching programme at Aalborg University with a present student base of approximately 600 students. For most of the section's history this has led to a prioritisation of teaching over research, both among the individual academic staff members and in the recruiting policies for the section (formerly department). The academic staff at AD can therefore be described within three categories:

1. Educators. Faculty who identify themselves as teachers rather than researchers, who typically do not have a PhD degree and whose research production is none or second to none.

2. Educator-researchers. Faculty who have done research but whose teaching is important to their professional identity. Their research is largely defined by their field of teaching or springs from it. They may or may not have a PhD degree, but do generally not have a strong research identity and have a modest research production.

3. Researchers. Faculty who have a continuous research production and publish internationally in peer reviewed books and/or journals.

B.   Publications

In 2009, the AD researchers published a total of 100 publications in the form of journal articles, book chapters, conference articles, PhD dissertations, books, and other publications (figure). The vast majority of publications consisted of conference articles and other publications which represent approximately a third of the total number of publications respectively. While some conference articles may release points if a conference proceedings is published with a recognised publisher, publications listed as 'other' do not release points.

Number of publications by publication type, 2009
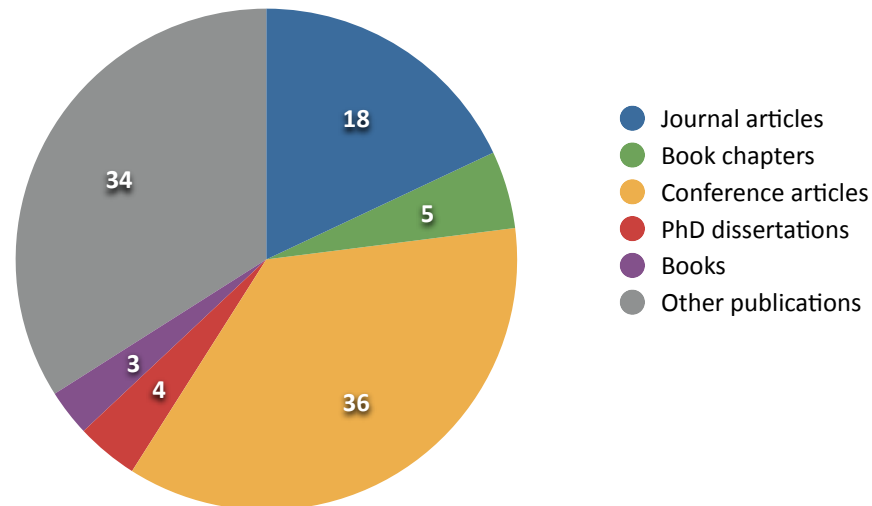
Source: PURE, extracted by Malene Knudsen, the VBN editorial office, 2010. Graphics: The author

In a strategic perspective, it is important how a research text is published, as different types of publications release different numbers of points. The following points are released for Group 1 and 2 publications for each publication type:

Publication type	Group 1	Group 2
Books (scientific monographs)	6	6
Journal articles	1	3
Book chapters (articles in scientific anthologies)	0,75	0,75
PhD dissertations	2	–
Doctoral dissertations	5	–
Patents	1	–

Source: The VBN editorial office, 2010

In this context, conference articles are not listed separately but count as either journal articles or book chapters depending on how they are published, provided they are published by a recognised journal or publisher. Currently, book publishers are not ranked into Group 1 and 2, but they will be so in a matter of time. PhD and doctoral dissertations and patents by definition always release points and cannot be ranked.

Due to the different number of points released by the different publication types the number of points generated for each publication type is not proportional to the number of publications for each publication type. This becomes very clear when comparing the previous pie chart to the following, which shows the number of points which the 100 publications of 2009 generated by type of publication (figure).

Points by publication type, 2009
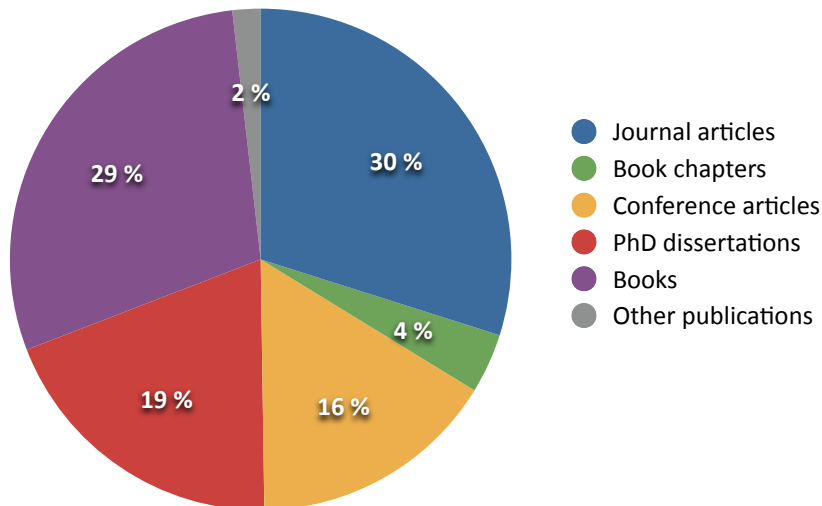
Source: PURE, extracted by Malene Knudsen, the VBN editorial office, 2010. Graphics: The author

While conference articles and other articles make up 70% of all publications by number, they make up a mere 18% of all the generated points. Inversely, journal articles make up 18% in numbers and 30% in points. In relation to articles and chapters, entire PhD dissertations and books represent a lot of work pr. publication. Therefore, PhD dissertations and books count much more in points than in numbers.

Publications total and publications with points by publication type, 2009

Source: PURE, extracted by Malene Knudsen, the VBN editorial office, 2010. Graphics: The author

In terms of generating points, it is three times more efficient to publish journal articles than conference articles, as the ratio of numbers to points is 1,5 for journal articles and 0,5 for conference articles. A third of all publications ('other') are notoriously inefficient. Although it is difficult to estimate, it is probable that PhD dissertations and books also require relatively more work per point generated than journal articles. The horizontal bar chart above shows the relation between number of publications and number of points for each publication type (figure).

If the 2009 data is representative of a longer time span, it seems as a changed publication pattern could significantly improve the departments performance. On the one hand, a third of all publications generate no point, and another third, conference articles, are very inefficient in doing so. It may also cause some worry, that almost half of all points are generated by PhD dissertations and books. Not only is it probably hard earned points but it is also very volatile, as a small variation of the number of published PhD dissertations and books will result in a large variation in the number of points generated.

The BFI will increase its importance int the coming year. Hence, the share of the university budgets which is based on the BFI will raise from 10% in 2010 to 25% in 2012 (figure). This means that the share based on the BFI is expected to outgrow the share generated from external funding. In other words, the BFI based share of funding other than basic funding (education and PhDs) is expected to grow from 22% to 55% in only three years. As these funds make up the actual research budgets when basic operation expenses are paid (salaries, rent, inventory, etc.), this development is likely to be critical for the research scope in the very near future.

Relative distribution of sources of funding, 2010-12
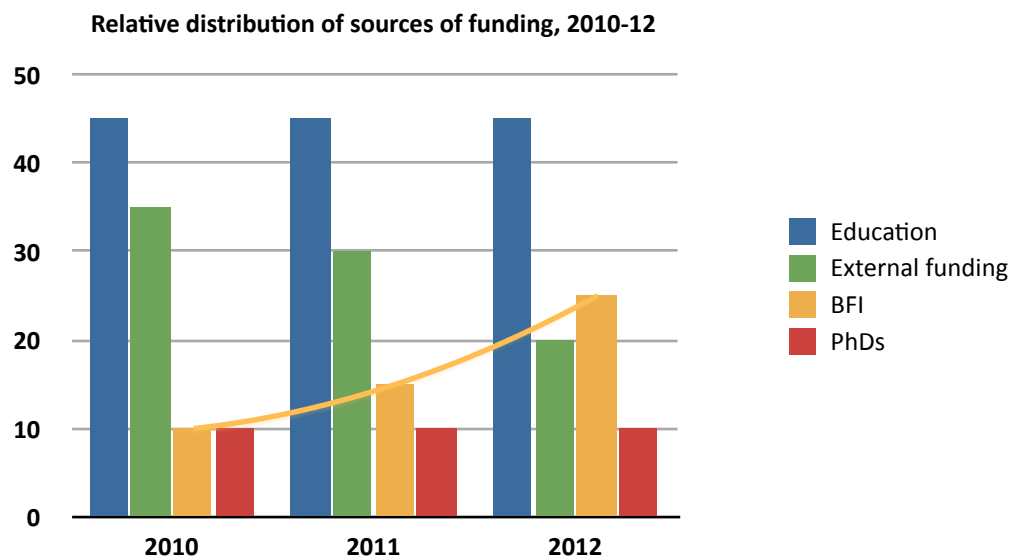
Source: The VBN editorial office, 2010. Graphics: The author

C. Journal publications

In the five year period 2006-10, the AD researchers published a total of 58 journal articles (figure) or approximately 0,3 journal articles pr. academic pr. year. Some 70% of these articles were published in journals on the BFI list, which means that they count in the performance measurement and generate revenue, while the remaining 30% were published in journals which do not qualify for inclusion in the BFI list. Although it is difficult to extract exact numbers, AD seems to have a publication frequency which is considerably below the university average.

Journal publication pattern, 2006-10
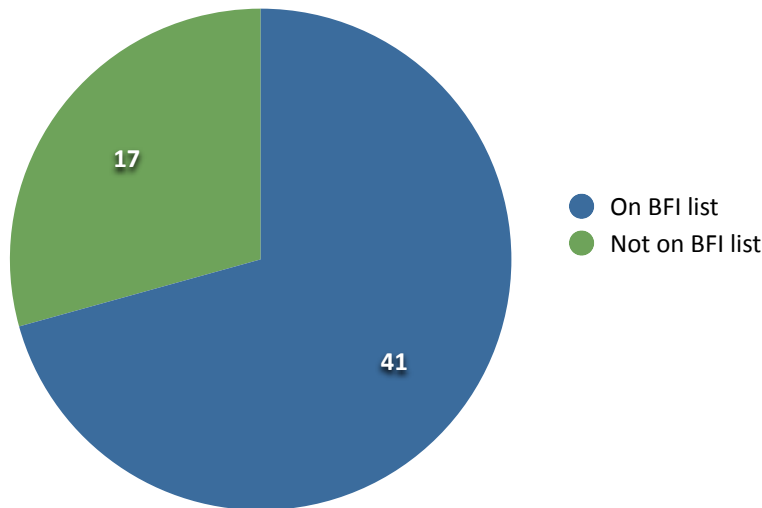
Source: VBN and BFI, 2010. Adapted by the author. Graphics: The author

The journal publications of 2006-10 are very unevenly distributed among the academic staff. Thus, the top 4 most publishing researchers authored nearly half of all the articles (figure).

Articles in listed journals by researcher, 2006-10
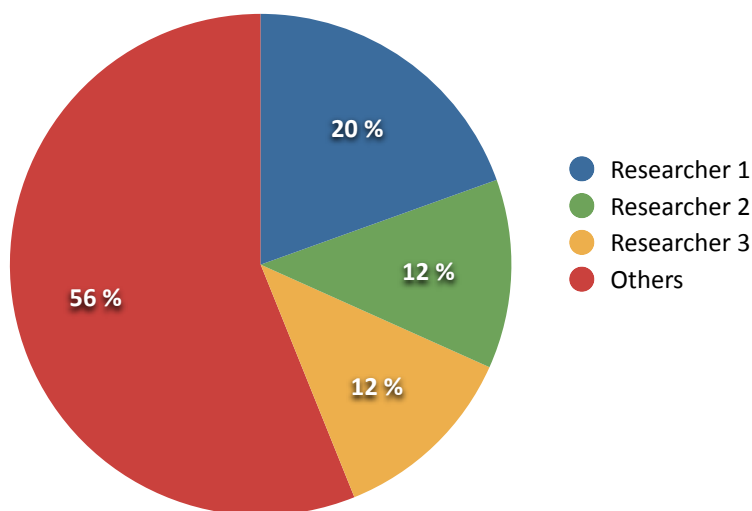
Source: VBN and BFI, 2010. Adapted by the author. Graphics: The author

Similar disproportions appears in the distribution among journals. Among the 41 articles published in listed journals, 40% appeared in only 2 journals (figure overleaf).

The journals in the BFI list are distributed into 67 research areas which in turn, are ranked into two groups, Group 1 and 2. Group 2 comprises the top 20% internationally acclaimed journals while Group 1 comprises the remaining 80% of the journals. The 20/80 share is based on the turnover of Danish articles which are published in any group of journals. In order to encourage publication in high ranking journals, articles in Group 1 journals release 1 point while articles in Group 2 journals release 3 points.

Articles in listed journals by journal, 2006-10
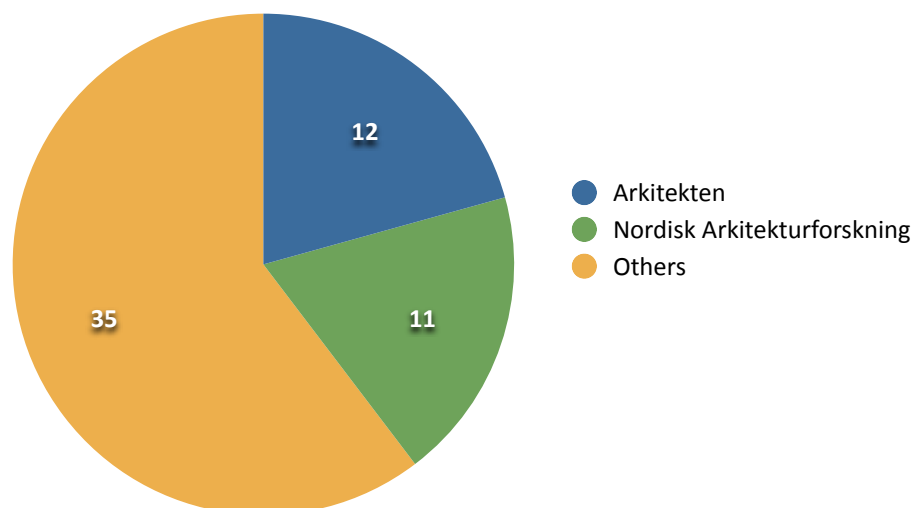
Source: VBN and BFI, 2010. Adapted by the author. Graphics: The author

At the Aalborg University, each point releases DKK 17.000 in the 2011 budget. Hence, while a Group 1 journal article releases DKK 17.000, a Group 2 journal article releases DKK 51.000.

One of the two journals which accounts for 40% of the total number of articles in listed journals in 2006-10, Arkitekten, is currently listed as a Group 1 journal. However, it does not comply with the formal criteria to be listed in the BFI, as it does not have peer review. The reason why this is possible is that the whole BFI system is in its inception and the list must therefore be considered a gross list which is to be refined. It must therefore be anticipated, that this journal will exit the BFI list in a matter of time.

The other journal, Nordic Journal of Architectural Research, currently listed as a Group 2 journal. However, it does not comply with the formal criteria to be listed as a Group 2 journal in the BFI, as it does not have an international review committee outside the Nordic countries and hardly has any contributions from outside the Nordic countries either. Furthermore, as a non-commercial journal run by peers and hosted at Nordic universities on a rotation basis, its recent publications have been infrequent and its immediate future is uncertain, due to disagreement among the cooperation partners.

D.   Summary

A raised focus on performance measurement and incentives means that the department budget share based on point generating publications will more than double from 10% to 25% during 2010-12 (or from 22% to 55% of the actual research budget, as explained above). As ADMT seems to have a publication frequency below the university average, this may strike ADMT harder than other university departments.

In addition to this, the research capacity of the AD academic staff is very varied, from staff who hardly do any research to staff who have a standard academic publication frequency. When looking at the AD publication pattern, much effort is waisted on publications which do not generate points or publication types for which points are hard-earned.

Half of the points are generated from PhD dissertations and books (provided the 2009 data is representative), This makes the department vulnerable to small variations in the publication frequency for these types of publications.

For the most efficient type of publication, journal articles, the publication pattern is very asymmetrical, both in terms of publications per researcher and per journal. The fact that the future presence of the two journals with the highest number of AD contributions is uncertain means that the department's journal publication performance is seriously at stake.

In sum, practically all indicators show that ADMT is facing significant challenges in the near future, unless action is taken to improve its research resources and its performance.

V.   What does the department management do?

In recognition of the interpreted wish for self-management and in respect of the freedom of research, the head of department pursues a policy of minimum interference. This policy is guided by the metaphor of the self-organisation of a temporary camping site such as at outdoor rock festivals. On such a camping site, everyone is free to put up his/her tent anywhere, as long as a system of access ways is kept free in order to allow for people and services to move around (figure).

Aerial view of a festival camping site. Source: Getty Images

By this metaphor, each tent represents the individual researchers who are free to do their research in whatever field they want and to cluster with whomever they want, while the access ways represent the organisational framework which the department offers in terms of support staff, services and equipment. In more concrete terms, the head of department does not wish to force specific requirements onto the research staff, but merely to encourage research and provide services whenever they are asked for.

The head of department acknowledges that some of the senior academic staff are educators with little or no research production (cf. definitions above), but contends that this is due to the original criteria for their employment with the department, resulting in restricted potential for change, due to their lack of research training and motivation. Conversely, the junior staff, PhD students and assistant professors with PhD degrees are seen as the future resource base for the department's research.

In accordance with the festival metaphor, use of resources for training and coaching of academic staff in order to improve their research performance, while clearly a management task, should be prioritised to encourage those who are most likely to engage positively. While the junior staff receives formal training through required PhD courses, training and coaching the senior staff educators is considered to be a waste of resources, as it is not expected to change the research performance of this category of staff anyway.

In terms of incentives, it is held that the prospect of better research resources through external funding is in itself enough to make researchers think in terms of acquiring external funding. There is a general reservation towards using incentives, as there is a worry that it would harm the team spirit. In particular, the head of department is wary of too blatant incentives as they are seen as potentially counter-productive. The AD research staff is considered to be a special breed with a lot of creative initiative and driven by a different kind of motivation. Hence, incentives are not considered to be consistent with the professional culture. In addition, incentives are seen as a potentially corruptive of professional ethics.

Performance monitoring is adequately catered for by means of VBN and the yearly personal development talks (MUS). While VBN offers a quantitative measurement of the research production, the MUS offers a qualitative, on-to-one forum for the communication of individual obligations, needs and wishes. And communication of general information and department initiatives is catered for mainly through the half-yearly 'research days' which are open for all academic staff.

VI. What does the department management plan to do?

In order to formulate and implement a research strategy, a department research council (DRC) has been formed with representatives from each the department's four research groups. The head of department sees this as an important delegation of management responsibility and foresees that the DRC will have certain measure of executive power. The head of the DRC however, is hesitant towards this prospect and insists that the DRC should only have a counselling role.

The DRC has written a draft note concerning the department's organisation and research strategy for 2010-14 (Jensen, 2010). The note lists 11 current areas of research within the department which are clustered into 4 research groups which will form the new organisational structure of the department. All academic staff will be hosted in one or more of these research groups according to their research interests.

The note states that "[the department's] primary research goal is to build and maintain a national, international and dynamic research culture and environment within the fields of the department's programs based on values of creativity, broad mindedness and cooperation with a variety of partners […]" (ibid. p. 4). It also states that this goal must be achieved through academic activity among all academic staff, peer reviewed publication, conferences, research projects, an active PhD environment, and innovative thinking.

It is stated as strategy components to encourage cross-disciplinary research, as well as to increase the application for external funding.

In addition to the aims put forward in the organisation and research strategy note, the head of department foresees that the DRC will play an active role in encouraging cross-disciplinary activities and linking individual researchers with one another.

VII. What do the researchers do?

This section gives an account of the actual research behaviour in the architecture and design section at ADMT. The account is based in part on the VBN and PURE databases, and in part on interviews made with seven researchers across the four research subfields[2] of the architecture and design section at ADMT. While figures and facts are drawn from the two databases, more qualitative insight is acquired through the interviews.

The interviewees are not statistically representative for all the researchers within the architecture and design section at ADMT, but have nonetheless been chosen for their variety of research styles and volume, based on the author's personal knowledge, as well as for their distribution across the four subfields of research within the architecture and design section at ADMT.

Among the seven interviewees, two do not have a PhD degree, while one other only received his/her PhD degree after having worked as a researcher for over a decade and has not received any formalised research training. Two of the interviewees have held long term positions at other research institutions, while two others have been visiting other research institutions for shorter periods of time. Two of the interviewees have substantial international experience while two others have some international experience.

Both male and female researchers have been interviewed (proportional to the app. 4/1 ratio of male to female ratio of the the architecture and design section at ADMT). Only senior faculty has been interviewed. This is not intentional but due to limits of this study, as only a limited number of interviews could be done. Obviously, the behaviour and views of PhD students and assistant professors would be relevant to a more thorough strategic analysis and strategy formulation.

A.   Research pattern

There is a big variation in the way the interviewees conduct their research. This variation seems – to some degree – to relate to the interviewees' degree of formal research training and to whether they identify themselves as educators or

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[2] The four subfields are architecture, digital design, industrial design and urban design.

researchers. The research methods range from social science (questionnaire and interview based) and anthropological methods to case studies and theoretical research. No experimental or lab-based research is conducted by any of the interviewees.

One interviewee was unable to reflect over his/her research method and simply referred to study tours and writing when asked about his/her method. While one interviewee keeps a record of his/her work in progress to keep an overview of where different writings are in the process of writing and publication, others are unable to name central journals in their field and never published a peer reviewed journal article.

B. *Publication pattern*

As described in section IV, the department's BFI listed publications fall into mainly four categories, journal and conference articles, PhD dissertations and books. While the interviewees' publication pattern is dominated by journal articles (listed and non-listed), one mainly publishes in books, one in conferences, while one hardly publishes at all. Apart from with 2-3 of the interviewees, most of the interviewees have only published in a limited number of journals, and there is a general lack of knowledge as to which journals might be relevant to them.

While the challenge of publishing in peer reviewed journals is to meet the standards of the journal and the requests from the reviewers, publishing books requires funding with most publishers. Reversely, the benefits of publishing in a journal is that there is no cost, while it is generally easier to publish a book, as peer review is unlikely to be as strict as for journals. Another advantage of publishing in journals is that you reach a potentially wider audience with a more specific interest in your field of research – and a proportionally higher probability that your work will be cited by others. With books on the other hand, you reach a more general audience and may have your publication reviewed in a journal.

With a few exceptions, most book publications are written in Danish, and mostly published at Aalborg University Press which up until recently did not have international distribution for their books.[3] This vastly reduces the potential dissemination of the research published in books, as the the potential Danish speaking audience is limited and as even English language books do not disperse beyond the national border. While this is irrelevant in relation to the performance measurement aspect of publication (in as far as book publishers have not yet been ranked into different groups within the BFI), it is relevant to the wider benefits of publishing research.

While some conference proceedings are recognised within the BFI, this is by far true for all. This has implications for the performance measurement aspect of publishing conference papers. Apart from that, publishing in the format of conference papers shares some of the characteristics of book publishing. While it costs money to take part in a conference, reviews are likely to be less strict than for journal articles. Also, the impact of a conference paper is likely to be less than for a journal paper, even though conference proceedings are increasingly made accessible due to cataloguing and online distribution. However, as it will be dis-

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[3]Personal communication with editor in chief, Pernille Herold, Aalborg University Press

cussed later, the main value of conference papers probably lies in the area of feedback and networking, rather than in the publishing value.

In terms of performance measurement, books generally require more work per point according to the BFI, as monographs are appointed 5 points, while journal articles, which are much shorter and may overlap from an overlapping base of research, are appointed 1-3 points.

C. Financing pattern

Two of the interviewees have more or less continuously had external funding for their research, while two others only recently started having external funding. Yet two interviewees did have external funding in the past but did not have it at present, and would typically not have external funding or only limited external funding. One interviewee never had external funding for his/her research.

While it is an integral part of the research behaviour of some of the interviewees to apply for funding, others state that they feel compelled to apply for external funding because department money for research has become increasingly difficult to obtain, even though they would prefer not to have to spend time on application procedures. One stated that his/her research did not require much funding and that he/she is mostly able to cover expenses in ways other than through direct external funds.

D. Networking

Professional networks among the interviewees seem to fall into one of three categories:

1. Local networks within the department and the university, and possibly other national research environments developed mostly through teaching activities.

2. Nordic networks developed as a result as a historical orientation towards the Nordic countries and partly due to language barriers.

3. International networks, typically focused on a part or parts of the world developed through previous positions, conferences and international collaborations.

Some of the interviewees use their networks simply as a contact base through which they stay updated with events within their field, such as new developments, conference activities, and career moves among colleagues. Others have more formal collaborations within their network, which also tend to define it in the first place. None of the interviewees stated that they have a deliberate way of using their network, but most nonetheless stated that they felt that their network is important to them in their professional life although not all linked this importance specifically to their research activities.

E. Summary

Based on the interviews for this study, the AD researcher base seems to be carrying out cost-economic research which does not rely on expensive equipment or large setups. It varies significantly in terms of the researchers' research capacity and publication frequency. Although it has not been quantitatively ex-

amined, the impression is, that the amount of external funding is modest, if not low. This impression is sustained by the strategic aim of increasing the amount of external funding as expressed in section VI.

VIII. What do the researchers want?

This section gives an account of the interviewees' reflections on how they could possibly become better and more productive in their research. They were asked to reflect upon their personal performance, the performance of support functions, as well as the performance of the organisational framework of the department. Furthermore, as performance measurement is often linked to incentives, they were asked to consider whether incentive structures would possibly change their behaviour and how. They were also to consider what other improvements might benefit their research performance, and whether they felt that they lack particular research knowledge, skills and competencies.

A.   *Personal performance*

The interviewees generally felt that they were being effective in their own research work. It was a general complaint however, that it is difficult to have enough coherent space in time for writing, as there are many interruptions in the form of teaching and administrative task and particularly eMails that need to be attended to. The potential possibility of retreating to a writers' refuge did not appear attractive, as the interviewees generally prefer to work in their offices, where they have their materials, etc.

B.   *Support functions*

The interviewees almost in unison complained about the absence of support staff for research tasks. On the contrary, most interviewees felt that they themselves have to perform administrative tasks which they thought they ought not do and which they certainly do not like. The general impression is, that the administrative staff is mainly concerned with performing tasks which are demanded by higher administrative levels, leaving it to the academic staff to perform many administrative tasks related to teaching.

When asked to specify what kind of administrative support they would like in their research, some pointed to the need of academic support staff to perform routine research tasks such as literature searches or the compilation of questionnaires, etc. However, some stated that they would prefer to hire students to do such tasks, as they are more capable than secretarial staff and cheaper and more easy to hire for specific tasks than academic staff. However, hiring students is only possible with external funding.

Some would like to have better secretarial support for proof reading (particularly of English texts) and translation of texts. A need for more support for writing grants applications and guidance for potential sources of funding was stressed by most of the interviewees. A few however, were unable to specify any particular needs for support in relation to their research.

One interviewee expressed a wish for systematic peer coaching among his/her colleagues within the department. Among the components which such a coaching might include, he/she suggested mutual discussion and critique of work in

progress, exchange of ideas and knowledge about relevant journals for publication and sources of funding, and cooperation in grant application and other activities which the individual researcher might feel uncomfortable or unknowing about.

C. Organisational framework

As mentioned above, there was a widespread impression among the interviewees, that organisational procedures are designed more to the benefit of 'the system' than to the benefit of the individual researcher. They also feel that they are continuously asked to follow tedious procedures for accounting for expenses or workloads, etc. There is also a widespread impression among the interviewees that whenever they need something off 'the system', almost regardless of the nature of their needs, there is very little help to expect.

In terms of cooperation between colleagues, most interviewees felt that it works well in terms of educational tasks, but regretted that the monthly research group meetings tend to be more about education and administration than about research.

With regard to management, several interviewees feel that the department management is weak and invisible. A more proactive management which is more responsive to the needs of the individual researchers is called for, although it is acknowledged that managing a group of academics who see themselves largely as independent researchers is a difficult task, and that a more 'bossy' management style would not be productive.

D. Physical settings

The interviewees were generally satisfied with the physical settings of the department and did not feel that they inhibited them in terms of being efficient researchers. The department does not have any research labs, apart from a workshop with various rapid prototyping equipment which is mainly used by students. But as most of the researchers perform 'desktop research' – apart from whatever empirical case based research may be performed – this is not considered a problem. Some criticism was made however, about the functionality and provision of ICT (computers, peripherals and software) and related services.

Some interviewees welcomed the fact that the department is planned to move to a new, dedicated building and to merge physically with the media technology section, but were also hesitant towards the reality of the move, as it has been planned for the past 6-7 years and seems to lie 2-3 years ahead.

E. Incentives

The question of incentives seems to divide the interviewees. Typically the senior interviewees rejected the idea all together, mostly on ideological and ethic grounds, stating that they are not motivated by incentives but solely by their professional interests. Neither pecuniary or career related incentives, nor service and privilege related incentives resonated with this group. One even felt an obligation to disseminate research in a non-scholarly form in order to reach a larger professional and student audience which he/she preferred over producing research publications.

Some of the mid-career interviewees, who are also among the more productive researchers, however, did favour the idea of some kind of incentives, either in the form of improved research funding, bonuses, or in the form of privileges such as reduced teaching obligations or availability of research or personal assistance. One interviewee stressed however, that it is important that incentives are designed to strengthen cooperation among colleagues rather than competition.

F.   Knowledge, skills and competencies

The question of what knowledge, skills and competencies the interviewees felt that they lacked in order to become more efficient divided the interviewees along similar lines as the question of incentives. While some senior interviewees lack language and ICT skills, some of the mid-career interviewees felt they lacked managerial competencies and knowledge about fundraising and funding bodies.

The fact that the educator and educator-researcher interviewees list language and ICT skills among their deficiencies, while researcher interviewees list managerial and organisational knowledge and competencies seems to correspond well with their differences in research competence. Language and ICT skills address the desire to do better research while managerial and organisational knowledge and competencies address a desire to provide better conditions for doing research.

IX.   Discussion

From a strategic perspective, AD is in a critical situation. On the one hand, its environment is changing towards an increased focus research output and increased linkage of budgets to performance. On the other hand, AD as an organisation which has its roots in a strong educational focus, is performing below average in terms of research and is poorly equipped to improve its performance.

There is a rising awareness about this among the academic staff, as expressed in the wish for improving research related knowledge, skills and competencies. In a strategic and change management perspective this is very important, as this is a prerequisite for successful change in professional organisations (Kotter 1999). However, a number of challenges – big and small – lie ahead before change can lead to improved performance and competitiveness.

A.   Staff-management dynamism

With the intent of safeguarding the right to free research, the management is guided by a principle of minimum intervention. It seems however, that this is considered by the academic staff to be insufficient. Access ways in the form of passive service and support, in other words, might not be enough to instigate a changed research behaviour. Exchange between staff and management about the style and level of management therefore seems to be an important first step. While the analysis that professionals require particular forms of management is correct (Andersen, Barlebo Rasmussen 2005, Løwendahl 2005), the conclusion to follow a principle of minimum interference might be wrong.

Beyer (2006) among others, argues in favour of the concept of leadership rather than management as an appropriate response to managing professional organisations. Resonant leadership (Goleman, Boyatzis & McKee 2009; 2003) and

value-based, communication and learning-driven leadership (Beyer 2006) engages with the professionals in a dialogue towards self-management. Hence the goal – independence and self-control on the part of the professional – is the same, but the way to reach the goal should be through interaction rather than minimum intervention.

B.   Excursion on free research

That free research is free means that the individual researcher may choose for herself, what the topic of her research should be. In other words, no requirements are made as to whether the new knowledge is applicable, relevant, can be externally funded, etc. This is considered important from the point of view that what motivates the individual researchers the most is whatever they take a professional interest in. Hence, if they were to do research which was bound by some kind of external concerns, they would be less motivated and therefore do poorer research. As there is no external customer asking for a particular service (research), this seems to be a meaningful position to hold.

However, research is never 'free' in a universal sense, as every choice introduces certain possibilities and limitations. The topic which the researcher takes interest in may not be easy to fund. Such a topic will obviously not be economically free, as money would represent a limitation. The same is true for very expensive types of research. Research interests which are shared by only few other researchers or mainly by researchers who are far away would have a limited scope for exchange and collaboration. On the other hand it is likely to be new and with a high scope for generation of new knowledge.

Free research then seems to a certain extent to be a choice between topical, economic, collaborative and other types of freedom. However, to be able to make the best choice is dependent on the ability to make informed choices about the necessary trade-offs between different types of freedom. And the individual researcher – particularly if she has a modest research history – may require additional knowledge and training in order to be able to make informed choices.

This is something which even the least experienced researcher is aware about, and which even the most experienced researcher may still want. To facilitate free research in its wider definition also means to set the researchers free through upgrading their capacity to set their research free in economic, qualitative and collaborative terms.

C.   Peer coaching and learning

Educators, educator-researchers and researchers might have different training and coaching needs but most of them nonetheless have such needs. Some lack fundamental knowledge such as how to write an academic paper and where to publish it, knowledge of the BFI and how it is used (much to the astonishment of the head of department who states that it has been repeatedly communicated on the department research days), or knowledge of how to raise funds and to have fundraising support through the university fundraising agency.

As stated by one of the interviewees, a more formalised system of peer coaching and joint paper writing seems relevant. Peer learning among the department researchers has a huge potential, particularly for improving the research per-

formance of less capable researchers, but also for raising the general awareness and attention towards the importance of better research performance.

Although it is free for all to engage in such activities out of their own initiative and despite the fact that it is encouraged by the department management (albeit passively), it does not seem to happen in any substantial measure without some kind of formalised structures for peer coaching and learning.

D. Support structures

Typically, the number of secretaries (support staff) is discussed relative to the number of researcher (line staff). And typically, the idea is, that the ratio should be kept as low as possible. A possible negative effect of that is that line staff (researchers) find themselves fulfilling a number of support functions (administrative tasks) which they do not want or like.

It seems more meaningful to consider the number of support staff relative to the output (research and teaching). What is relevant is the cost of producing output. If a higher ratio of support to line staff produces a higher output relative to the wage costs, this is preferable from an efficiency point of view. But it is also preferable from a researcher's point of view, as each researcher would then get more time do research rather than administrative tasks.

It is desirable to have the highest possible number of researchers, as this creates a bigger, professionally more sustainable and stimulating work environment. However, the actual benefit of this is diminished if the researchers have to spend a considerable amount of their work time on administrative tasks.

As budgets are linked to productivity, there is an incentive for the individual researchers to have more support staff (initially at the cost of hiring more line staff), as they would be lifted off of some of their administrative tasks. In turn, they would then be able to produce more output, which again would allow the department to hire more academic staff, as soon as the increase in productivity leads to improved budgets. This is provided of course, that more support staff does actually lead to higher efficiency among the academic staff.

E. Performance measurement

It is deeply rooted in academic culture that individual academics enjoy a high degree of autonomy in organising and conducting their work without having to report to the management. Hence, there is likely to be a high degree of hesitation among academics towards any kind of performance measurement. As discussed in section II however, this may rely on wrong assumptions about the nature of performance measurement and a lack of knowledge about the potentials of performance measurement when designed appropriately.

Also, espoused values in academia may not necessarily correspond with the fundamental assumptions of the individual researchers (Schein 1991). If this is the case, the discrepancy between the two is likely to lead to wrong interpretations about how an academic organisation actually works. In discussions among the AD academic staff there seems to be a certain level of dissatisfaction with the fact that in the current system, only teaching is measured quantitatively, whereas research is simply supposed to happen during the remaining work time.

Also, the official estimate that administration is supposed to take up 10% of all work time is considered grossly out of proportions with reality, as practically all researchers have a feeling that administrative tasks make up a significantly larger proportion of the work time. While there is no culture of keeping time sheets, this remains a feeling rather than a fact, which makes it very difficult to respond to.

For this study, the interviewees were asked to keep time sheets for a period of ten days. However, at the time of writing, only two time sheets have been returned, and this element has therefore not been included in the study. While the possible conclusions which might have been drawn from analysing these few time sheets for such a limited period of time would not bear any statistical significance, they might have been indicative of how time is actually spent. And nonetheless, gaining a quantitative idea of how time is spent is a necessary prerequisite for deliberate action towards change, should the feeling prove to be true.

On a more fundamental level, some kind of performance measurement is needed in order to evaluate whether strategic goals are within reach. With an appropriate design, performance measurement may lead to beneficial effects without causing perverse effects and hence find support even among academics. And even if performance measurement may still be an alien concept in current academic culture, organisational culture, as Schein argues (1991), can be changed through deliberate action.

F.   Incentives

Incentives are a means to stimulate productive behaviour. Blatant incentives might lead to perverted behaviour, as the head of department rightly worries. But if incentives are designed with regard to the design principles discussed in section II, they may stimulate research performance and leave the staff with a heightened feeling of appreciation of their performance.

It lies deep in the ethos of academics that what they do in their job, they do out of professional interest rather than for the monthly pay check. Not that money is unimportant, but if the pay is considered to be reasonable, other factors play a far bigger role (Løwendahl 2005).

However, total freedom and lack of peer and/or management concern for the professional's performance is in itself likely to be a demotivating factor. Not only may it invoke a feeling of "who cares anyway", but a feeling of frustration might also occur, if the potential lack of performance of colleagues is accepted without consequences.

If rewards are too small and symbolic, they will be deemed degrading. Ironically, the same might be the case if rewards are too high. However, appropriately measured rewards may be considered both welcome and instrumental, and hence worth aiming for, as the scale of the reward is deemed both decorous and functional.

At AD, the fear that an individualist culture might grow from introducing incentives on the expense of a collaborative culture is equally shared among staff and management. But performance measurement should be looked upon as a lever for becoming better as individuals and as a group, and not as something

irrelevant which has been forced upon the department, and which might therefore be responded to with 'perverting behaviour' (De Bruijn, 2007). And if incentives are designed to stimulate collaboration and growth in performative capacity rather than just focusing on output, they may not only be motivating but also lead to an increased overall performance for the department in the long perspective.

X. Conclusion and perspectives

This study has been examining the strategic position of AD in an environment which is changing towards a raised focus on research and the linkage of research performance to budgets. Due to the weak research performance of AD, its strategic position is weakened in the light of this environmental change, and some form of action is needed.

Even though the formulation of a research strategy for AD would require a more thorough analysis than it was possible within the scope of this study, some preliminary conclusions seem fair to make. As there is little scope for redefining the environment as well as the output, attention must be directed towards the department's internal management, resources and organisation.

It seems relevant to consider the department's management style and change it from a policy of minimum intervention into increased interaction between staff and management. It also seems that a more formalised system of peer coaching and learning might be beneficial in order to improve the overall research capacity and output of the department. Furthermore, some form of performance measurement linked with appropriately designed incentives might be relevant tools in order to improve and monitor performance, and in order to evaluate to which extent strategic goals are within reach.

In order to formulate and execute a research strategy for the department, additional analyses and actions must be made. The media technology section which has not been analysed in this study should also be analysed in order to get a full overview of the strategic position of the department as a whole. And the staff should be engaged to actively take part in the strategy design.

Previous initiatives, the formation of the DRC and the committee's note on organisation and research strategy is a first step. But the strategy note is still far from constituting an actual strategy, as it does not define concrete goals and does not offer a framework for evaluating whether such goals are within reach.

A lot of work still lies ahead.

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