Towards a SIGOPS Policy on Subsequent Publications

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The Problem

Often, during the course of a research project, papers get published on similar topics, perhaps with overlapping content and contributions. For example, a research group might publish a 5-page workshop paper (e.g. at *HotOS*), later produce an extended version of this paper for a conference (like *SOSP*), and then produce a revised version for a journal (like *TOCS*); another version of this paper might be published as a technical report or in a newsletter (like *Operating Systems Review*).   Currently, SIGOPS does not have a policy on how to treat submissions of papers that are related to previously published papers. This leads to inconsistent treatment of such submissions across SIGOPS-sponsored conferences, workshops, and other venues.

This document suggests a possible policy for SIGOPS. Ideally, this policy should be consistent with that of other SIGs, but that does not seem possible since different SIGs appear to have different policies or none at all. Our goal, for now, is to have a policy that SIGOPS members will endorse. Once the SIGOPS members have reached agreement on the desired policy, this policy will be clearly documented on the SIGOPS web site and apply to all future SIGOPS workshops and conferences.

Background

ACM does have policies on simultaneous submission, plagiarism, and prior publication. The latter states: "Issuing the paper as a technical report, posting the paper on a web site, or presenting the paper at a workshop or conference that does not publish formally reviewed proceedings does not disqualify it from appearing in an ACM publication. Workshops and conferences are encouraged to indicate in their calls for papers whether or not they will publish formally reviewed proceedings so that authors can determine whether or not submission will jeopardize ACM publication." And also states: "Authors may submit to ACM conferences and journals revised versions of papers that appeared previously in refereed or formally reviewed publications or under consideration for such publication elsewhere if: the paper has been substantially revised (this generally means that at least 25% of the paper is material not previously published; however, this is a somewhat subjective requirement that is left up to each publication to interpret)" (http://www.acm.org/publications/policies/sim_submissions/). While this policy indicates when it is okay to submit revised papers, it does not state how such papers are to be evaluated.

Some SIGs do have well-documented policies concerning the evaluation of revised submissions. For example, SIGCOMM has an "extended submission policy" for revisions to previously published short papers that states: "When reviewing the subsequent, more mature submissions of such work, reviewers are advised to first assess whether there is an adequate additional contribution over the previous, preliminary version of the paper, *If* so, then reviewers are advised to measure the full-length submission not just in terms of its additional contribution but on its entire content. This policy aims to encourage the development of work while also encouraging publication of work when it is in its earlier stages." (http://www.sigcomm.org/about/policies/frequently-asked-questions-faq/).

Terminology

The following definitions may prove useful in discussing and devising a policy.

Published: A paper has been *published* if the paper is publicly available and can be referenced in a way that its contents can be cited and retrieved by others.   For example, the paper has appeared in the proceedings of a workshop, conference, or other technical event, has appeared in a journal or newsletter, has been released as a technical report, or has been posted on the web. Note that this broad definition of published includes both peer-reviewed and non-reviewed publications, but this is not meant to imply that all such papers should be treated equally regarding subsequent submissions (see below).

Peer-reviewed: A paper is a *peer-reviewed* publication if the decision to accept the paper for publication was made by an official committee, e.g. a program committee or editorial panel, based on the quality of the paper and its technical contributions.

Submitted: A paper is *submitted* if it is currently being reviewed and considered for publication in a particular forum (workshop, conference, journal, etc.) and a final decision has not yet been reached.

Simultaneous: Two papers are *simultaneous* submissions if there is some period of time during which they have both been submitted to different forums. This includes papers that have been accepted but have not yet been published.

Subsequent: A paper P' is a *subsequent* submission to paper P if P' was submitted after P was published.

Revised: A paper P' is a *revised* version of paper P if the contents of P' differ from P by no more than 25% (in accordance with ACM's policy). Typically, revisions involve grammatical changes and minor additions or changes to a paper but not substantial new material.

Extended: A paper P' is an *extended* version of paper P if P' contains most of the material included in P along with additional new contents. Typically, P is a short paper that may have appeared in a workshop while P' is a longer version of the paper with new results. The two papers may share introductory material and key ideas, with the extended version adding implementation details, evaluation results, detailed comparisons with related work, and/or practical experience.

Related: A paper P' is *related* to paper P if (1) the two papers have at least one author in common, (2) the papers report on work that was performed at the same institution, and (3) the papers are on the same topic,

system, or research project. Note that two papers can be related without one being a revised or extended version of the other.

A Proposal

Here is what we suggest that SIGOPS adopt as policy, though we realize that reasonable alternatives exist (as discussed in the next section):

- SIGOPS accepts all ACM policies concerning prior publication, plagiarism, copyrights, etc.; the following points are intended to cover issues not directly addressed by existing ACM policy.
- Simultaneous submissions of related papers with significant overlapping content are not allowed. Two papers are deemed to have significant overlapping content if the contributions on which the papers are being judged for acceptance have anything in common. In other words, removing the common content should not affect the acceptance decision of either paper.
- Simultaneous submissions of related papers are permitted as long as the authors believe that the contributions of the papers do not overlap in any way. In this case, however, the authors are required to inform the program chairs of the simultaneous submission as soon as possible and to explain how the contributions of the papers differ.
- When evaluating a paper that has been submitted to a SIGOPS event, previously published peer-reviewed papers by other authors should be treated as prior work regardless of where those papers were published. For example, a paper that appears in the HotOS workshop proceedings or the OSR newsletter counts as prior art when evaluating an SOSP submission by another author; the subsequent SOSP submission is expect to contain significantly new contributions.
- Technical reports and web postings (such as blogs) are not treated as peer-reviewed publications and hence do not count as prior work when evaluating submissions; in other words, authors should not be expected to be aware of all technical reports that relate to their submission.
- The key remaining issue is how to evaluate submissions that are related to previously published papers, i.e. submissions from authors who have previous publications on the same topic. We believe that this should depend on the venue of the previously published paper (P), the venue of the related submission (P'), and the overlapping content/novelty between the two papers. The following table indicates the proposed policy:

P' submitted to P published in	Newsletter (i.e. OSR)	Workshop (e.g. APSys)	Conference (e.g. SOSP, EuroSys)	Journal (e.g. TOCS)
Newsletter	up to editor	P'	P'	P'
Workshop	up to editor	P' - P	If $P' - P > t$, then P'	If $P' - P > t$, then P'
Conference	up to editor	P' - P	P' - P	If $P' - P > t$, then P'
Journal	up to editor	P' - P	P' - P	P' - P

Table 1. Criteria for evaluating a paper P' that is related to some previously published paper P.

Explanation of cells in table:

- up to editor: There is no policy covering this situation, i.e. the editor or PC chair is free to set any conditions for acceptance. For example, a newsletter editor might choose to republish papers from a workshop or conference.
- P': The submission is evaluated on its total contents without considering the previously published paper.
- P' – P: The submission is evaluated on its new contributions beyond those already presented in the previous paper, i.e. the previous paper is considered prior work.
- If P' – P > t, then P': If the submission contains significant content that was not included in the previous paper, then it should be evaluated on its total contents, i.e. the previously published paper should not be counted as previous work that is held against the current submission. This is the current SIGCOMM policy for workshop papers that are turned into conference submissions.

Note that this policy applies only to submissions to SIGOPS-sponsored events, since that's the only thing over which we have control. However, the previously published papers being considered in this policy need not have been published in a SIGOPS event.

Issues for Discussion

Here are some potential issues for debate concerning this proposed policy:

- **Should technical reports be treated as prior work?** This proposal suggests that technical reports should not affect the publication of subsequent papers in any way. Moreover, reviewers of submitted papers should not mark down a submission for failing to cite related material that has only appeared in a technical report (or web posting), but bringing such material to the attention of the authors is allowed and encouraged.
- **Should newsletter articles, e.g. those published in OSR, be treated as prior art?** This proposal suggests that articles from a different research group should be treated as prior art (so that authors do not steal each other's' ideas) but newsletter articles should not hinder publication of future papers by the same authors. We are aware that others in the community, such as the current SOSP PC, favor a more restrictive policy regarding subsequent publication of OSR papers, but we suggest a policy that encourages authors to publish early ideas so they can benefit from feedback during the early stages of their research.
- **Should workshop publications be treated as prior art?** This proposal adopts the same policy as SIGCOMM with the intent of encouraging workshops to publish early stage ideas. Alternatives are to treat workshop papers the same as conference papers (as some conferences do) or to treat workshop papers as though they have not been published (as we understand is SIGARCH's informal policy).
- **Should OSR be allowed to republish previously published papers?** This proposal gives the OSR Editor complete control over what she/he chooses to publish. For instance, OSR may choose to republish select papers from workshops (as we did for last year's SOSP workshops) or articles from non-SIGOPS conferences or newsletters.
- **Should journals and conferences be treated equivalently?** This proposal suggests (perhaps based on old-fashioned beliefs) that conferences and journals are slightly different. In particular, it is okay for an author to revise a previously published conference paper and submit it to a journal, and, in this case, the paper will

be evaluated based on its total contents rather than the new contributions. This allows journals, for instance, to re-publish top papers from conferences (with some revisions).

- **Should the "If P' – P > t, then P'" policy apply to all publications?** That would perhaps lead to a simpler policy. But we fear that it would discourage publication in newsletters. Moreover, it could encourage authors to submit incremental versions of their work to a sequence of conferences in which they add just enough material to the previously published paper to meet the "significant new content" threshold.

Comments?

We would like to hear your feedback (positive and negative) on this proposal. Please send comments, questions, and suggested changes to doug.terry@acm.org. Also, feel free to forward this document to others who may be interested. Our plan is to produce a revised version incorporating the comments that we receive and to publish the suggested policy in the July issue of OSR for final review by the SIGOPS community at-large. We hope to have a policy that can be approved at the SIGOPS business meeting being held at SOSP in October.