Ex-post Evaluation of Science in Society in FP7 – Unit RTD B7 response to recommendations

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Science in Society

The Science in Society (SiS) programme was part of the FP7 'Capacities' programme and had a budget allocation of €312 million for the period 2007-2013. The aim of the FP7 SiS programme was to improve the links between science and society. Specifically, the programme sought to:

- Develop ways to enhance the numbers of young people from all backgrounds entering science education and careers;
- Identify and address barriers to gender equality in research;
- Develop mechanisms to improve understanding of the role of science in society;
- Increase the role of the wider public and non-research actors in science policy making and agenda setting;
- Promote the development of an ethically sound and responsible European Research Area (ERA);
- Make the results of publicly funded research more accessible.

The FP7 SiS programme attracted 841 proposals, of which 184 projects (22% of proposals) were selected for funding.

Ex-post Evaluation of Science in Society

An Ex-post evaluation of Science in Society in FP7 was carried out from October 2014 to December 2015 (with minor revisions from March to May 2016) by Charu Wilkinson, Jan Franke and James Stroyan at ICF Consulting Services, in association with Delft University, Facts of Life and Technopolis.

The objectives were to assess:

- The rationale, design and implementation of the FP7 SiS programme;
- The impact and achievements of the programme;
- The EU added value demonstrated by the programme.

Full[1] and executive summary[2] reports were published on the EU Bookshop website in June 2016.

Evaluation recommendations

The evaluation confirmed the relevance and importance of an EU-level programme addressing SiS/Responsible Research and Innovation (RRI) issues. However, it also flagged a number of areas where improvements concerning strategy and operation could be made. Below, we describe the responses made to these recommendations in Horizon 2020 and in Science with and for Society (SwafS)[3]. This is followed by a more comprehensive tabulated list.

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[1] http://bookshop.europa.eu/en/ex-post-evaluation-of-science-in-society-in-fp7-pbKI0216492/.
[2] http://bookshop.europa.eu/en/ex-post-evaluation-of-science-in-society-in-fp7-pbKI0216493/.
[3] https://ec.europa.eu/programmes/horizon2020/en/h2020-section/science-and-society.

Overall, SwafS has already responded in large part to the recommendations of the Ex-post Evaluation of Science in Society, with on-going and future work foreseen to 'complete' the package.

Strategic recommendations

Strategic recommendations included *strengthening linkages between programme and high-level policy priorities (#1)*, *ensuring greater coherence and clarity of thematic objectives and how projects contribute to them (#2)*, and *focusing on 'on-the-ground' impacts as opposed to new knowledge (#4)*.

Efforts to address these recommendations have already been made in SwafS Work Programmes, with several topics focused on addressing the described needs (see the table below). The introduction of Key Performance Indicators (KPIs) for SwafS, RRI and Gender in Horizon 2020 goes some way towards providing overarching guidance and making systematic links between high-level priorities and SwafS[4]. In the future, the outcomes of *Monitoring the evolution and benefits of Responsible Research and Innovation* (MoRRI) will provide clear guidance to ensure the programme's funding focuses on maximising the benefits and impacts of RRI.

The future Work Programme will also be shaped by *Open innovation, open science, open to the world* by Commissioner Moedas[5], which describes the rationale and insights underpinning the 3Os strategy. It highlights actions that are already taking place or are being prepared, and makes direct links between the 3Os strategy and RRI. User-led innovation and citizen science are likely to be focused on in the SwafS 2018-2020 Work Programme, as they link the 3Os to RRI; both were also frequently mentioned in the recent SwafS Open Public Online Consultation (OPOC)[6].

A future ERA-Net on RRI/Open science, suggested in the SwafS OPOC, could encourage member states and associated countries to work together to define methods to implement RRI/Open Science and Innovation and create links and synergies between efforts at European and national levels.

Other strategic recommendations included *increasing the use of theme-based advisory groups (#6)*, *greater involvement of policy makers at national and EU levels (#7)*, and *stronger involvement of industry (#8)*. These have been taken up through the Advisory Group on Gender and the Horizon 2020 Advisory Group on 'Science with and for Society', which bring stakeholders from across disciplines and sectors together in the programme to discuss issues of relevance to gender and SwafS/RRI. Two expert groups will also assist in the Interim Evaluation of Horizon 2020 – for SwafS/RRI and gender as a cross-cutting issue. The work of these two groups will provide valuable external expertise on the SwafS programme and possible input into the future Framework Programme.

Several strategic recommendations appear to merit continued attention. For instance, *increasing the clarity and focus of objectives through 'SMARTer' objectives* (#3) has already been partially met by the 100% target for Open Access outputs, and development of KPIs for SwafS, RRI and gender in Horizon 2020 (see above & footnote #4). While effort has been made to improve the expected impacts in the Work Programme, an accepted 'smart grid' for topics has so far not been developed. Specific topics also contribute to the response, for instance SwafS-09-2016, which will provide support to EC services for a critical analysis of the various Horizon 2020 parts. Finally, the SwafS OPOC suggested that RRI should be considered as part of the evaluation of Horizon 2020 proposals.

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[4] https://ec.europa.eu/programmes/horizon2020/en/news/horizon-2020-indicators-assessing-results-and-impact-horizon.
[5] http://bookshop.europa.eu/en/open-innovation-open-science-open-to-the-world-pbKI0416263/.
[6] http://ec.europa.eu/research/consultations/swafs-wp2018-2020/swafs_wp_2018-2020_opoc_analysis.pdf.

Efforts to *maximise the added value and impact of FP7 investments* (#5) have been made in FP7 and Horizon 2020, for instance through topics focused on training on RRI and the EuroScience Open Forums. Projects such as RRI-Tools respond directly to this recommendation[7]. Following a gap analysis and contributions to the SwafS OPOC, there will be additional focus in the upcoming SwafS Work Programme on, for instance, science communication and learning and reflection upon past and current projects.

<u>Operational recommendations</u>

The operational recommendations can be broken down into two broad groups: those that focus on *issues specific to SiS/SwafS*, and those that relate to the *administrative and legal requirements of Framework Programmes*.

Concerning the first, while *more open calls* (#9) continues to be requested (e.g. in the SwafS OPOC), its operationalisation has proven challenging as it seems to have had two contrasting results: very many proposals for some topics, or very few proposals for other topics (e.g. because applicants are not sure what to focus their proposals on). This leads to very high or very low success rates, an increased number of queries through the helpdesk, and the need to draft and publish more FAQs on the Participant Portal. The challenge is to find a more optimal balance between openness and prescription, allowing creativity and openness to flow from stakeholders in an open 'bottom-up' manner, but also focusing efforts on those areas of policy, research and innovation that require greater attention.

Horizon 2020 rules govern the recommendation concerning *easier access for new entrants* (#10). Nevertheless, this recommendation seems particularly pertinent when it comes to institutional change (for RRI including gender, and gender), where greater impact could be expected from supporting organisations at an early stage in implementing RRI or gender institutional change, perhaps supported by more 'experienced' organisations. This issue is taken up directly by SwafS-08-2017: European Community of Practice to support institutional change. Institutional change topics aim to encourage 'sustainable institutional change', so funding organisations that have already received this kind of support could raise questions about efficiency of the implementation or (lack of) ambition in funded proposals. Ways to take this recommendation into further account will be considered for the SwafS 2018-2020 Work Programme.

As regards operational recommendations concerning the *administrative and legal requirements of Framework Programmes*: these have mostly been dealt with through the simplification measures introduced in Horizon 2020[8], and are likely to be tackled further by the additional simplification measures foreseen[9].

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[7] See http://www.rri-tools.eu/.
[8] See for instance
http://ec.europa.eu/research/horizon2020/pdf/press/fact_sheet_on_rules_under_horizon_2020.pdf.
[9] See for instance the Report on the H2020 Simplification Survey
http://ec.europa.eu/research/participants/data/ref/h2020/other/events/survey/h2020_simplification-survey_final-report_en.pdf.

	Strategic recommendations		
#	*Recommendation*	*Synopsis*	*Detailed list[10] of responses to the Ex-Post Evaluation of SiS*
1	Strengthen linkages between the programme and high-level policy priorities	SiS/RRI issues should become an integral part of EC policy on research and innovation. The EC should explicitly define the links between SiS/SwafS and its high-level political priorities, most notably: "Open science, Open innovation and "Open to the world".	*Open innovation, open science, open to the world* by Commissioner Moedas provides useful guidance on links between programme and high-level policy priorities. Previous SwafS Work Programmes have strengthened links, with notable topics including: • GARRI.3.2014 - Scientific Information in the Digital Age: Text and Data Mining (TDM), which focuses on the process of deriving information from machine-read material and is an essential feature in open science and innovation. • GARRI.4.2015 - Innovative approach to release and disseminate research results and measure their impact, which seeks to examine the peer-review system and whether traditional means of evaluating research impacts remain practical and relevant. • SwafS-07-2016: Training on Open Science in the European Research Area, which focuses on training stakeholders with a view to permitting them and/or their organisations to fully implement the practical aspects of open science. • SwafS-09-2016: Moving from constraints to openings, from red lines to new frames in Horizon 2020, which aims to engage a broad community of stakeholders to compare experiences and identify opportunities to develop RRI in the various parts of Horizon 2020. • SwafS-10-2017: Putting Open Science into action, which aims to operationalise an Open Science rationale for one or more of the societal challenges defined under Horizon 2020. A future ERA-Net on RRI/open science, as suggested in the SwafS OPOC, could encourage member states and associated countries to work together to define processes and methods of implementation of RRI/open science and innovation on

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[10] While detailed, this list is not necessarily exhaustive.

			European and national levels, and create links and synergies between European and national levels. The study on "Network analysis of Civil Society Organisations' participation in research framework programmes" will provide crucial information on how FP7 involved CSOs and inform policy responses to strengthen the quality and quantity of CSO participation in the Framework Programmes (which links to the RRI KPI).
2	Clarity of focus and objectives	Future programmes should have well-defined goals that provide a clear sense of direction as well as the 'distance to be travelled', along with SMART(er) objectives. This particularly applies to SiS aspects/RRI in other parts of Horizon 2020.	Horizon 2020 introduced the requirement that in principle all peer-reviewed publications are open access. Moreover, it has introduced KPIs for SwafS ('number of institutional changes'), for RRI ('CSO involvement in Horizon 2020') and Gender (several indicators)[11]. MORRI will be helpful in providing further clarity concerning indicators of the benefits of RRI. Efforts have been made to make the impact section of topics more explicit. However, there is so far no agreed 'SMART grid' to provide specific guidance on how to measure project impacts. Efforts have also been made to systematically improve the clarity and objectives in Work Programmes. These include: • SwafS-09-2016: Moving from constraints to openings, from red lines to new frames in Horizon 2020, which will provide useful support to the services for a critical analysis of the various Horizon 2020 parts. • SwafS-10-2017: Putting Open Science into action, which will operationalise an Open Science rationale for one or more of the societal challenges defined under Horizon 2020. The SwafS OPOC suggested that RRI should be considered as part of the evaluation of Horizon 2020 proposals. Work to embed RRI in Horizon 2020 will reflect on this possibility.
3	Greater coherence and clarity of thematic objectives and how projects contribute to them	The objective for each of the themes should be defined more clearly to ensure coherence between objectives	Efforts have been made to ensure coherence and clarity of thematic objectives in the 2014-2015 & 2016-2017 WPs. Efforts will be continued for the 2018-2020 WP, where four clearly demarcated lines should help avoid projects duplicating

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[11] https://ec.europa.eu/programmes/horizon2020/en/news/horizon-2020-indicators-assessing-results-and-impact-horizon.

		and the actions. Synergies and complementarities between projects should be made explicit, in order to ensure that projects do not compete with each other or duplicate activities.	efforts. The MORRI study will also help in this regard, as it has developed indicators for each of the six dimensions of RRI. These could inform how the Work Programme and Topics are shaped and defined. MoRRI could also help inform discussion on how RRI could be considered part of the evaluation of Horizon 2020 proposals.
4	Stronger focus on 'on-the-ground' impacts as opposed to new knowledge	Projects should be designed to generate policy impacts from the outset, and have sufficient time and resource to do so effectively. This could be achieved through greater involvement of policy makers at programme level, through specific guidance and requirements on how to measure impacts at the project level, and the mandating of a SMART impact section in project proposals (which should form part of evaluation).	Efforts have been made to make impact section of topics more explicit. However, there is so far no accepted 'SMART grid' to provide specific guidance on how to measure project impacts. Consideration could also be given to requiring SMART impacts to be defined in proposals (also potentially relevant for discussions on incorporating RRI in evaluation of proposals). Two topics that will help in this regard include: • SwafS-07-2016: Training on Open Science in the European Research Area, which will develop, improve and consolidate training activities on open science for a large number of European stakeholders. • SwafS-08-2017: European Community of Practice to support institutional change, which will create a community of practice of research and practitioners centres experienced in gender equality. Further insight into 'on the ground insights' could be provided by the Stock-taking and meta-analysis of Science in Society projects throughout FP6 and FP7.
5	Maximise the added value and impact of FP7 investments	There is a strong need to package up the results of SiS projects in a way that makes them meaningful to potential 'users' such as policy makers, practitioners and industry. To maximise the impact of SiS-type activities, it is necessary to identify, extract and disseminate information on (a) the key things that have been learned from the	Past actions include: • The RRI Tools project[12], which is developing a set of digital resources to advocate, train, disseminate and implement RRI under Horizon 2020, drawing extensively from past and on-going FP7 and Horizon 2020 projects. • The Euroscience Open Forum (ESOF) 2014, which was held in Copenhagen. • The Euroscience Open Forum (ESOF) 2016, which was held in

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[12] http://www.rri-tools.eu/.

		funded projects and (b) the key changes/practice improvements that could be applied by the various 'user groups'.	Manchester (UK). • The Euroscience Open Forum (ESOF) 2018, which will be held in Toulouse (France). Future actions could include: • A focus on research on Science Communication, which could also be framed so that they take up opportunities to learn from previously funded projects. • A heritage package could be requested from proposals, including the DoW and the most useful deliverables, as well as ways to pursue activities. Further insight into 'on the ground insights' could be provided by the Stock-taking and meta-analysis of Science in Society projects throughout FP6 and FP7.
6	Increase the use of theme-based advisory groups	There should be greater use of expert advisory groups for individual SiS/RRI themes to inform deliberations at the start of the programme, and assist DG RTD with strategic advice on future priorities, call preparation, progress and exploitation of results. Group membership should be as broad as possible, comprising representatives of main user groups of SiS outputs (industry, public authorities, civil society, and the scientific and academic community).	Several theme-based advisory groups have already been set up: • The Horizon 2020 Advisory Group on 'Science with and for Society'[13]. • The Advisory Group on Gender[14]. • SwafS-19-2016: Networking of National representatives and resources centres on Gender in R&I. Two expert groups have been set up to assist in the Interim Evaluation of Horizon 2020, and whose findings and analysis will help inform development of future Work Programmes: • Horizon 2020 Commission expert group on the interim evaluation of Science with and for Society and Responsible Research and Innovation in Horizon 2020[15]. • Horizon 2020 Commission expert group on the evaluation of Gender as a cross-cutting issue (exact name to be confirmed).

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[13] http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=3093.

[14] http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=3034.

[15] http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=3451.

| 7 | Greater involvement of policy makers at national and EU levels | Future work would benefit from greater involvement of policy makers (science ministries) and other bodies (research councils, scientific foundations) that have the power to implement changes in governance arrangements at both national and EU levels. The objective of this deeper engagement with policy makers should be to help set priorities and ensure that the programme invests in actions that have the scale and reach to deliver results of utility to policy makers. | Several groups have been set up to involve policy makers at national and EU levels:

• The Horizon 2020 Advisory Group on 'Science with and for Society'.
• The Advisory Group on Gender.
• Science with and for Society National Contact Points (NCPs) in Horizon 2020[16].
• National Contact Points for quality standards and horizontal issues[17].
• Recently, it was agreed to form a specific Strategic Programme Committee Working Group on SwafS.

Greater involvement of policy makers at national and EU levels could be assured through:

• SwafS-02-2016: ERA-NET Cofund – Promoting Gender equality in H2020 and the ERA, which will extend work on completing the European Research Area in the field of gender equality in research and innovation.
• SwafS-04-2016: Opening Research Organisations in the European Research Area, which amongst other activities will provide training to policy makers and staff working in funding bodies on the institutional changes needed to cope with the new interactions between Research Funding and Performing Organisations (RFPOs) and RRI stakeholders.
• SwafS-19-2016: Networking of National representatives and resources centres on Gender in R&I.
• A possible future ERA-Net on RRI/Open science, which could aim to engage policy makers and other stakeholders to work together to define processes and methods of implementation of RRI/Open Science and Innovation on European and national levels. |
| 8 | Stronger involvement of industry | Closer involvement of industry in all stages of the programme is important to ensure that the outputs of the | Several topics have focused specifically on industry:

• SEAC.4.2015 - EURAXESS outreach to Industry |

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[16] http://www.sisnetwork.eu/.
[17] http://www.2020-horizon.com/National-Contact-Points-for-quality-standards-and-horizontal-issues-i1674.html.

		programme are practically relevant and useful, and are ultimately adopted to improve the functioning of ERA.	• GARRI.2.2015 - Responsible Research and Innovation in industrial context. • SwafS-06-2017: Engaging industry – Champions for RRI in Industrial Sectors. • SwafS-14-2017: A Linked-up Global World of RRI. An analysis of existing sectors/industries covered by successful proposals could help inform the shaping of the Work Programme 2018-2020.
	Operational recommendations		
9	More open calls	Proposals should be less prescriptive and give more room for creativity. More open calls would give more scope for project consortia to set appropriate timescales and budgets, and would, according to some, make it easier for new entrants to become involved.	This philosophy was applied for the SwafS 2014-2015 calls, but resulted in very low success rates for some topics. The same philosophy was applied for SwafS 2016-2017, which was purposefully more open and less prescriptive to give space for 'bottom-up' creativity. Several topics were deliberately formulated in open terms (e.g. SwafS-04-2016, SwafS-05-2017, and SwafS-09-2016), though results from the two closed topics (currently under evaluation) suggest that these open topics are associated with a lower number of proposals. Indeed, feedback suggests that despite calls for more open topics, potential applicants find the lack of prescription difficult to respond to or give guidance about. Further consideration will be given as to how calls can be both open enough to allow creativity and prescriptive enough to focus on priority areas and encourage high-quality proposals.
10	Easier access for new entrants	It should be easier for new types of organisation to participate, particularly CSOs and SMEs. Simpler application and reporting rules, improved financing terms and conditions, and smaller projects would all make it easier for civil society and SMEs to participate.	Simplification was one of the major features of Horizon 2020. A survey of contact persons in on-going H2020 projects was conducted in 2015, which suggested a significant proportion of users were satisfied with the simplification measures introduced in H2020 – to the extent that only 20% of respondents indicated that they know of other funding programmes that are simpler than Horizon 2020[18]. Future efforts to simplify Horizon 2020 may include more widespread use of two-stage proposal evaluation, a revision of the template and guidance for time recording, and continued improvements to the Participant Portal (support

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[18] http://ec.europa.eu/research/participants/data/ref/h2020/other/events/survey/h2020_simplification-survey_final-report_en.pdf.

11	Improved funding levels	Funding levels should be increased to cover the full/a higher share of participation costs, in order to facilitate CSO access to the programmes.	documents, FAQs, etc.). SwafS could introduce 2-stage evaluation topics, e.g. for lines focused on institutional change.
12	Lighter administration/ reporting	There should be lighter administration and reporting across the board. Publications should be prioritised over management reporting. There should be simpler rules for CSOs.	Two topics dealt with easing entry requirements, particularly for newcomers: GARRI.7.2014 - Science with and for Society National Contact Points (NCPs) in Horizon 2020, and GARRI.8.2014 - National Contact Points for quality standards and horizontal issues. SwafS-10-2017: Putting Open Science into action could also help in this respect.
13	More flexibility	There should be greater scope to make adjustments to project workplans, financial plans and timetabling mid-course. More flexibility would allow projects to adjust in the light of stakeholder input and respond appropriately.	On the issue of CSO involvement: It is becoming apparent that the level of real CSO (i.e. not representing commercial interests) involvement in Horizon 2020 is very low[19], and that the quality of the involvement of CSOs is also low (e.g. tokenistic participation, 'light' dissemination roles, negligible input into the R&I). Efforts should be made to differentiate between the different kinds of CSOs and their involvement in Framework Programmes. This requires additional consideration, taking into account on-going work by the study on Network analysis of Civil Society Organisations' participation in research framework programmes (Tender RTD-B6-PP-00962-2013) and the results of the Horizon 2020 Interim Evaluation.
14	Follow-up funding for dissemination/take-up	There is a need for more dedicated follow-up funding for dissemination and wider take-up of project results. Participants argued that three years and the budgets available are not sufficient to make maximum use of the results and tools developed. When projects have been successful then follow-on	There has been concerted effort to ensure follow-up funding for dissemination/take-up and encourage synergies and learning between projects. In particular, "Stock-taking and Meta-analysis of Science in Society projects throughout FP6 and FP7" (RTD-B6-PP-00965-2013) aims to assess and report on the implementation, results and wider impacts of the Science and/in Society projects and activities in Framework Programme 6 and 7 and analyse the interaction of (the outputs of) projects and activities with relevant EC policy

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[19] This has been examined specifically by "Network analysis of civil society organisations' participation in research framework programmes" and several projects (RTD-B6-PP-00962-2013). The Ex-Post Evaluation of FP7 provided useful information concerning involvement of CSOs: https://ec.europa.eu/research/evaluations/pdf/fp7_final_evaluation_expert_group_report.pdf. See also (for instance): http://www.campusengage.ie/sites/default/files/resources/Civil%20Society%20and%20Research.pdf and http://www.securepart.eu/download/actionplan_06062016160606173554.pdf.

		funding and political support should be available to ensure maximum take-up and impact from the original investment.	initiates and assess the impacts of Science and/in Society projects and activities on EC policy and *vice versa*. Other notable activities include:
15	Longer timescales	There is a need for longer timescales, to allow time for dissemination and to allow other actors to take-up results.	• The EuroScience Open Forum (ESOF) 2014, which was held in Copenhagen (Denmark). • The EuroScience Open Forum (ESOF) 2016, which was held in Manchester (UK).
16	More synergies	There should be more synergies between projects to enable improved coordination and sharing of results/best practices.	• The EuroScience Open Forum (ESOF) 2018, which will be held in Toulouse (France). • European Union Contest for Young Scientists (EUCYS) 2014, which was held in Warsaw (Poland). • European Union Contest for Young Scientists (EUCYS) 2015, which took place in Miland (Italy). • European Union Contest for Young Scientists (EUCYS) 2016, which took place in Brussels (Belgium). • European Union Contest for Young Scientists (EUCYS) 2017, place tbd. • FP7 SCIENTIX III, which is building and maintaining a science education community in Europe by promoting inquiry-based science education and other initiatives at national level. • Conference on Stock Taking Science in Society projects throughout Sixth and Seventh Framework Programmes, which took place under the auspices of the Italian EU Presidency from 19 21 November 2014. • The RRI Tools project, which is developing a set of digital resources to advocate, train, disseminate and implement RRI under Horizon 2020, drawing extensively from past and on-going FP7 and Horizon 2020 projects. • SwafS-27-2017: Implementing a European Train-the-trainers initiative with regard to Ethics and Research Integrity, which requests relevant past and current FP7 and Horizon 2020 be taken into account. Further thought could be given to ensuring high-impact/good practice dissemination (and transfer between projects) are systematically highlighted in topic descriptions.