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Panel Report ECIS 2012: Publication Strategy for Junior Researchers: Quantity vs. Quality, Importance of the First Authorship and Collaboration

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Abstract:

The publication record is a key component of a successful academic career in IS. Despite its importance, its definition—especially for junior researchers—remains unclear. Is it better to have one A-publication or three B-publications? Does being the third author on an A-publication carry more weight than being the first author on a B-publication? Is it better to publish with as few co-authors as possible to demonstrate ability for independent work or is publishing with others a sign of good teamwork and academic excellence? Faced with these uncertainties, young researchers increasingly question the choices they make regarding their publication strategy. If unaddressed, these issues are bound to interfere with the quality of the IS research and scholars' job satisfaction. This article raises these concerns associated with a publication strategy for junior researchers and reports the views voiced by five academics at a panel session at the European Conference on Information Systems 2012. In particular, the following topics are discussed: quantity vs. quality, value of the first authorship, the "optimal" number of authors, and the issues of co-authorship with an academic supervisor.

Keywords: publication strategy, first authorship, junior researchers, research quality; publication trade-offs

Editor's Note: The article is based on a panel presentation at the European Conference on Information Systems, held in Barcelona, June 2012.

Panel Report ECIS 201 2: Publication Strategy for Junior Researchers: Quantity vs. Quality, Importance of the First Authorship and Collaboration

I. INTRODUCTION

A number of important components contribute to the successful academic career in Information Systems (IS). These include a record of publications, teaching and industry experience, research grants, professional service, media appearances, and international collaboration, just to name a few. Among them, however, it is the *publication list* that has been consistently recognized as the most important selection criteria [Floyd, Schroeder, and Finn, 1994]. Especially for junior researchers—PhD students, post-doctoral fellows, untenured assistant and junior professors—a sound publication record is the key to getting a professorship position, tenure, and promotion [Dean, Lowry, and Humpherys, 2011; Dennis, Valacich, Fuller, and Schneider, 2006; Valacich, Fuller, Schneider, and Dennis, 2006]. Indeed, providing evidence of the research potential and future performance, a publication record is a required part of any academic job application [Dean et al., 2011].

Despite its importance, the definition of a "good publication record," especially for this vulnerable group, remains unclear. Indeed, is it better to have one A-publication or three B-publications? Is being the third author on an A-publication more valuable than being the first author on a B-publication? Should one strive to publish with as few authors as possible to demonstrate that one is capable of independent work, or collaborate to gain from the experience of other co-researchers? The answers to these questions are far from straightforward. Facing significant time constraints and growing competition, young researchers are increasingly questioning the choices they make with regard to their publication strategy. Equally, academic mentors have a strong interest in giving the correct guidance to their young protégés to help them pave a way to a successful future in academia. Left unaddressed, ambiguity surrounding these important issues is bound to interfere with junior scholars' job and life satisfaction, the quality of the IS research, and ultimately the future of IS as a scientific community.

A recent panel at the European Conference on Information Systems (ECIS) 2012 offered a forum for discussion and clarification on these problematic issues [Krasnova et al., 2012b]. The sections below describe the composition of the panel and summarize the points made by the panelists regarding quantity vs. quality, value of the first authorship, optimal number of authors, and co-authorship with an academic supervisor. The article ends by making recommendations about publication strategy for the IS field as a whole.

II. ORGANIZATION OF THE PANEL

The panel was organized by Hanna Krasnova and Kerstin Schäfer and was presented at the European Conference on Information Systems in Barcelona in June 2012. The panel was introduced and moderated by Hanna Krasnova. The presenters were Ola Henfridsson, Natasha Veltri, Cindy Riemenschneider, Edgar A. Whitley, and Peter Trkman. Natasha and Peter presented the views of more junior faculty, while Ola, Cindy, and Edgar presented the views of more experienced academics. The following issues were addressed by the panelists, and their comments are summarized below.

Quantity vs. Quality

Quality of a publication—often reflected in the level of journal it was published in—is frequently used as a measure of academic excellence. For example, to warrant a publication of behavioral IS research in a top level A-journal, authors are expected to come up with an original breakthrough idea, collect a large representative sample, and apply rigorous methodology to evaluate the results. Additionally, significance of the theoretical contribution and practical relevance of findings are considered when the decision on acceptance or rejection is made. Considering this high level of demands, it is no wonder that candidates with outstanding publication records in these journals are likely to be respected by the community and rewarded in terms of better employment outcomes. On the downside, strict requirements for rigor and relevance, as well as strong competition, often turn submissions to A-journals into a time-consuming and risky endeavor, in which chances of "winning" are slim. Indeed, as the manuscript progresses through the review process, is rejected, or, in a best-case scenario, receives a "major revisions" decision, the originality of idea may wane, the topic may lose its appeal, and some of the studied functionality may sink into oblivion, making the study out-of-date. In addition, competitors may be quick to pick up on the idea and publish it in a less rigorous outlet.

Given these prospects, young researchers may perceive aiming for A-level journals as a luxury they simply cannot afford. At the same time, lower B- and C-level journals, as well as popular IS conferences, may place fewer restrictions on data, fewer demands on theory and practice contributions, and, as a result, offer speedier publication

channels. As these submissions require less effort, researchers may expect to publish more of them in a given time frame. This suggests that *quantity of publications* appears to be important too, leading to much uncertainty for young researchers as to the publication strategy they should adopt. Indeed, under current circumstances, even a simple choice between striving for an A-publication vs. authoring two B-publications is genuinely complex.

To address these issues, five scholars on our panel (see Krasnova et al., 2012b) were asked to express their opinion on the following issues: Are a few "better quality" publications always preferable over a higher number of "lower quality" publications? Does a candidate with one A-publication have better chances than a candidate with three B-publications? To what extent should academic advisors encourage publication in non-top-tier outlets? Table 1 presents views of the panelists on these vital trade-offs.

Table 1: Opinions of Panelists—Quality vs. Quantity	
Panelist	Opinion
Edgar Whitley	For junior researchers, a significant part of this problem arises because their mind-reading skills are not as developed as they should be. That is, they are trying to make sense of the requirements that they will face in their own or other institutions and these requirements have either never been formalized or, more commonly, are not communicated to them. Thus, some institutions may be seeking only faculty with a strong record of A publications, while others may seek to hire faculty with a good record of B publications. Without clarity about which requirements will apply to them, it is unsurprising that junior researchers struggle between conflicting (perceived) requirements. It is important, therefore, for hiring departments to be clear about the publication profile they require of new faculty.
	Many junior researchers will also discover that it is not just publications that count, but that many institutions also require a good teaching record and administrative experience. Again, the key is for the institution to be clear about the essential and desirable characteristics it is looking for in candidates.
Natasha Veltri	I think it is best to maintain a balance of quality and quantity in the research output. Any top-tier publication is an accomplishment that brings superior recognition to the author. However, the publication cycle could be extremely long at the top-tier outlets. At the same time, only one, no matter how great, publication will probably not be enough, and several other publications will be required. Thus, regardless of the career stage, it is important to keep in the pipeline a steady stream of various research projects that could be targeted at different levels of publication outlets. This approach allows dedicating time to develop a high-quality publication while also working on several smaller projects that could be finished and published sooner.
	The quality vs. quantity issue also depends on the requirements and type of the institution. Requirements for tenure and promotion differ considerably across universities, and any young researcher should be cognizant of the expectations at his or her workplace. Working at a teaching institution where pedagogical research is encouraged, I have had several opportunities to work on IS curriculum and IS education related projects. While this work may not have top-tier potential from the start, it is still relevant and intellectually stimulating. It also aligns well with the teaching mission of my institution.
	Overall, I think it is best to maintain a steady pipeline of various projects, focus on finding the best possible outlets for them, and recognize that different projects lend themselves to publication in different outlets.
Ola Henfridsson	A successful career typically reflects a desire to develop new and interesting lines of thinking and doing. In my view, pursuing an A-level publication strategy is an excellent way to nurture such desires, as your emerging ideas will be evaluated by peers with the ambition to help you shape your thinking through high-quality reviewing. Eventually, the learning gained will help you become a more productive researcher too.
	In many cases, and increasingly so, I believe that a candidate with one A-journal publication stands a better chance than a candidate with three B-journals. After all, someone who has published in an A-journal clearly has the capacity to publish in B-journals. However, the other way around is not necessarily true; someone who has published three times in B-journals has not demonstrated the capacity to publish in an A-journal.
	Some people argue that new topics are better off in lower-ranked journals, since the turn-around time sometimes is shorter, making the research consumable at an earlier stage. I won't argue against this. However, it might be worth noting that new ideas that get published in A-journals have a much greater chance to make a large impact.

Table 1: Opinions of Panelists—Quality vs. Quantity – Continued	
Cindy Riemenschneider	The publications of an individual should be considered as an entire package. A publication in an A journal may take as long as five to six years. If a junior faculty member is putting all of his/her effort into this potential A publication over the first five years of his/her career, this may not be viewed favorably by the promotion and tenure (P&T) committee. Therefore, I recommend having some publications in B journals at the same time one is working toward that A publication. The B publications show productivity while working to achieve the A publication.
	The junior faculty member should also be aware of what journals his/her particular university values. *MIS Quarterly* and *ISR* have consistently been the premiere journals at each university where I have been employed. However, in my experience, the other journals and the position on the list vary greatly between universities.
	Another important consideration for a junior faculty member is the managing of his/her research pipeline. It is very important to have projects at each stage of the pipeline, including project inception and data collection, data analysis, as well as several papers in final form and multiple stages at varying journals.
Peter Trkman	We, as researchers, are in a unique position (well, at least after we get tenure) to choose what we will research and at what level. I am personally interested in many different things and work on diverse topics, not only in Information Systems but also in Supply Chain Management. This means I am able to publish many papers in good A-journals, but not really in A+ like MISQ or ISR. Luckily, also the evaluation system at my University and also Research agency of Slovenia is heavily in favor of my strategy.
	A wide array of papers on various topics is excellent for an important reason that is too often neglected: the impact of our research on the quality of our teaching. At my school I teach two general courses, namely Introduction to IS and E-business. Having a wide array of interests means that I can cover a wide array of teaching topics on a very high level and use the knowledge gained from research to improve my teaching.
	Publication in a B level journal is sensible at a certain career stage (e.g., to get the first publication quickly) and also for certain papers (e.g., an outcome of a consulting project that is interesting but not rigorous enough for an A-level journal). Of course, publishing in C- or D-level journals is a waste of resources. I say to our Ph.D. students: if the goal of your work is to publish in such a journal, rather spend more time with your family or start to play tennis.
	To summarize: Do not worry too much, try to find out what is fun to you!

The Value of the First Authorship

Especially for the "data"-driven sciences, like IS, collaboration among researches is associated with numerous benefits [Over and Smallman, 1973; Bukvova, 2010]. Nonetheless, many research teams experience tensions and find themselves torn by competition, antagonism, and resentment when working together [Erlen, Smirnoff, Sereika, and Sutton, 1997; Wray, 2006]. The perceived value of being the first author is often at the root of these conflicts [Floyd et al., 1994]. For example, over 30 percent of survey respondents in the study by Krasnova, Kummer, Schäfer, and Veltri [2012a, p. 10] reported to have at least sometimes experienced tension with other co-authors regarding "*who will be the first author."* Conflicts over the first authorship have good reasons. Even in situations where author names are expressly ordered alphabetically, Einav and Yariv [2006] find a positive correlation between surname initials (the earlier in the alphabet the better) and tenure at highly ranked schools. Indeed, being the first author on a publication leads to a higher recognition and credit, which over time may lead to better chances of getting research grants, employment, merit-based salary raises, promotion, and tenure [Erlen et al., 1997; Krasnova et al. 2012a, 2012b]. Signaling the importance of being the first author, some universities routinely apply differential weighting schemes for authorship when assessing the candidates for employment [Moore and Griffin, 2006]. Study results of Krasnova et al. [2012a, p. 7] indicate that 47.6 percent of IS researchers slightly or more agree that a particular publication helps to improve their career prospects *only* when they are listed as the first author. Moreover, a dilemma over quality vs. quantity becomes exponentially more complex when the place of the author's name gets factored in.

During the panel, opinions on the following issues were debated (see Krasnova et al., 2012b): What value is placed on being the first author? What share of work should be fairly invested to warrant being the first/second/third/fourth author? Should a forced alphabetical ordering be used? How can academic advisors facilitate cooperation among "competitors"? Table 2 provides the summary of the expressed opinions regarding these problematic areas.

Table 2: Opinions of Panelists—The Value of the First Authorship	
Panelist	Opinion
Edgar Whitley	The question of first author again reveals a series of issues that are frequently not made explicit. In some cases, alphabetical ordering of author names is the norm, in others, the first author is the one who "led" the project or did the most work and should be credited accordingly. Fights over first authorship would appear, therefore, to be about who should receive the major credit for the piece of work and institutions are increasingly recognizing that name order does not necessarily help clarify this issue. For example, the guidance offered at London School of Economics [LSE, 2012–2013, p. 30] states that: *"The Promotions Committee recognises that co-authorship is the norm for some disciplines and where this is the case, jointly authored work will be considered of equal standing. However, the Committee has found statements concerning joint authored work to be somewhat ambiguous. In some disciplines it is now commonplace to record contributions to joint work in percentage terms. Candidates are required to provide a numerical indication in percentage terms of their contribution(s) to joint work on the CV, alongside the requirement to state the respective contributions of co-authors in regard to the initiation, conduct and direction of the work. Candidates should also provide details of the degree of intellectual contribution made to the work (e.g. indicating their involvement in the formulation of key themes, concepts and theories).*" Sorting out who is going to be first author on a paper is best clarified and explicitly discussed at the start of research collaboration. Below is the document I share with potential collaborators: Policy on order of author names *Rationale* As someone whose name comes toward the end of the alphabet, I am not happy with the convention of alphabetic ordering of names. The reason for this arises from the way articles are cited in the text and, hence, whose names are used to remember the particular ideas in the article. If there are three or more authors, then only the first author's name is noted in the text (e.g., Author 1 et al., YEAR). If there are two authors, then both names are used, but again there is a tendency for the first author to be remembered (e.g., Author 1 and Author 2, YEAR). *Types of involvement* *Supervisory role* For example, MSc or PhD students, based on their texts. Here I am happy to appear at the end of the list. If the student is jointly supervised, then the rotation principles below apply. *Lead role* For example, if I chose to analyze a student's existing material in a different way. In this instance, I would be the lead author with the student's name coming afterwards. *Joint role* For example, joint collaborative work with other authors. In this case the ordering of names would rotate. The sequence would be initiated in alphabetical order and would then rotate uniformly. The initial element in the sequence is the first article submitted after October 1, 1999. The sequence is based on the date of submission. This process carries with it the hope that I would collaborate with the author on an ongoing basis. *Collaborative role* For example, joint collaboration with other authors, where my involvement is in refining ideas, providing new stories, etc. In this case the other authors would be listed first (as they had the major contribution). It is hoped that this would lead to a continuing collaboration, which might evolve into a joint role situation.
Natasha Veltri	Clearly, the first authorship is highly desirable, but at the same time it is not possible to be the first author on all publications. I enjoy working with colleagues and appreciate being asked to collaborate on a project. In such cases, the first author usually takes the lead on the project. Equally, I expect to be the first author on any publication where I have taken the lead with the idea and workload. A successful collaboration could lead to new projects in the future where the leadership roles may reverse while continuing to build on the synergies of the research team. While I do not have a written policy on authorship like Edgar does, I think it is important to discuss the order of authors at the outset of any project. This manages expectations, delineates responsibilities, and prevents problems and ill feelings in the end. For obvious reasons, I am not a fan of forced alphabetical ordering and believe in contribution-based ordering of author names.

Table 2: Opinions of Panelists—The Value of the First Authorship – Continued	
Ola Henfridsson	As mentioned by Edgar, being the first author can be important to become recognized for particular ideas in the article. There is certainly a tendency that only the first author is remembered. A useful example of this tendency is Hevner, March, Park, and Ram's [2004] modern classic about design science research. Although Salvatore March, Jinsoo Park, and Sudha Ram are co-authors, my feeling is that they have not received nearly as much attention as the first author, Alan Hevner, for this important article.
	So, what does it take to become the first author? Oftentimes, this issue becomes a question of work share only. The amount of work put in is important. However, at the end of the day, the intellectual contribution makes a paper what it is.
	Determining the combination of intellectual contribution and work put in is, of course, difficult. There is no silver bullet. One advice is to negotiate authorship before getting too far into the collaboration. It might need to be renegotiated later on, but it provides an early indication to members of the author team what is expected from them.
Cindy Riemenschneider	The most productive and successful projects I have worked on have been where we plan multiple papers/publications at the onset of the project with each researcher having the opportunity to serve as first author on a paper. The other author names are rotated through the order according to how much she/he contributes beyond what the first author does with the one doing the most work appearing second.
	I have also found it to be the wisest approach to discuss order of authorship at the inception of a research project whether the project is done with colleagues or doctoral students. This minimizes potential conflict with co-authors.
	The drawback to alphabetical listings is that "Riemenschneider" is close to the end of the alphabet. Another drawback to alphabetical order when the author has a name late in the alphabet and most citations use the accepted approach in the text after the initial listing of all others when papers are cited with first author name and "et al.," only the first author is recognized.
Peter Trkman	Ola's example on Hevner et al. [2004] is excellent. To be honest, I would be unable to even name the other three authors of that paper. So, if I put most of the effort in the paper I put myself in the first place. As Cindy commented Riemenschneider is close to the end of the alphabet, but Trkman is even closer.
	Of course, often I prefer not to be the first author. I am really grateful to Hanna for all the work she invested in the ECIS panel and this particular paper. She fully deserves to be listed first. Without her this paper would not happen at all.
	In terms of promotion and tenure: our faculty rules explicitly state that all authors are considered equal.
	Talking about percentages of effort is hard anyway. An interesting research would be to ask each of the co-authors of one paper how much he believes his contribution was in percent. I bet that the sum of the perceived contributions would be well over 100 percent, as we tend to underestimate the contribution of others.

The "Optimal" Number of Authors

Research in the IS discipline is collaborative in nature. Past research links interpersonal collaboration to improved *research quality* as a result of capitalization on the diversity of perspectives, gains in productivity, and elevated team spirit (e.g., Moore and Griffin, 2006; Heinze and Kuhlmann, 2008; Beaver, 2001; Bukvova, 2010). Nonetheless, adding more authors to the team is not always welcomed. Possible reasons include expected increase in coordination costs and the lack of clarity with regard to the attribution of credit among participating co-authors [Krasnova et al., 2012a; Bukvova, 2010]. Indeed, whether or not adding an extra author diminishes the perceived contribution of other authors in the eyes of a hiring or promotion committee remains unclear [Krasnova et al., 2012b]. While the experience and knowledge of an additional author may improve the overall quality of the research paper—the ultimate goal scientists are assumed to pursue—the usage of the formula, penalizing for multiple co-authorship, when evaluating the publication list of a junior researcher is not rare (e.g., Freie Universität, 2011). Moreover, numerous examination policies explicitly demand junior researchers to come up with a single-author publication as a requirement for the next career step (e.g., Freie Universität, 2011; Goethe Universität, 2011).

Against this background, the following issues were discussed during the panel (see Krasnova et al., 2012b): Are additional authors a detriment or an enrichment? Is it better to publish with as few co-authors as possible to

demonstrate ability for independent work, or is publishing with others a sign of good teamwork and academic excellence? Does an additional author "water down" the credit of other authors? Should academic mentors and promotion committees encourage solo-authored papers? Is the formula "penalizing" authors for collaboration fair? Opinions expressed by the panelists regarding this set of issues are summarized in Table 3.

Table 3: Opinions of Panelists—The "Optimal" Number of Authors	
Panelist	Opinion
Edgar Whitley	As the seventh author on the panel proposal and paper, I took heart in the findings of the survey that found that first authors are expected to do 60 percent of the work on a three-author paper, with the third author contributing only 15 percent [Krasnova et al., 2012a]. By this reckoning, the seventh author has very little to do at all. As noted above, co-authors have an important role to play in developing a strong paper. This might be by having the original ideas, by bringing in alternative data sets, by facilitating the data collection and/or analysis or by bringing in experience in what makes a successful paper.
Natasha Veltri	I prefer working on research projects with colleagues and think that collaboration leads to better quality outcomes. However, I find that two to three authors is usually optimal as contribution of any larger group becomes marginal, while coordination and waiting costs increase. I think a solo-authored paper demonstrates utmost commitment and ability to produce a finished research product independently. I am still working on seeing my solo piece to publication and hope it will bring a great sense of personal accomplishment. Even though it was not a T&P requirement, it was always much recommended and encouraged by my mentors.
Ola Henfridsson	The learning gained in the process behind the first major hit in an A-journal will pay off tremendously in the future publication record. Collaboration is an increasingly necessary element in becoming successful. Being too strategic about authorship may jeopardize fruitful collaboration and strike back in the form of missed opportunities.
Cindy Riemenschneider	Additional authors can be an enrichment if they bring some skill or experience to the research project that facilitates and enhances the chance of publication. I have included additional authors when they have expertise above and beyond the knowledge, skills, and abilities of the existing collaborators. The encouragement of solo authorship depends on what the criterion are for getting tenure and promotion at the school of the junior faculty member.
Peter Trkman	Working alone on the paper is boring. After all, who will push you to do the work when you are lazy or busy with other things? With whom will you discuss the way forward when you are stuck? And most importantly, with whom will you celebrate after acceptance? For example, I am a sole author of just one of my papers. This is also my most-cited paper, but this is probably merely a coincidence. In my experience the optimal number is between two and three, maximum four. Adding more will either cause people to free-ride or, if all actively contribute, to an overflow of ideas. The only exception is when the work is more "a sum of parts" than a joint effort. My paper in *Business Process Management Journal* had twelve authors—but this was a similar survey repeated in five countries. All of the rest had four authors or less.

Paper Co-authoring and the Contribution of the Academic Supervisor

The following question was raised by the audience and thoroughly discussed by all participants of the panel: "How much should an academic advisor contribute to justify being on the paper of his or her student?" Answers of the panelists to these questions are summarized in Table 4.

III. RECOMMENDATIONS

This panel included three senior scholars and two junior professors from Europe and the United States who presented their viewpoints and experiences in academia in these two geographic areas. The composition of the panel allowed a variety of perspectives to be shared, from those who have served on multiple editorial boards of prestigious journals to the more junior faculty who are in the early stages of their career. The panel was an open dialogue between panelists and the audience regarding such burning issues as trade-offs of quality vs. quantity, a pronounced emphasis on first authorship by numerous junior researchers and promotional committees, as well as issues related to the choice of co-authors. Additionally, questions regarding the role of the academic supervisor have been raised by the audience and debated by the panelists. Panelists' opinions on the issues were quite similar, with most advocating a balanced approach with a focus on quality and collaboration. The following list of useful and actionable recommendations emerged from the panel discussion.

Table 4: Opinions of Panelists—Paper Authoring with Academic Supervisor	
Panelist	Opinion
Edgar Whitley	As noted above, I have specific guidance on when I should be listed as a co-author and I also operate in an institution where any co-authorship that is used for promotion purposes would need to be justified in terms of percentage of contribution to the paper, and so I would need to be able to offer more than just "I was this student's supervisor." A paper where I only provided the benefits of my experience of what makes a successful paper may well not lead to me being a co-author and certainly would not be used as part of a promotion case. One other issue to be aware of is the case of the PhD student adding the supervisor to what might be a very weak paper, without obtaining the consent of the supervisor. In such cases, the supervisor may well not want to be named on the paper.
Ola Henfridsson	In my view, there should be substantive contribution to the paper to justify co-authorship. For instance, reading and giving feedback on the paper is not enough to be listed as an author. This is rather a natural element in any supervisor-student relationship.
Peter Trkman	Just the fact that somebody is an advisor to the student does not justify his appearance on the paper. That said, if an advisor does not contribute, why is he or she an advisor to the thesis at all? I expect to be involved in the work of my PhD student, to make significant intellectual contributions throughout his or her work, and thus appear as a co-author. If the student does not think I can contribute, of course, no hard feelings: find another supervisor who can add more. Of course, this does not preclude the student from being involved in other projects without my contribution. My most motivated PhD student works on several other research project with other professors from various universities; most of these efforts are not related to either his thesis or to my main research themes. Of course, I do not expect to be listed on those papers. I do offer some minor help like reviewing the paper before submission. Furthermore, some funding organizations (like the European Research Council) specifically ask for "*at least one important publication without the participation of their PhD supervisor*" in order to demonstrate "*the potential for research independence and evidence of maturity*" [ERC, 2012, p. 10].

Recommendation 1: Understand Career Requirements

- As a junior researcher, make sure that you understand the publication requirements of your home and targeted institution(s).

- As a mentor, communicate publication requirements early on to junior researchers working under your supervision and develop incentives that resonate well with these requirements. In case of significant intercultural or institutional differences, rely on internationally accepted rankings and/or those recommended by AIS [2011].

Publication requirements can deviate greatly from institution to institution and from country to country. For example, while publications in conference proceedings are rarely taken into consideration when evaluating candidates for recruitment, tenure, or promotion in the U.S. academic system, a well-accepted German ranking equates a publication in the *Proceedings of the International Conference on Information Systems (ICIS)* with an A-journal, such as *Journal of Management Information Systems* and even *MIS Quarterly*. Furthermore, having a paper accepted to the *European Conference on Information Systems (ECIS)* is held equivalent to a B-journal, such as, for example, *Journal of Information Technology* [VHB-JOURQUAL, 2011]. In fact, the rating of an *ECIS* publication even exceeds the rating of a publication in the *European Journal of Information Systems*, which is ranked as a C-journal in VHB-JOURQUAL [2011] rating system. At the same time, all the above-mentioned journals are considered to be "elite" outlets for the IS community and are included in the *Senior Scholars' Basket of Journals* [AIS, 2011]. In view of these incentives, it comes as no surprise that *ECIS* has experienced a stunning surge in submissions from Germany since this ranking was introduced [Galliers, Oja, and Whitley, 2012, p. 8]. Given this diversity in the recognition of publication outlets, junior scholars are urged to closely examine expectations and requirements necessary for her/his career path.

Recommendation 2: Negotiate Authorship Beforehand

- As a junior researcher, negotiate and communicate authorship before the initial work on a project that will lead to a joint publication. Agree on the expected contributions from each author to avoid disappointment and problematic collaboration.

- As a mentor, create a climate of collaboration and transparency. Have discussions with mentees about the expected contributions of each author and associated consequences for author order if that is seen to be important.

Tensions surrounding authorship and assignment of credit for a research publication can endanger and even destroy research collaborations [Krasnova et al., 2012a]. Miscommunication in this area is often at the heart of these conflicts. This may be traced to different expectations among authors with regard to both their own contribution and the contribution of co-authors—possibly an outcome of past experience, traditions at a home institution, academic upbringing, and even the personality of a researcher. To secure a long-term mutually beneficial cooperation, communication to assign clear roles and delineate expected contribution of each author is the key. For example, having reviewed an impressive set of authorship guidelines published by professional scientific associations and societies, Osborne and Holland [2009, p. 6] state that authorship implies "*playing a fundamental role in the creation of the product to be published.*" This is in line with the Code of Research Conduct provided by AIS [2013], which advocates authorship as a "*recognition of substantive contribution to the research.*" Other kinds of involvement, including "*administrative relationship, acquisition of funding, collection of data, or general supervision of a research group,*" do not provide sufficient grounds for authorship [Washington University in St. Louis, 2009]. While these definitions may seem relatively straightforward at first glance, a lot of issues with regard to authorship still fall into a grey area and are open for interpretation and discussion [Strange, 2008]. For example, AIS [2013] Code of Research Conduct rejects an authorship claim when only data collection efforts have been undertaken by a research assistant. At the same time, Osborne and Holland [2009, p. 7] warn against using students as "*cheap labor.*" Considering these intricacies, the role of a mentor emerges as pivotal in ensuring a fair and equitable approach to authorship. Specially, academic supervisors are expected to promote transparency of authorship claim, by setting benchmarks for a share of contribution required, as well as promoting openness with regard to individual input to research papers by authors working in his or her team.

Recommendation 3: Determine Authorship Order Based on Contribution

- As a junior researcher, give the first authorship to the author who deserves it. In cases where contribution is more equally distributed, use authorship rotation when possible. Consider requesting a statement about the contribution from co-authors at the time the paper is finally accepted, since this information can be required when applying for professorship positions in some institutions.

- As a mentor, use your experience and judgment to ensure fairness in authorship attribution where the intellectual contribution should be prioritized. In addition, if you are involved in setting the requirements for appointments and promotions, you might propose addressing the ambiguity about authors' contribution by requesting a statement about the share of contribution of each participating co-author when assessing a publication record of a candidate.

It is hard to gauge the contribution of authors to the paper, with researchers at times overestimating their own contribution and underestimating the contribution of others [Ilakovac, Fister, Marusic, and Marusic, 2007]. As a result, conflicts and tensions around assignment of credit and first authorship are likely to arise, poisoning research climate and undermining teamwork [Krasnova et al., 2012a; Floyd et al., 1994]. In this case, rotation of the authors' order can be a viable solution to balance the situation and pave the way to a long-term successful collaboration (but, of course, this strategy will not work in situations where alphabetical ordering of authors is the norm). In this regard, the policy on authorship shared by Professor Whitley could be useful to both junior and senior researchers struggling to ensure that their contribution is adequately rewarded through the ordering of author names.

Recommendation 4: Prioritize Quality Over First Authorship

- As a junior researcher, if possible and appropriate, seek to take on a leading role to earn the first authorship position and contribute fairly when others take the lead. Do not let personal ambition to be the first author override research interest and quality. Always value intellectual contribution over social rank considerations.

- As a mentor, cultivate a research environment in which research quality is prioritized.

Emphasis placed on the *first authorship* goes hand in hand with issues of underperformance by the second, third, and other co-authors [Krasnova et al., 2012a]. Indeed, research by Krasnova et al. [2012a, p. 10] clearly shows that first authors over perform, typically investing on average 60 percent (median) of efforts into a three-author paper (mean = 57.3 percent, SD = 16.8 percent). The contribution share of the second author is clearly lower, amounting to a median of 30 percent (mean = 26.4 percent, SD = 10.8 percent). The third author typically contributes only 15 percent to the paper (mean = 16.5 percent, SD = 10.5 percent). Taken to the extreme, non-first authors may put the minimum amount of effort necessary to "lock-in" their authorship on the paper, leaving the lion's share of work to the first author. As a result of these misaligned incentives, the overall quality of research is likely to suffer [Moore and

Griffin, 2006]. The panel discussion suggested that while the first authorship can be used as an instrument by junior researchers to signal their competence in a certain area and get rewarded for the efforts taken to write the paper, a wide-spread obsession with *always* being first in not only undesirable, but is highly detrimental. In this regard, it is advisable to prioritize *research quality* as opposed to the *authorship rank*. On the other hand, evaluation/promotion committees should fairly value the contribution of other non-first co-authors, since these efforts are indicative of collaboration and mutual exchange. Nonetheless, numerous researchers in the sample of Krasnova et al. [2012a] report that the communication regarding the value placed on the first authorship and the credit assigned to non-first authors is highly ambiguous, which leads many young researchers to make suboptimal choices when faced with such publication trade-offs.

Recommendation 5: Collaborate

- As a junior researcher, seek to leverage your expertise in every collaborative research project in which you engage. Avoid joining research papers "for the sake of a publication." When working as a "non-first" author, "over perform" if you want to secure a fine reputation and ensure further collaboration requests.[1]

- As a mentor, nurture working collaborative relationships. Do not penalize authors for collaboration—reward it.

Even though collaboration plays a critical role in the data-driven sciences like IS, policies penalizing authors for multiple co-authorship and rewarding single authorship are not rare. By and large, these policies are detrimental to the free flow of ideas and research exchange—a backbone of progress in the IS discipline [Over and Smallman, 1973]. At the same time, it is important to remember that adding additional authors may also lead to increased costs of coordination, waiting time or even free-riding [Cummings and Kiesler, 2007; Stokols, Harvey, Gress, Fuqua, and Phillips, 2005; Bukvova, 2010]. Considering these complexities, academic supervisors are advised to help their protégés find the right balance. Our exploratory analysis of ICIS conferences proceedings for the last sixteen years (1994–2009), collected from the AIS Electronic Library [AISel, 2013], has shown that the share of single-/two-/three-/four-authored publications has comprised 15.3 percent, 38.4 percent, 29.3 percent and 10.1 percent respectively, suggesting that collaborations between *two* and *three* authors are most common and, possibly, most sustainable in our discipline.

Recommendation 6: Support a Healthy Mentor - Student Relationship

- As a junior researcher, give your supervisor a chance to collaborate with you on a paper.

- As a mentor, avoid exploiting the asymmetrical power relationships when working with PhD students. Encourage students to work as first authors on publications based on their dissertation projects [Osborne and Holland, 2009]. Additionally, encourage students to begin new projects with researchers at the institution where they begin their academic career.

The role of the academic supervisor has been hotly debated in past research across numerous disciplines (e.g., Osborne and Holland, 2009; Strange, 2008). The panelists have unanimously agreed that being an academic supervisor does not automatically warrant co-authorship. Yet, traditionally the advisor is expected to be deeply involved in the candidate's work and, thereby, also significantly contribute to at least one paper.

Recommendation 7: Be ambitious

- As a junior researcher, you will spend months and maybe years of work on one topic—try to make an impact.

- As a mentor, do not stifle the ambitions of PhD students, even if they seem unrealistic at first.

Junior researches should be ambitious and seek mentors and co-authors who will believe in their potential and will be willing to contribute their valuable and rare time. Nonetheless, it is important to keep in the pipeline a steady stream of various research projects that could be targeted at different levels of publication outlets. This approach allows dedicating time to develop promising breakthrough ideas while still fulfilling the requirements of the host institution.

Summarizing, while publication requirements vary considerably across the IS community, a publication record continues to serve as an indicator of current and potential research productivity. As such, care should be taken to nurture quality, quantity, breadth, and depth of scholarly endeavors. Most importantly, however, focus should remain

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[1] This recommendation has been suggested by Henrik Leopold.

on interpersonal relationships with fellow researchers to enjoy scholarly collaboration that is intellectually stimulating, relevant, and fun.

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665

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