

ACUMEN

academic careers understood through measurement and norms

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D6.9 Expert workshop proceedings

Stakeholder Workshop, 24 January 2014 – Brussels

Workshop description

ACUMEN has organized its final deployment workshop to test the portfolio from an evaluator's perspective in Brussels on 24 January 2014. The target audience for the event are evaluators and evaluation officers, most of whom will be senior researchers themselves, from a wide representation of fields and from different backgrounds. The program includes plenary presentations on the ACUMEN project in the morning, and in the afternoon break-away sessions in which use cases of the portfolio will be extensively discussed.

During this capstone meeting, the ACUMEN portfolio has been tested in concept and implementation from an evaluator's perspective, in three focus groups, by using personas and use cases prepared in advance. There are two personas: from philosophy and environmental engineering; one male, one female; both mid-career but of different age.

Workshop Programme

10h30 Registration and welcome

11h00 Introduction to the ACUMEN project

Paul Wouters, principal investigator, CWTS – Leiden University, the Netherlands

11h30 Keynote address: "On Quantity and Quality: Evaluating achievement in academia"

Susanne Weigelin-Schwiedrzik, Vice-Rector of Research and Career Development, University of Vienna, Austria

12h00 The ACUMEN Portfolio and its Guidelines for Evaluation Practices

Judit Bar-Ilan, Bar-Ilan University, Israel; Mike Thelwall, University of Wolverhampton, United Kingdom

13h00 lunch

14h00 Focus groups: evaluation of the portfolio and its implementation

moderators: Dana Mietzner, University of Applied Sciences Wildau, Germany; Andrea Scharnhorst, KNAW eHumanities Group, The Netherlands; Paul Wouters.

Two focus groups will evaluate the Portfolio, by analyzing example use cases presented in detail by ACUMEN. The third focus group will be dedicated to the potential barriers in implementation of the Portfolio as an evaluation instrument.

16h30 Closing address by Paul Wouters; followed by drinks.

List of participants

Isidro Aguillo	Spanish National Research Council (CSIC)- CCHS Cybermetrics Lab - ACUMEN	Spain
Judit Bar-Ilan	Bar-Ilan University (BIU) – Department of Information Science - ACUMEN	Israel
Michael Conlon	University of Florida - VIVO	United States
Vladica Cvetković	University of Belgrade	Serbia
Mathieu d'Aquin	Open University - Knowledge Media Institute (KMi)	United Kingdom
Marc de Jonge	The Netherlands Organisation for Scientific Research (NWO)	the Netherlands
Laura de Ruyter	Leiden University – Centre for Science and Technology Studies (CWTS) - ACUMEN	the Netherlands
Barbara Ebert	Leuphana University Lüneburg	Germany
Benjamin Ehrenberg	Bar-Ilan University	Israel
Brigitte Jörg	Consortia Advancing Standards in Research Administration Information (CASRAI)	United Kingdom
Simon Kerridge	University of Kent	United Kingdom
Arnis Kokorevičs	Latvian State Institute of Wood Chemistry (LKKI)	Latvia
Kayvan Kousha	University of Wolverhampton – Statistical Cybermetrics Research Group - ACUMEN	United Kingdom
Aygen Kurt-Dickson	London School of Economics	United Kingdom
Birger Larssen	University of Copenhagen - Royal School of Library and Information Science (RSLIS) - ACUMEN	Denmark
Katia Levecque	Ghent University (UGent)	Belgium
Grete Christina Lingjærde	Current Research Information System in Norway (CRISTin)	Norway
Vasile Lungu	Ministry of Education, Research and Innovation - EUREKA Project Coordinator	Romania
Katrien Maes	League of European Research Universities (LERU)	Belgium
Dana Mietzner	Technische Hochschule Wildau – Dept. Business Administration & Information Science - ACUMEN	Germany
Vallo Mulk	Estonian Research Council (ETAg)	Estonia
Ruth Müller	Lund University - Research Policy Institute	Sweden
Ülle Must	Estonian Research Council (ETAg) - ACUMEN	Estonia
Truyken Ossenblok	Centre for Research & Development Monitoring ECOOM	Belgium

Oskar Otsus	Estonian Research Council (ETAg) - ACUMEN	Estonia
Andréas Perret	Swiss Foundation for Research in Social Sciences (FORS)	Switzerland
Pekka Pesonen	Finnish Funding Agency for Technology and Innovation (TEKES)	Finland
Fleur Praal	Leiden University – Centre for Science and Technology Studies (CWTS) - ACUMEN	the Netherlands
Ismael Rafols	University of Sussex - Science and Technology Policy Research (SPRU)	United Kingdom
Matteo Razzanelli	Science Europe	Belgium
Andrea Scharnhorst	Royal Netherlands Academy of Arts and Sciences – eHumanities Group - ACUMEN	the Netherlands
Hadas Schema	Bar-Ilan University (BIU) – Department of Information Science - ACUMEN	Israel
Alberto Silvani	University of Milan	Italy
Ed Simons	EuroCRIS	the Netherlands
Gunnar Sivertsen	Nordic Institute for Studies in Innovation, Research and Education (NIFU)	Norway
Jack Spaapen	Royal Netherlands Academy of Arts and Sciences	the Netherlands
Daniel Spichtinger	European Commission - Research Project Officer	Belgium
Agnieszka Stasiakowska	COST	Belgium
Clifford Tatum	Leiden University – Centre for Science and Technology Studies (CWTS) - ACUMEN	the Netherlands
Mike Thelwall	University of Wolverhampton – Statistical Cybermetrics Research Group - ACUMEN	United Kingdom
Frank van der Most	Royal Netherlands Academy of Arts and Sciences – eHumanities Group - ACUMEN	the Netherlands
Inge van der Weijden	Leiden University – Centre for Science and Technology Studies (CWTS) - ACUMEN	the Netherlands
Jan van Steen	the Netherlands Ministry of Education, Culture & Science	the Netherlands
Susanne Weigelin-Schwiedrzik	University of Vienna	Austria
Lorna Wildgaard	University of Copenhagen - Royal School of Library and Information Science (RSLIS) - ACUMEN	Denmark
Paul Wouters	Leiden University – Centre for Science and Technology Studies (CWTS) - ACUMEN	the Netherlands
Eric Zimmerman	IDC Herzliya	Israel

Workshop Report

Plenary morning session

The papers presented in the morning session can be found online and will be attached to this report as Annexes, with exception of the keynote address by Susanne Weigelin-Schwiedrzik, which remains her own. The interactions between the plenary presentations have not been recorded, as the same issues have been discussed more in-depth in the afternoon break-away focus groups.

Focus Group A

Participants: Isidro Aguillo, Marc de Jonge, Vasile Lungu, Ruth Müller, Truyken Ossenblok, Oskar Otsus, Pekka Pesonen, Ismael Rafols, Andrea Scharnhorst (moderator) [ASch], Hadas Shema (report), Alberto Silvani [ASil], Ed Simons, Agnieszka Stasiakowska [ASta], Frank van der Most, Inge van der Weijden, Susanne Weigelin-Schwiedrzik

Summary: After evaluating the Portfolio in a use case scenario prepared by ACUMEN, this focus group provided mostly positive feedback. Participants here especially valued the Portfolio as an instrument for early-career researchers, since any researcher can already elaborate on skills and expertise when the output record is yet limited. The 'Narrative' is valued, not only because it empowers the individual researcher vis-à-vis an evaluating body, but moreover because it raises the individual's awareness of his/her unique capacities. However, the participants believe the comparison between various Portfolios will remain complicated, because of the diverse profiles that can be presented with it. It would be especially useful if the Portfolio can be developed to an online data reservoir, in which researchers submit data, output and arguments which they can then extract in varying and dynamic contexts and renderings, dependent on the use context. In any case, the expressed judgment on the value of indicators is appreciated by the evaluators.

Full report: Participants in this focus group come from a wide range of disciplines, among which physics, engineering, medical biology, molecular biology, ornithology (zoology), science policy studies, political science, and China studies. This diversity will no doubt lead to diversity in the reflections on the ACUMEN Portfolio. The participants will review Alice Ravenscroft, one of the personas constructed by the ACUMEN Consortium, with 'her' Portfolio filled out for two evaluation contexts: one for tenure, and one for a grant request.

Participants remark that the tenure position Ravenscroft would be applying for is not reflected at all in the Portfolio [ES]. This would not matter if the hiring committee is acutely aware of this, but perhaps it would be wise to include a section in the Portfolio where the Portfolio-owner can explicate the context for which the Portfolio is filled out. The lack of context makes the abundance of information in the filled-out Portfolio perhaps overwhelming for evaluators [SW]. Perhaps the instructions for evaluators and portfolio-owners should clearly explicate that some questions for some contexts can be skipped or ignored. In particular, the repetition (of publications, skills, events attended) in the Portfolio is seen as redundant. It could also help to let evaluators or portfolio-owners decide on the order in which the sub-Portfolios will be presented, as this implicitly attaches weight to them. Some participants would appreciate a larger set of example Portfolios, for the use of different contexts and in different academic disciplines.

The ACUMEN Consortium is aware of the contradictory aims to be comprehensive as well as selective at the same time, this will be discussed in the Consortium [ASch]. However, the Portfolio is ultimately envisaged as a web-service, on which the dynamic rendering of specific parts of the Portfolio will be much more natural than on paper [FM]. In various contexts, it might be desirable to attach weight to the different sub-Portfolios, but this cannot be done in general.

Given the standing practice of evaluation processes, evaluators might like to see the traditional CV as well as a letter of motivation alongside the Portfolio [SW]. Although the narrative might incorporate motivations and future plans, it will not always and in this example does not – while a traditional letter always will. However, perhaps the Portfolio will be most effective if it can replace existing instruments; not many evaluators will be enthused by the prospect of only adding a tool to the current options. From the researcher's perspective, it will always be desirable to fulfill any evaluators' wishes; the individual candidates will probably not deviate from current application/evaluation procedures independently [TO].

Others note that the Portfolio gives a thorough overall impression and understanding of the candidate, but more of skills and achievements than academic excellence in the form of publications. This focus perhaps fits an internal evaluation better than an external hiring process. Where a top-three (of publications, talks, keynotes etc.) is supplied, extra explanation on why the listed items were selected would merit understanding of the candidate's ambitions. There is a tension here, since ACUMEN on the one hand would advocate evaluators not to focus solely on academic output, because the Consortium believes in more comprehensive research evaluation; yet on the other hand, it is assumed that evaluation agencies currently perform mostly output-based analyses, for which ACUMEN then wants to provide the researcher with instruments to present himself [IR]. Perhaps these seemingly contradictory aims can be better fulfilled if indicators of excellence are added to some of the Portfolio-items: such as motivations and weights with grants received [IR, IA].

Several participants find the Portfolio most useful for early- and mid-career researchers, perhaps especially those who pursue non-standard positions or career paths [TO, SW]. Filling out the Portfolio as a preparatory exercise before any career (self-)evaluation increases awareness of ones capacities and achievements [SW, FM].

Upon request, the participants give feedback on the Academic Age calculation. Given the starting point of the academic age at the PhD-defense, there is no option to mention a grant the PhD has been based on – which might be an all-important career starter. One participant notes that she would not list time spent teaching as an activity resulting in compensation for the Academic Age; she sees this as an asset and an important skill. One participant would like to see the three most important career events listed in the Narrative, if not in a sub-Portfolio; another would like to see more explicit information about mentoring and networks the (young) researcher is embedded in.

The 'Influence' sub-Portfolio's elements are not always clear. Teaching is by some participants viewed as a tool or skill, not as a means of exerting influence [ASil]. Perhaps some information on networking and previous collaborations should be listed in this sub-Portfolio, as a researcher's ability to collaborate is important in many grant applications and projects.

In the current format, visuals and graphics are completely absent from the Portfolio. It is recommendable to include these in a web-version [TO], especially the types of visuals that could illustrate the focus a candidate gives on the different aspects of her academic career [SW]. If visuals will be included in the Portfolio, however, ACUMEN must make sure that these are constructed self-explanatory and in a standardized format, so that any and every researcher would be able to produce them in an accurate and attractive way [ASch]. This holds true as well for the automated calculation of some of the indicators listed; online tools that could be embedded are already available, but not all of those are easy to use for all researchers. Lastly, it is remarked that some attention should also be given to the general 'look and feel' of the Portfolio in the eye of the evaluator; the reading experience should be made as linear and logical as possible.

Focus Group B

Participants: Judit Bar-Ilan, Michael Conlon, Mathieu d'Aquin, Brigitte Jörg, Arnis Kokorevičs, Kayvan Kousha, Birger Larssen, Katia Levecque, Dana Mietzner (moderator), Andréas Perret, Matteo Razzanelli, Laura de Ruyter (report), Clifford Tatum, Jan van Steen, Eric Zimmerman

Summary: This focus group evaluated the Portfolio in a use case scenario with an anonymized persona. They would see value in the Portfolio if it would be rendered in dynamic modules, enabling evaluators to specify which components they would like the researchers to present in a given context. For this, a refinement of the definitions and terms in the Portfolio would be necessary, or at least an explication of an extensive thesaurus accompanying the tool. It is furthermore recommended to connect the Portfolio to existing Research Information Systems and other data sources for instance with DOIs, URIs and ISBNs, so that parts of the Portfolio are compiled automatically. This enhances the use experience for the individual researcher, and enables verification by evaluators. Participants are particularly positive on the narrative, and on the original perspective on the value of an academic career presented in the 'Influence' sub-portfolio.

Full report: This focus group aims to gather feedback on the use of the ACUMEN Portfolio in hiring decisions, explicated here in the filled-out Portfolio of (fictive) persona Peter, who is a mid-career researcher with Academic Age 10, in the field of philosophy.

Participants immediately remark that the Portfolio does not contain all information that would be present in a regular CV, or if it does, it is harder to interpret [MC, BJ]. Although the ACUMEN Consortium envisages the Portfolio as a supplement to the traditional CV [JB], participants remark that they would find this overly redundant and therefore not desirable [BJ, EZ]. They see most power in the Narrative as a free-styled equivalent of a cover letter, and the sub-Portfolios as the broader and more personalized version of a CV [EZ, MC, MA].

Evaluators would find any of the indicators and content lists (top-threes) difficult to interpret without benchmarks to aid interpretation [MR, EZ]. Moreover, contextual information on Peter's current position in his current department would help the evaluators' understanding [MC]. Ostensibly, some parts of the Portfolio have not been filled out, but the reasons for this remain unclear [AP]. This emphasizes that institutions using the Portfolio in evaluation contexts should make very clear which parts of the Portfolio they wish or need to see completed [MR]!

The ACUMEN Consortium believes that both evaluators and portfolio owners will want to omit some of the items from the Portfolio in particular use cases [CT, BL, JB]. Some participants think the evaluators should decide on inclusion and weight of the selected elements [MR]. However, others believe that evaluators would rather have the candidates supply all information and then decide for themselves to which parts they would attach most weight [MC, AP]. This is current practice in many evaluation procedures, where formal and informal indicators are obtained first and interpreted later [MR, AK]. This would give the portfolio owner the advantage of only having to complete the Portfolio once [EZ], yet on the other hand this would undermine the researcher's power to present his strongest career aspects dynamically in changing scenarios. Of course, the portfolio owner would always have the option to emphasize noteworthy career details explicitly in the Narrative [BL]. One participant remarks that he finds the criteria he considers most crucial in the Narrative, and regards the indicators only as secondary [MA].

Some strong and striking features in this example Portfolio – a grant, and experience as group leader – have not been explained well, which might have been done on purpose or accidentally [MC, BJ, AP], and a participant would also appreciate some explanation at each listing of items [MA].

For the Portfolio to become attractive for researchers, the indicators and pieces of quantitative evidence need to be connected to existing online services, such as Mendeley. Only if the Portfolio can be filled out with ease, and perhaps partly automatically, is there a strong incentive for individual researchers to prefer it over the traditional CV [EZ]. ACUMEN would wish to render the Portfolio as a web-service capable of connecting to other data sources, but is afraid this might lead to privacy concerns [JB, CT]. Participants believe that connections to external sources would improve the credibility of the provided evidence [MC].

Furthermore, participants remark that the terminology used in the Portfolio should be standardized, to prevent differing interpretations of for example 'entrepreneurship', 'methodology' and 'influence' [BJ, MC]. This could be implemented by including external definitions, for instance from CASRAI [CT].

On the Academic Age calculation, it is emphasized that contexts and policies vary between countries and cultures, and that therefore international comparison will be problematic [KL, DM, JB, MA]. Perhaps national policy can be contextualized in a separate note, provided by ACUMEN [KL], or the applicant herself [JB]. Some circumstances, such as having children before the PhD-defense or being a single parent, severely affect ones career, but cannot be included in the calculation currently [KL].

In the 'Expertise' sub-portfolio, participants would like to see administrative work separated from committees, and they would like to see quantitative indicators on these items as well, such as number of staff managed [EZ]. In the 'Output' sub-portfolio, participants would appreciate explanations on data management and the publication of data [AP, MA, MC], if possible again linked to external sources and services [BJ]. It is not completely clear how 'Influence' is defined in the Portfolio, and how that definition is different from 'impact' [BJ]. This should be explicated better in the accompanying Guidelines for use of the Portfolio [CT]. Furthermore, participants remark that: multi-authorship can be more complex than the Portfolio allows for [EZ]; third-stream income is difficult to define [MC]; downloads are not seen as a trustworthy indicator [MC, MA]; and that some items, such as lectures, can be listed either as output or as influence [BJ, CT]. In general, participants find the Portfolio most useful for early- and mid-career researchers.

Lastly, participants advise ACUMEN to consult experts on management assessments in the industry in the implementation of the Portfolio [AP, KL], as some of the criteria for hiring on key positions in the industry will likely relate to hiring decisions in academia.

Focus Group C

Participants: Vladica Cvetkovič, Barbara Ebert, Simon Kerridge, Aygen Kurt-Dickson, Grete Christina Lingjærde, Katrien Maes, Vallo Mulk, Ülke Must, Fleur Praal (report) Gunnar Sivertsen, Jack Spaapen, Mike Thelwall, Lorna Wildgaard, Paul Wouters (moderator).

Summary: This focus group emphasized on the Portfolio's technological feasibility, usability in different scenarios and applicability in the context of academic careers. The participants were positive on the notion of the Portfolio as a whole, and particularly enthused by the newly developed career visualizations. In their opinion, some portfolio elements merit further consideration and development, especially the Academic Age Calculation and the recording of influence on society. For this, the indicators now might have a slight webometric bias and an additional narrative might prove of use in the societal context. It was noted that the Portfolio is not only a potentially useful instrument for evaluators – who would need to be able to verify indicators listed! – but also for individual researchers as a strategic career tool, especially in the currently emerging Researcher Development Frameworks. Of course, the Portfolio must be transformed into a user-friendly online tool before it can be widely

applied; first and foremost, this must be sought in connections to (nationally) standardized Research Information Systems and possibly other data services.

Full report: The aim of this focus group is to identify potential pitfalls and opportunities for the introduction of the Portfolio in research evaluation contexts. The chair would like to focus on feasibility, usability and user-friendliness, and general acceptability of the Portfolio as an instrument. Of course, the Portfolio should be transformed to a web-based service included in CERIF, in which parts can be included and left out dynamically. The current word-processor format is only a prototype.

A participant (BE) remarks that a tool like the ACUMEN Portfolio seems to fill an existing demand, in enabling researchers to present themselves with an all-round profile, expressing the value of their research career beyond mere publications. The 'Narrative' especially empowers the Portfolio owner by allowing for emphasizing the aspects of his career the Portfolio owner himself deems most relevant at the given point in time [VC]. The ACUMEN Portfolio promotes the idea that information used in an evaluation process should come from the researcher under evaluation – this aligns well with the current call for equal opportunity. Even alongside the already prevalent standardized systems, the Portfolio can help further this perspective [GS]. It must be emphasized that the empowerment of the individual researcher was one of the main reasons the EU decided to support ACUMEN, so it is good to hear that the evaluators also acknowledge the value of this outlook.

Evaluators, or interviewers and hiring committees, might be looking for candidates with differing profiles depending on the occasion; in one recruiting scenario, a highly productive researcher with a formal output record can be preferred -- or an experienced teacher who engages in societal debate in another. In any evaluation scenario, though, it is vital that evaluators can verify all information in the Portfolio in connected systems and standardized protocols. One participant [BE] even envisages research teams or departments could use the Portfolio as an exercise tool, to become more aware of the variety of strengths displayed by the different team members.

Several practical issues are noted, with underlying theoretical rationales. Firstly, ACUMEN's Academic Age Calculation has partly been inspired by compensation schemes in the United Kingdom. However, participants [SK, AK] note that in the United Kingdom, these schemes aim to explain reduced *output*, not calculate reduced *time* spent creating this output. Compensations for care-taking are, moreover, not limited to raising children: dependent care is also included in most current schemes and should perhaps therefore also be in ACUMEN's. The PhD-defense is not acclaimed as the starting point of an age calculation, since it is common in some countries to schedule the defense and then rewrite the thesis, leaving considerable time between the defense and the actual obtaining of the degree. Lastly, participants call for caution on presenting the options to include disabilities and health circumstances as causes for Academic Age compensation, as this is extremely sensitive information. Many portfolio owners will not be comfortable disclosing these personal details, even if they trust in the evaluating body to keep their portfolio classified. Nobody would want these researchers to feel further pressured by the fact that the option is available in the Portfolio [SK]. In the 'Output' sub-portfolio, perhaps open data, open management plans and data repositories could also be included; as these are emergent important research structures and deserve attention [KM].

In the 'Influence' sub-portfolio, it might be difficult to express the influence of output published in multidisciplinary journals, as the Impact Factors of these journals often differ from those oriented only on one field. Researchers who publish in these multidisciplinary journals do this while considering the implications of this strategy as a balance between reach and prestige. If this is not acknowledged in the Portfolio, that might give rise to resistance from more multidisciplinary oriented fields, like the Social Sciences [AK]. Currently, the prestige of multidisciplinary research is assessed by senior peers in a field, which could be translated into a supporting testimony by higher peers to be added to the

Portfolio. Alternative mechanisms might be to include a narrative specific to this sub-portfolio, in which the researcher can contextualize his activities; or to inform evaluators on specific publication behavior in a particular discipline. Of course, the Portfolio owner might always choose to contextualize his multidisciplinary knowledge further in the 'Expertise' sub-portfolio, or in the Narrative – this will depend on the criteria set by the evaluators [BE]. However, in multidisciplinary research evaluation should always be guided by experts from the same multidisciplinary field, as the interpretation of any indicator and context will remain problematic for relative outsiders, especially in those fields where disciplines are more clearly separated, or where presenting multidisciplinary research is not generally accepted (SSH) [GS].

In the same sub-portfolio, 'societal impact' is demonstrated in the United Kingdom by noting the (societal, cultural) results brought forth by the researcher's activities, whereas the ACUMEN Portfolio now seeks to list the activities themselves [SK]. It seems that this choice, of listing the activities, is based on the assumption that the results of individual academics are transferred to society through internet. This might be a webometric bias, as in practice the internet and the media in general only generate part of the knowledge transfer: much more societal impact is generated through the transfer of materials, procedures, staff etcetera. This is not necessarily traceable to the individual academic, especially in (STM) fields where direct communication between researchers and society is scarce. In these cases, it might not make sense to assess societal impact in an individual researcher's Portfolio at all [GS]. For this reason, societal impact is usually demonstrated on an institutional level as well in the United Kingdom, in case studies submitted by research groups or even cooperating institutions [SK]. The participants therefore advise ACUMEN to critically review the indicators currently chosen to denote societal impact for instance against the League of European Research Universities' practices (LERU) and the United Kingdom's Research Evaluation Framework (REF), although the differences between evaluation systems for individuals and institutions should be kept in mind.

Participants wonder about ACUMEN's recommendation to mostly use the Portfolio for candidates within one discipline, since it is hard to define disciplines in most academic fields [SK, JS]. Of course, this recommendation is most useful if the Portfolio will be used to compare candidates' fit in a well-defined recruitment profile. If researchers would be compared across disciplines, the wide range of Portfolios will undoubtedly express the diversity of academics – contrary to current research information systems that converge towards homogeneity. Of course, the inter-comparability of such a wide range of Portfolios would then be more limited. Participants [JS, GS, PW] agree that the aggregation level will always be vital, as it currently is in all evaluation contexts, too.

Participants consider the incorporation of the ACUMEN Portfolio in national research information systems as crucial, for usability by both Portfolio owners (researchers) and evaluators. From the perspective of the individual researcher, integration with currently existing Research Information Systems (RISs) is undoubtedly preferred. Not only would they then not have to enter information more than once, they would also not have to get acquainted with yet another system [GL]. In an integrated environment, some Portfolio indicators could be generated automatically, and moreover, the home institution might provide a learning environment for Portfolio owners [GS]. Of course, such integration would work best in countries or regions where institutions share an RIS and/or aggregate research data in central databases, such as Norway, Denmark, Finland, or Flanders. Given the fact that not all countries employ uniform RISs, and given the fact that the Portfolio should be implemented internationally, it must be connected to multiple RISs [BE, PW].

It might be an issue that some indicators in the Portfolio should be obtained from external (commercial) sources. Some of these give unstable results, like Google Scholar. Others, such as Mendeley and ResearchGate, currently operate as largely separate silos with commercially exploited APIs with which connections have not been widely established yet, more due to politics than

technology [BE]. Alternatively, connections might be made based on the researcher ID, enabling an institution to link data along the lines of the ORCID-model [SK].

It would be very useful, participants note, to connect the Portfolio to career development modules currently already in place at institutions, especially for junior researchers. In the United Kingdom, for instance, there is the Research Development Framework, with the aid of which PhDs get insights in the skills they may need to acquire, such as committee work, leadership, etcetera). It is noted that the ACUMEN Portfolio fits well into this competence-oriented career discourse that now is gaining importance and visibility; integration into existing structures might help researchers and gain ACUMEN the traction and legitimacy needed to further the project [KM]. Supervisors of junior researchers might also be interested in tools of this kind [SK]. The European Commission is also interested in tools for career strategies on an individual and institutional level [KM].

It is interesting that the emerging focus on career development on an individual level points at a changing perspective on an institutional level as well, broadening from inherently retrospect evaluation to more 'forward'-looking strategic policies, such as the Dutch *Topsectorenbeleid* [JS]. Universities and other research institutions change their perspective because funding is increasingly distributed along these new lines – and ACUMEN fits well here. It is also noted in this context that researchers themselves become more strategically aware of their career position; as is illustrated by memberships of learned societies that are now increasingly valued for their network opportunities rather than prestige [JS, GS]. Perhaps this 'forward' perspective could be included in the Portfolio by asking for an individual research plan; this is however not so useful if the portfolio is used for self-evaluation [VC].

Despite the usefulness of the Portfolio as a tool for self-evaluation or career development, it was not developed as an instrument for career advertisement, and does not cater for any careers outside academia. Perhaps this should be made explicitly clear [BE].

Furthermore, the advice on the use of all the indicators in the Portfolio is very advanced – but it might be very difficult to disseminate the best-use guidelines among Portfolio owners systemically [GS]. It will also help to extend the thesaurus of bibliometric terminology and jargon from the evaluation context used in the Portfolio [KM], if possible in multiple languages [SK]. Individuals might learn how to correctly use a few indicators, but then different Portfolios might not be comparable [VC]. Therefore, evaluators might prefer to calculate indicators for all candidates under review: this is a more cumbersome, but also more accurate process [GS].

In a wider context, participants emphasize that it will be important to try and get ACUMEN supported as a standard tool by the European Union; usually, dissemination of a tool accelerates after adaptation by funding bodies [SK]. ACUMEN has plans to do so in the immediate future.

Participants advise ACUMEN to not immediately publish the Portfolio openly as a tool for individuals, but to seek structured implementation and connections with existing data services and frameworks. Pilot studies at specific institutions and RISs will, if successful, further the cause and generate the necessary traction [GS]. For instance the Wellcome Trust would probably be inclined to cooperate in such a pilot. VITAE is currently developing a Research Development Framework, for early-career researchers' advice and would therefore perhaps also be an interesting partner [AK]. Lastly, the participants are especially enthused on the recent developments of career visualization tools [BE].