Ref: FGCS\_2018\_1298  
Title: The Global Impact of Science Gateways, Virtual Research Environments and Virtual Laboratories  
Journal: Future Generation Computer Systems

Dear Dr. Olabarriaga,

Thank you for submitting your manuscript to Future Generation Computer Systems. I have received comments from reviewers on your manuscript. Your paper should become acceptable for publication pending suitable minor revision and modification of the article in light of the appended reviewer comments.

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I look forward to receiving your revised manuscript as soon as possible.

Kind regards,

Professor Sloot  
Editor-in-Chief  
Future Generation Computer Systems

**Comments from the editors and reviewers:**  
-**Reviewer 1**  
  
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This is a timely paper that will be of interest not only to practitioners in the field, but to funding agencies/government, and researchers in general.

This was a clean and well-organized manuscript. I offer the following suggestions which may help to improve it in a few places.

1. Starting on page 4 you use the term "community of practice." Although it is defined in the reference, the term is used a few more times in the paper, so perhaps a succinct definition?

2. Pg 7: Suggest you define XSEDE as NSF-funded HPC infrastructure. With all the acronyms, every bit helps.

3. Pg 9: In the paragraph starting on line 208 you mention the benefits of globally distributed, internet-accessible infrastructure, including for Africa. Does not \*have to\* be addressed here, but internet accessibility in Sub-Saharan Africa (excepting perhaps SA) is still a challenge. I think groups like H3 Africa BioNet have opted for different, local solutions. Maybe a mention?

4. From page 8-14 it seems like many of the paragraphs could be grouped into subheadings in this section (e.g. 'Open source', 'Linking infrastructure', 'Standards', etc.). May help readability, and i don't know if it may prompt authors to tweak how the content is organized.

5. Pg 11: Line 261 - COS should be the American English Center for Open Science

6. It occurs to me that section 5 (Pg 14) might actually open with the content in the paragraph starting on Pg 15 line 373. I think most people close to the subject find measuring impact to be one of more difficult challenges. For less familiar readers, presenting this more explicitly might better frame the content in this section.

-**Reviewer 2**  
  
  - Overall a good overview of recent efforts, although it does make me wonder if a more comprehensive list of key platforms/initiatives would be feasible as a follow-up?

1. Section 3 discusses existing programs, and provides funding for some, but not all. If feasible I would suggest adding information on funding levels for all. Likewise, if the user activity listed for Nectar was available for the others that would also be useful.
2. Line 150, replace "form" with "provide".
3. Line 222 - delete 2nd "Apache".
4. Line 240 - add hyphen before "related".
5. Line 248 - delete "open".
6. Line 270 - replace "develop" with "tailor".
7. Line 417 - replace "to rely" with "a reliance".

-**Reviewer 3**  
  
  - This manuscript provides a comprehensive overview of current Virtual Research Environment and Science Gateway infrastructure.

The article is deliberately broad to encompass all aspects of the Science Gateways. In future articles, it would be useful to contrast this analysis to other research and development activities occurring outside of publicly funded research institutes and organisations. Are, VRE's used in commercial companies with large research and development operations (e.g. pharmaceutical, manufacturing. material design, information technology development).

Additional analysis on outcomes and impact areas from an international perspective would also be useful. The article references some initiatives designed to increase adoption, utilisation and sharing of research infrastructure global but does not reference the Global Impact of these infrastructures. Further discussion on implicit or explicit impact would be useful.

Some specific comments regarding the article include:

* Figure 1 - Utilisation Graph - would be useful to have some explanation to why there was an increase in mention of VRE's in 2008 and then a fall. Also, is it unclear what has caused the decrease in presentations in Australia. Is this funding or no accurate reporting for those periods?
* VRE in open source environments with active code development -  [33] and Galaxy [34], Drupal [35] and Django [36]. Suggest removing Drupal and Django due to their common usage outside of the VRE.

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