Politics and Open Science: How the European Open Science Cloud Became Reality (the Untold Story)

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ABSTRACT

This article will document how the European Open Science Cloud (EOSC) emerged as one of the key policy intentions to foster Open Science (OS) in Europe. It will describe some of the typical, non-rational roadblocks on the way to implement EOSC. The article will also argue that the only way Europe can take care of its research data in a way that fits the European specificities fully, is by supporting EOSC.

It is fair to say—note the word FAIR here—that realizing the European Open Science Cloud (EOSC) is now part and parcel of the European Data Science (DS) policy [1]. In particular since EOSC will be from 2021 in the hands of the independent EOSC Association [2] and thus potentially way out of the so-called “Brussels Bubble”.

This article will document the whole story of how EOSC emerged in this “bubble” as one of the policy intentions to foster Open Science (OS) in Europe. In addition, it will describe some of the typical, non-rational roadblocks on the way to implement EOSC. The article will also argue that the only way Europe can take care of its research data in a way that fits the European specificities fully, is by supporting EOSC.

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0. PROLEGOMENA

Historians of European science policies can look at the making of EOSC in two ways.

On the one hand, the decision to create EOSC and in doing so to position European science, for the time being, at the forefront of science data policy, can be described as the result of a chain of logical events and initiatives, which culminated in key political documents and decisions that explain why EOSC became what it is today.

Historians would then write something like this:

In May 2015 the European Commission (EC) published its Communication on the Digital Single Market [3], one of the 10 key priorities of the then new president Junker. That document contains one of the first policy references to open research data and cloud to be found in EC policy making. In it the Commission announced the launch of a cloud for research data—the “research open science cloud”.

One year later, in 2016, and because judged so important by the Council Conclusions on OS in Amsterdam 2016 [4], a separate Commission Communication was published on the European Cloud initiative in which EOSC got first fleshed out [5].

Both documents allowed the Commission Services to come up, in the first half of 2018 with a so-called Staff Working Document (SWD) on implementing EOSC [6]. This SWD, acting as an unofficial roadmap for EOSC, was largely inspired by the work of a European expert group [7].

Having the roadmap agreed in the usual policy gremia of European decision making and having new Council Conclusions in May 2018 on EOSC allowed to officially launch in November 2018 under the Austrian Presidency, what we have today: the governance structure of EOSC [8].

All of what seems to be logical steps demonstrate a coherent picture. It fits the formal account of European OS and Open Data (OD) policies.

But it only documents the final outcome of what was a much less logical decision process. In fact, the making of EOSC as known today, is also the result of a process of fuzzy logic which can best be read, and other historians might discover, as a Greek tragedy.

This Greek tragedy is the untold story referred to in the title of this article. Its subtitle could be: “EOSC, a Greek drama made in Brussels”. It has a genesis, climax, anti-climax and catharsis.

By publishing this personal account—for which there are no formal minutes to be quoted, let alone council conclusions—we hope, like Greek drama’s intent to do, to spark some self-reflection for all science and science policy actors in Europe who in one way or another have a voice in the future of EOSC.

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* Two articles document this formal account fully [9, 10].
* Greek tragedies are about human power games and hubris and via self critique showing the right way forward.
Notwithstanding the creation of the EOSC Association—a crucial step in making sure EOSC will respond to the needs of the 2 million European researchers in the first place—and nevertheless a very successful governance conference showing once again how many experts around Europe want EOSC to happen [11], EOSC still is, four years after starting the process, largely an empty box for the active researchers.

And in digital policies, Europe has a long history of creating too many empty boxes [12]. That too is a Greek Drama.

1. THE GENESIS OF EOSC: NOT MISSING THE DIGITAL TRANSFORMATION OF SCIENCE, EARLY DISCUSSIONS

The idea for EOSC did not emerge in a vacuum nor in the Berlaymont building (home to the top EC officials), nor when the Commission Juncker took office at the end of 2014.

It was part of a wider set of ideas Directorate General (DG) Research, the EC, started working on in 2014/15 when observing the impact of digital technologies on science. We labelled that impact as the emergence of a new *modus operandi* for science and called it, in those days, Science 2.0.

In doing so we referred to earlier work, done at the EC’s Joint Research Centre [13], where we analyzed, as part of a multi annual research program, why Europe could well (and did) miss the boat in the Web 2.0 revolution in the economy, industry, education and social and in science (“missing the boat” can be easily illustrated by looking at the top 20 or more companies dominating the Internet or Web 2.0 [14]).

So right from the start, what is now overall key in the Von der Leyen Commission, the ambition “Europe cannot miss the next wave in ICT again and should make sure it has its ‘science industry’ ready for it” was a major driver of the work on OS.

To explore the depth of the digital change many workshops were organized in 2014 with European scientists from all disciplines and ages. There it was already clear that all science will become data-driven science and all observable as non-observable realities will become a digital point or have a digital trace (the Internet of everything). That will inevitably lead to an explosion of data and thus an explosion in the potential for data-driven science®.

In these workshops there was unanimity that the key issues of this explosion of DS were: the non-discriminatory access to the data, the interoperability across disciplines and making sure these data are managed in respect of European sensitivities like what will late become the European General Data Protection Regulation (GDPR).

On top of “we can’t miss this digital innovation wave again” came a second deep concern underlying our policies: European science must master the results of its publicly funded research itself. That led us to

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® This explosion is also why Digital Object Interface Protocol [15] needs to be implemented as soon as possible as it is the only way to make this data explosion traceable and thus manageable.
insert paragraphs on the importance of OD in the aforementioned communication on the Digital Single Market and led us to convince the incoming Commissioner for research (2015) that not only open innovation was important, but also OS and OD [16].

It is important to stress that finding a European way to guarantee open access to our data has been on the European science policy radar since 2014. But most important, it was based on rational considerations (mastering DS our way and making sure Europe stays in the league of top science players) and not emotional grounds (such as “open is better”).

The reason why the then RTD Director General took this new line of policy action quite rapidly in 2014/15 on board was not because he was immediately convinced himself. In fact, this was not at all the case and it took more than 1.5 years to have the DG fully behind what we did².

But he saw the issue right away and noted that not only a whole community of scientists and experts was there to support our analysis. But also that our proposal fitted his overall views that OS was science in the first place and not some technology-determined trend only … and therefore to be led by the Directorate General for Research and Innovation (DG RTD)².

1.1 Birth of the Term EOSC

We can identify two important dates, which cannot be found in any text.

When the new Commissioner announced his OS priorities, the Amsterdam Competitiveness Council of 2016 ratified them and issued the Amsterdam Call for Action on OS [17].

Here again a coincidence helped us because the Dutch officials responsible for the science part of the Netherlands’ EU Presidency, saw in bringing OD and science to the European level, a way to supra-nationalize some of the intense debates in the Netherlands on how science became, according to them, irresponsible, lacked accountability, was driven by performance indicators and not intrinsic scientific progress etc. …²

It is not to be taken for granted that if another country would have been responsible for the EU Presidency in that part of 2016, the OS priorities, amongst which EOSC, would have been accepted indeed.

Still, within DG RTD not all were on board and I had to explain all this in a directors meeting. We used our classical type of presentation on the EC’s eight priorities on OS and the Director General, fully convinced by then but critical as ever, asked me out of the blue and in front of all the directors, “all well your analysis about data-driven science, but what are you going to do about it?”.

© Once convinced, however, the DG became the biggest supporter and at several points critical enabler of all ongoing OS work.

I refer here to an implicit tension in EC policy between technology fixes (“more pipes to transport data will solve all issues”) and people-driven solutions.

² We refer here to the whole discussion in the Netherlands (starting in 2013) on Science in Transition see [18].
What, he said, is your solution for this European tsunami of research data that will start when we go for mandatory open access in an Internet of everything content and what about our privacy?

The Director General thought he cornered us here, but as I said—we had countless discussions in 2014–2015 on all these issues and thus we had an “answer” that we knew was supported by these scientists.

Indeed, his question of 2016 was extensively discussed earlier as part of our wide consultation in 2014–2015, with a group of scientists in a meeting in the Irish College in Leuven.

There the biological scientists presented their fears that GDPR would make their work impossible as data scientists and that European researchers should not be inspired, to bypass the restrictions of GDPR, to entrust all their data to foreign owned/registered data servers (already used by some research groups) to bypass European laws.

Therefore, we only could think of a solution as simple as complex: Europe should manage the data resulting from its public research system itself. A science cloud is what we needed, we concluded.

In my personal notes of these meetings, already in 2014 the idea was floated that European research needs its own cloud, as it would allow to guarantee GDPR compliance and at the same time offer all the advantages of DS to all without giving premium usage rights to non-European commercial third parties.

Our answer to DG’s question “what we should do” was therefore ready: we need a science cloud for the EU. And to my mild astonishment the DG agreed immediately, as he saw implementable action. It was noted down in the minutes of this meeting (I inserted European and open) and two years later EOSC was launched in Vienna.

What is not documented either is that we tested the EOSC idea a few weeks before this EC directors meeting, in a meeting with vice chancellors from the Conference of European Schools for Advanced Engineering Education and Research (CESAER)—the group of technical European Universities, where most are heavily devoted, by the nature of their portfolio, to DS. Being supported by this group of high-ranking specialists was one outcome of the meeting.

In this meeting we also got confirmation of what would become three guiding principles for our EOSC policy:

- Technically Europe is ready to make hic et nunc an EOSC on condition that it federates the existing infrastructures. This killed inter alia the idea that EOSC could only be a reality if a separate “institution” was built next to the Mosel in Luxemburg to cool the massive servers needed in such a centralized approach.

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* This idea was borrowed from telecom policy where “net neutrality” is a standard practice.

* This idea was floated for a while amongst some top key players.
- Hard to crack is the governance of such a distributed architecture and service and it can only be done if the interest of (European) science is seen first and foremost. In other words: EOSC should be driven by the end user; the scientist and not by the interests of the intermediaries.
- Therefore, key to a successful EOSC are not the pipes, but the software and the service principles.

So, what used to be a training ground for priests (the Irish college in Leuven), the rather boring meeting rooms near Square Orban (where DG RTD is hosted) and an obscure rented office space near Square de Meeus (where CAESER met) are the birth grounds of the EOSC idea.

But the “midwives” were the 100ds of scientists and science actors consulted along the way in 2014–2015 whose ideas on the future of European science were crystallized into a European policy.

Without these “midwives”—and the supportive Director General—we would never have been confident to defend—quite often or most of the time against several odds—EOSC. These “midwives” allowed us to say that EOSC was not an invention of some bureaucrats not knowing what to do, but responded to the desire of a large community about the future of European science (and not technologies).

That is why from then on we inserted in all our presentation a standard slide—showing the grand place of Brussels—with the message: EOSC: not a cloud invented in Brussels.

This started the second act of the Greek tragedy.

2. EOSC IS THERE TO STAY: THE CLIMAX

Though most of the specialists and key stakeholders supported the baseline that EOSC is a federated approach to European research data management in an area of data-driven science, a lot of scepticism with (quite a few) of the policymakers still needed to be faced.

One of the contradictions in science policy making—or technology policy for that matter—I witnessed in the 20 years I was at the EC is that it seems easier to get policy support for a huge and very expensive project which is at the same time tangible and can be drawn on the back of a business card, than to get support for a relatively modest and cheap venture like a software service in a distributed architecture where no billions of euros are needed to make it happen\footnote{I refer here to the ease with which billions are set aside for exascale HPC (High Performance Computing) where Europe doesn't even have a strong starting position to make it happen. Almost without discussing this got on the policy agenda. Explaining HPC is indeed a bit easier than EOSC as HPC is basically depictable as a big machine with a switch doing massive calculations at ground-breaking speed.}.

EOSC is not tangible as is an Airbus, or HPC or a bridge indeed and explaining a distributed architecture where data stay where they are produced and yet being inter-usable is not exactly a digital literacy skill one can expect broad audiences to have.
In other words—when defending the EOSC approach to non-specialists—by default the majority of policy makers—we became experts in inventing metaphors to explain EOSC nevertheless. Our preferred one was air traffic control. Like in EOSC, most countries have airports (data infrastructures), air companies (data handling services), pilots (data producers and handlers), but once a plane wants to take off (data traffic), we need to put in place standard procedures (FAIR) for take-off, being in the air and landing, certify staff to do it, etc. If not, air traffic would simply be impossible …

But one has to accept that in this, and the EC did also all it could to create confusion. When DG RTD launched the work on the Communication of 2016 on the European Science Cloud, which we right from the start only saw as a research data cloud, we were asked to join it up to the work DG CNECT (Directorate General for Communications Networks, Content and Technology) was then doing (on HPC). At the level of the services we never thought it that way—HPC and EOSC are mutually reinforcing each other, but not dependent—but since the instruction was given that, rightfully so, publishing two communications on adjacent subjects in the same time lapse is not showing good civil service practice, we made one document. That process in itself was an internal little Greek drama too and we needed 126 iterations of the initial document in order to get to a compromise all involved EC services could defend and accept.

This compromise text was quite understandably heavily criticized by the stakeholders for the confusion it created as it joined up two rather different technical projects. Using the metaphor of air traffic: DG RTD focused on the rules of the air traffic, whereas the HPC plans were on making a new Airbus.

Once this document was ready, by mid 2016, the climax of the Greek drama seemed to have reached: a solid policy document existed to kickstart EOSC (the Communication) and a stakeholder community was there to support it. This did not yet include operational details as will become clear later.

Many of us thought then: Let us just start doing it now. But we still had to face scepticism on the one hand but also deep and even unforeseen support on the other. The beginning of the anti-climax started here.

“Are you sure about how EOSC will work?” We were asked many times. Our answer was “no because if we were, we would probably leave the EC and start a science cloud company”. Or more elegantly: “why do we need policy (on anything) if we know the solution? We would just do it—right?”

Part of the lessons that can be drawn from this untold story is this: we learned in this little part of the real world (which science is after all) that policymakers are not per se risk averse but want to contain the risk as much as possible. Which means: the maximum risk a policy can take is what will work when extrapolating what exists. Hence the immanent view that indeed, Europe needs an EOSC and DS is going through a disruption, but isn’t it enough to frame all this in what already exists like research infrastructures and e-infrastructures?

What I am pointing at here is, what I perceive to be a key problem of European policy (member states (MSs) and EC): our policy makers do recognize disruption relatively quickly but are quite often only
prepared to tackle disruption via policies that guarantee continuity of business. And that is impossible—even a Greek writer cannot solve it.

Where we thought that with the Communication we could roll up our sleeves and start building EOSC, the contrary happened: The more visible support EOSC got, the more the wider European ICT community, heavily present in the Brussels Bubble, began to pull in the existing schemes as the solution for what was to come. And all these communities are extremely well connected.

But then we also got some unforeseen and very strong support (it is a Greek drama after all).

At one point in time, and tired of having to explain again that EOSC was not something we invented on a lazy afternoon not knowing what to do next, I consulted what the literature produced about Aechylos and the Greek writers and borrowed a trick from that other pillar of our thinking, the bible. In late 2016, with full support of the Director General, I asked three undisputed wise men in the world of European DS to come to Brussels to meet our top policy people and explain, behind closed doors, what their views on EOSC were and why we needed to follow the way forward described in the Communication of that year. What I had difficulty to do in countless meetings and presentations, a rector of a top technical university in the Netherlands, a head of the largest de facto existing scientific cloud in Europe/France and a computer specialist director of an application oriented German research institute, managed to clear in one hour: convince our top people that EOSC was needed. And that our proposal, a federated but distributed architecture focussing on services and software, was the European way to do it.

Unexpected support also because a group of very committed experts—the so called First High Level Group on EOSC—came up in 2016 with a deep analysis and the first integrated advice on how to implement EOSC [19]. In record time this group produced an extensive “business case” in favor of EOSC—“realizing the EOSC”—and thanks to their connections in parts of the world where similar initiatives were being discussed, made EOSC center-stage on the international policy scene. And in doing so, it made the digital Brussels Bubble realize that the rest of the world was closely following the work done on EOSC.

The Director General of RTD picked this up and wanted to break the vicious circle we were in by bringing together all the key European stakeholders and make them agree on the basic principles of EOSC by subscribing to a so-called Declaration of the doers.

Where we first thought this to be another time and energy consuming talking heads meeting, the bet of the Director General, who presided the whole day in 2017, and who went way out of his normal doing to push it through, worked out well. At the end of that consultation day and more or less gently forced by the Director General, close to 140 European players signed up to the EOSC principles and committed themselves to do part and parcel of it [20]. The preparation of this Declaration was made possible only through behind the scene work, which was at the origin of a small crisis with the central services of the Commission when put in front of a fait-accomplis. Another small drama within the main drama.

* Very quickly the Brussels work on EOSC got mentioned in international policymaking. It would require a different article, but it is fair to think that in this Europe has led the way.
And finally, not foreseen support came from the private sector. When the report of the High-Level Group on Sustainable Finance (HLEG) was in the making we already got strong signs that the private cloud players supported EOSC. Here Science Business joined the EOSC discussions from the cold with their excellent group on cloud systems where the private sector was participating in.

Puzzled why the Amazon’s of this world were so in support, I asked one of the leading persons here why they did. His answer was so simple and strong that we used it many times internally to highlight how the real world of DS was going.

If EOSC will exist, we were told by this high-ranking private player, the private players will be asked (via subcontracting) to supply capacity (hosting or services) as we are amongst the only ones able to provide it. So, that earns business for us. If EOSC on the other hand will not succeed, then all the work the EC and the EOSC supporters did will have raised the issue of DS and cloud in Europe to a prominent level and thus you would have done all our marketing!

So, by the middle of 2017, I thought we had it all under control as we secured top political support, top stakeholder backing and had produced key documents to mandate further work and that delivery was immanent.

Ready to roll up our sleeves … But that was the moment when Chapter 3 of the Greek drama started.

3. THE ANTI-CLIMAX

After the summer of 2017 and having a new director who immediately supported our work because he saw it as the way EC research policy should be made in general (using a co-creation and not a top down method), we thought indeed we could go full force ahead.

On a Friday afternoon of the summer of 2017, we sat together with this new director, and decided that, given we had large external support (the Declaration), the business case (the HLEG group report) and the internal mandate (the EC decisions), we could go ahead and launch a considerable tender to make EOSC kick start.

Why trying to go so fast? Anyone reading the specialized press knew that the giants of the Web started moving in our direction and we wanted to signal to the world: all well, but Europeans will handle it themselves, thank you.

So, the idea of that Friday afternoon was, let’s put all the foreseen resources in the EC’s work program on data infrastructures together and launch that tender. The reasoning being that a lot of what was thought to be important when the work program was written (which by default due to internal rules is at least 5 years before it becomes reality) would become obsolete once a fully functioning EOSC would be real. In other words: why still financing services if EOSC would do the job?

See [21] and subsequent reports on EOSC.
In doing so we would have been able to liberate 300 to 400 million for the tender. This was more or less the sum the high-level expert group did put forward too to make EOSC happen.

We saw it as seed money as we always had the view that EOSC was an implementation project and not a pre-competitive research project⁶.

So we proposed this “let’s launch a massive tender in a one shot” and let’s specify in that tender what EOSC has to deliver (this is now being defined by the EOSC Association).

On that Friday afternoon and backed up by one of our most experienced directors, we went home with a clear mind, a bright look on the future and a strong desire to drink a whole bottle of champagne to celebrate that there was light at the end of the tunnel.

The bottle got emptied, without light however as the tunnel was blown up in the meantime. A new tunnel had to be digged and we only got light at the end of this new attempt in Vienna—November 2018—when EOSC was formally launched under the Austrian Presidency. So the new attempt ended well, but not without some collateral damage or hangovers.

Indeed, in great Greek tragedy tradition, our proposal for one integrated tender did not get enough internal support because it implied we would have to rewrite work programs which were agreed on with basically all of the research infrastructures and e-Infrastructures that were also interested to play a role in EOSC. In fact, these parties did support the tender idea only if extra money was to be found; which de facto was impossible. And quite a few MSs rejected the tender idea too since the money they agreed on initially when the work program was written, would have been used to do something they did not agree years ago. Since EOSC was a novel concept, each MS feared that it would not be able to contribute sufficiently and get its fair share of the funding.

The first argument—not enough money—was easy to counter with the figure the HLEG produced and which assumed that Europe has more or less 10 billion euros per year being invested in data infrastructures of all kinds at MS level. Even if that figure would be 10 times lower, a simple reprioritization of existing funds is all what was needed.

The second argument, the lack of involvement of MSs, was partly right: we did all the talks needed at Working Party on Research level—a less formal and lower ranking meeting of research officials from MSs—but it was clearly not enough to take away the suspicion that EOSC was a sneaky plan to bypass them.

It never was such a sneaky plan. But it did mean that there was no causality to be assumed between having the buy-in of the key stakeholders for EOSC and having demonstrated the obvious benefits of EOSC for European science on the one hand and the buy in from the MS on the other hand. Hence from then on, it does not make any sense indeed to use research tools (which the Framework Program of research is) to start an operational implementation project like EOSC. Part of the untold story is this continuous tension between what is needed and where most agreed on and the way to get there.
on, a lot of energy was invested in talking to MS officials. Most probably, looking at it in retrospect, if this would have been done earlier and before the end of 2017, we might have gotten through with the idea of the tender. But here we simply lacked manpower and we were primarily obsessed in getting the end users on board, the scientists, that we thought the rest would follow *sui generis*.

A democracy is no technocracy and therefore it is fair to say that the single biggest mistake made, was not to pay enough attention to the MS in the preparation of the file. At the same time the EOSC friends and family in the stakeholder community convinced that year too some of the MS to go beyond criticizing and to make clear political statements in support to the work in Brussels. Indeed, politically the non-paper of two countries presented at the Competitiveness Council of 2017 on the importance of FAIR data and EOSC, generated a lot of positive fall-out. Probably this non-paper is to be seen as the political turning point in support of EOSC.

Being forced to walk another path, we used this genuine interest of the MSs to be on board of EOSC, to really get them into an active role using the mechanism of the staff working paper (SWD) mentioned above, where the basic roadmap for EOSC was outlined, which would then be endorsed by the council.

Getting this SWD agreed and getting the authorization to present it to the relevant Council Working Party, was again a mini-Greek drama in itself. It is common practice in Brussels that all the policy documents the services propose are checked by a separate service with respect to being fit for purpose and demonstrable. In other words, the whole carrousel of “do we really need EOSC? Are you sure? Can’t you demonstrate its impact” started again and led us to a point where I was afraid that it would all fall apart.

It is indeed quite difficult to do an impact assessment for something that does not exist nor ever existed before.

Due to all these activities which happened over the summer of 2017 we only got the green light to present our Staff Working Document to a critical MS meeting under the Bulgarian EU Presidency (first half of 2018), when boarding the plane to Sofia. Without that green light, we would have arrived in Sofia with empty hands and we would never have met the strict deadlines EC policy making imposes.

Here again, like under the Dutch Presidency, we could count on the immense support of the Bulgarian colleagues who happened to be the same persons in the various official meetings before. They took a big risk in convening that meeting because only on our way to Sofia we got clearance from Brussels that we could discuss the topic this meeting was convened for.

But again, in doing so we got more and more MS on board and as this political commitment complemented the declaration (“coalition of the doers”) of the scientific stakeholders of 2017, it allowed us to state by mid-2018 that the whole of Europe wants EOSC and agrees on what it should deliver and how to get there.

So, we slowly moved into a catharsis in 2018.

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*See [22]. It was not surprising that this non-paper was written by the two countries that later kickstarted the GO FAIR initiative.*
4. CATHARSIS

EOSC was launched at the end of 2018—again the visionary and very committed staff of the Austrian Presidency in this case did miracles and took risks as until the month before the summit in Vienna took place we were not able to say we had the green light.

The governance structure which was announced at that moment is not a masterpiece of clarity or efficiency. Indeed mixing an expert group (to act as an Executive Board) with a Working Group of the Horizon 2020 Program Committee (to act as a Governance Board) and a call in the WP to support the management of the EOSC governance structure to be created, is probably unique and a bit Kafka-ian as there is no overall liability nor accountability in what was set up.

But it was the best offer that the EC in those days could make.

Despite the drama, Europe only needed 4 years to make a grand idea from scratch into a reality launched in 2018.

That the launch got accelerated in 2018 is no coincidence. That year the EOSC idea got indeed the “oracle of Delphi” type of unexpected, unplanned but highly convincing support from a series of data mis-use scandals like the Cambridge Analytica one that helped manipulating US and other elections.

These scandals in data management as well as the aggressive way with which big non-European data players moved in (Ali Baba opening massive support centres in Frankfurt, Google launching a search engine for OD etc.), may have acted, in the best Greek tradition, as wake up calls and they made European decision makers realise that Europe needed to manage its data on its own terms. And it is what made these decision makers finally understand that data is not neutral and are more than a series of I/O’s.

2018 therefore was the year of the catharsis: our user communities and our decision makers understood that EOSC—in whatever form it will take shape—was needed to make sure our research data commons is preserved in a way Europe needs and wants.

It is very encouraging to note that very soon after taking office the new president Von der Leyen and her Commission, explicitly referred to EOSC in particular and data sovereignty in general as key policy goals of her mandate. And this in front of the Davos audience by the way [23].

So—is the drama over and will EOSC come out of the drama as the glorifying Greek general coming back from long and remote battles to rest in Athens and see that life is good? Or will it be punished like Prometeus for having brought the light (it was fire) to DS in Europe?

It depends. The track record of good European (high tech) ideas going nowhere because once a good idea is launched, making it a reality is obstructed by discussions on process, aggregation of particular interests, territorial fights, etc., is larger than its success record. Democracy and inclusiveness come with a rightful price to be paid, but it should not be at the cost of immobilism or non-delivery by watering it down.
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The worst thing, policy wise, that can happen to EOSC now is to over-promise what EOSC can and will do to keep everyone happy: from inclusion of the digital laggards in all corners of Europe, to addressing the innovation deficit of Europe, over trying to create an exascale computer industry. All these three problems are real issues, but they require distinct solutions and not one-size-fit-all approaches.

Making EOSC work for research data and the science eco system as soon as possible is already in itself a huge challenge and in making it happen it can provide lessons for huge data projects like GAIA-X. Indeed, to a very large degree the rationale (distributed federation) and political views (manage our own data ourselves) of the latter is similar to what the DS community articulated as views and ambitions in 2015/6 for data driven science. The way EOSC was designed can therefore be instructive for the much broader and very legitimate ambitions of GAIA-X. In fact, EOSC could be the first low hanging fruit of GAIA-X…

On the other hand, what was still a rather exotic topic five years ago (the shift to OS) is now widely accepted.

And the basis of data-driven OS is reproducibility; as open as possible or as closed as necessary. So whatever happens with or to EOSC, the science eco system will go to FAIR data and services anyhow.

The need for an EOSC type of “traffic control” is no longer the question. The question is, in view of what commercial cloud providers can offer the science community already today, if it will be an EOSC managed for the common European good or not.

If the knowledge-driven economy is the economy of the future, then data are its main resource and DS the way to mine new ideas and foster innovation.

EOSC is then the guarantee that, this time, we will mine our data ourselves, create our own champions whilst at the same time respecting the key values Europeans cherish and should defend.

And the EOSC Association will be the best choir of the Greek drama to guide this process.

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