How to Publish Your Work

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SEMS Webinar
Outline

1. My frame of reference
2. Nuggets (13)
3. Example papers (2)
4. How to get your paper accepted (10)
Frame of Reference

• Advised 20+ SDM theses at MIT, dozens elsewhere (USC, Arizona, etc.)
• Co-Editor-in-Chief of the Journal of Enterprise Transformation - with Debbie Nightingale (MIT)
• Co-Technical Chair for the IEEE System of Systems Conference - with Man-Tak Shing (Naval Postgraduate School)
• Co-Director of the INCOSE Systems Engineering & Architecting Doctoral Student Network (SEANET) - with Donna Rhodes (MIT)
You

your thesis
Nuggets

1. Good writing requires prototyping & iterating
   – Plan, replan, validate, write, rewrite

2. Think hierarchically
   – Minto pyramid principle, mind maps, etc.
   – Remember the magical number 7, plus or minus two

3. Titles matter
   – “Is Six Sigma Worth the Cost?”
   – “Parasites as weapons of mouse destruction are effective party ice breakers”

4. Use your community – friends, classmates, family – to sharpen your message
   – The “grandmother test” works great

5. A thesis or paper is a fine steak, not a lobster

6. Anatomy of a paper: IMRAD
Figure 1: The Cycle of Empirical Research
From Runkel and McGrath, 1972.
Academic Productivity

• Always have something to bring to supervision meetings – even rough drafts

Why do I even bother with these meetings?

A supervisor CAN be beneficial

Quality of feedback

useful

Without products

With outlines

With draft products

*Notional data

Source: Cooper, C., Promovendum Propositions: Top Ten Tips to Try, INCOSE SEANET workshop, 16 March 2010.
Anatomy of a Paper

IMRAD: Introduction, Methods, Results, Analysis and Discussion

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Five Heilmeier Questions

1. What is the problem you are tackling?
2. What is the current state-of-the-art?
3. What is your key make-a-difference concept or technology?
4. What have you already accomplished?
5. What is your plan for success?
Don’t Write a Check You Can’t Cash
7. Be clear about methodology; understand its baggage
8. Fatal flaw: forgetting about threats to validity
   – Sampling bias
   – Generalizability
   – Internal validity
9. Fatal flaw: ignoring limitations of your conclusions
10. Fatal flaw: not citing the right people
    – Know your place in the web of science
11. Fatal flaw: being normative and descriptive, but not prescriptive
12. Use the scientific method: theory, hypothesis, observations, generalization
13. Leverage conference deadlines as a forcing functions
Methodologies in Systems Engineering

Methodology Choices in Systems Engineering Dissertations

- Field Studies
- Computer Simulations
- Sample Surveys
- Formal Theory
- Judgment Tasks
- Laboratory Experiments
- Field Experiments
- Experimental Simulations

62% of students applied mixed methods

n=58
Your Place in the Web of Science

Example Paper:

- Written in 2007-2008
- Submitted in 2009
- Rejected from IEEE Transactions on Engineering Management
- Revised, submitted to IEEE Systems Journal in early 2010
- Minor revisions required, resubmitted 4 months later; accepted in late 2010
- Published in 2011
Dear Prof. Valerdi:

The reviews of your manuscript have been completed. Based upon reviewer comments, the Department Editor has recommended that your paper not be accepted. Since we normally require two reviews, I also read your paper in detail, and I concur with the department editor. The paper is not a good fit with our journal. It relies quite heavily on a relatively small number of references for many of its suggestions rather than offering new, empirically based suggestions itself, so its main contribution must be the organization and presentation of heuristics in a novel way which is especially useful to managers. The paper falls short of this. After revising the paper according to the suggestions below, I suggest that you try a journal such as the Sloan Management Review or possibly our sister journal, Engineering Management Review. Unfortunately, we cannot accept your paper for publication.

I trust you will find the following evaluations helpful in preparing a new paper for another journal.
The Department Editor's Comments:

Department Editor: [Redacted]

Comments to the Author:
Let me apologize for the length of time for returning some results from this manuscript. It was difficult for us to find reviewers for this paper and we found two after a dozen requests were made. I have been waiting for another reviewer for over two weeks but they do not seem to be forthcoming. I decided to go with one review and felt that the difficulties with the paper, as a professional piece, were significant enough to arrive at a decision.

I do appreciate that more practice papers would be welcome in IEEE TEM, but the levels of quality of presentation and contribution of even practice papers needs to be met. The

reviewer brings up a number of concerns ranging from fit, to clarity, to contribution. I hope the comments prove useful for improving the manuscript. At this time, I will have to concur with the reviewer and recommend to the Editor in Chief that we not publish this manuscript.
Referee Reports from Reviewers:
Reviewer: 1
Comments for Authors
I don't believe that this paper should be accepted due to following reasons:
- You describe heuristics for cost estimation, but are they really heuristics or roadmaps for engineering management?
- In most of the sentences, you define certain concepts such as heuristics (in Section A), validity of heuristics (Section B) however you don't give any references.
- You mention details about COSYSMO, however you did not provide enough references (Second paragraph in Section II).
- Paper describes too much about Rechtin's heuristics. What do you provide in this paper different than Rechtin's heuristics? (It is strongly related with Rechtin's work.)
- Organization of the paper is so complicated that reader distracts when reading after two-three pages. It looks like a story, few or no figures, pictures or charts that explains your approach.
- What do you mean in Heuristic # 10?
- In conclusion you mention about quality. Do you mean process or product quality?
--- Are you saying that heuristics should be baseline for cost models?
--- What is the relation between heuristics and cost models?
--- Do you mean that cost models that use parameterized or AI based approaches are less helpful than heuristics?
--- There are cost estimation models that use strong AI principles, but you don't mention any of them.
- You should make a comprehensive grammar check, there are lots of mistakes in the paper.

I hope that you will continue to submit your research papers on engineering, technology and innovation management to IEEE Transactions on Engineering Management in the future.
Example Student Paper

Naval Engineering Conference

Conference on Systems Engineering Research

Acquisition Review Journal

Chapter in “Economics of HSI” book

Thesis
How to Get Your Paper Accepted

1. **Clarity**: Pose an interesting research question/hypothesis and clearly state it
2. **Rigor**: Choose the most appropriate methodology/research design; scientifically test the hypothesis; cite the right body of literature; go the extra mile
3. **Originality**: Build from other people’s work; but demonstrate how your contribution is unique
4. **Utility**: Recognize that it is human nature to be lazy; make your ideas palatable
5. **Focus**: Submit your paper to the right venue
6. **Package**: Cater to various learning styles (visual, auditory, read/write, kinesthetic)
7. **Teach**: readers want to learn; relate to those outside of your area
8. **Avoid**: irritating statements or outrageous claims
9. **Learn**: Get involved in reviewing papers
10. **Impact**: Discover your strengths and build on them
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