Sustained Community Building after 2023 (D4.11 – SGA3)

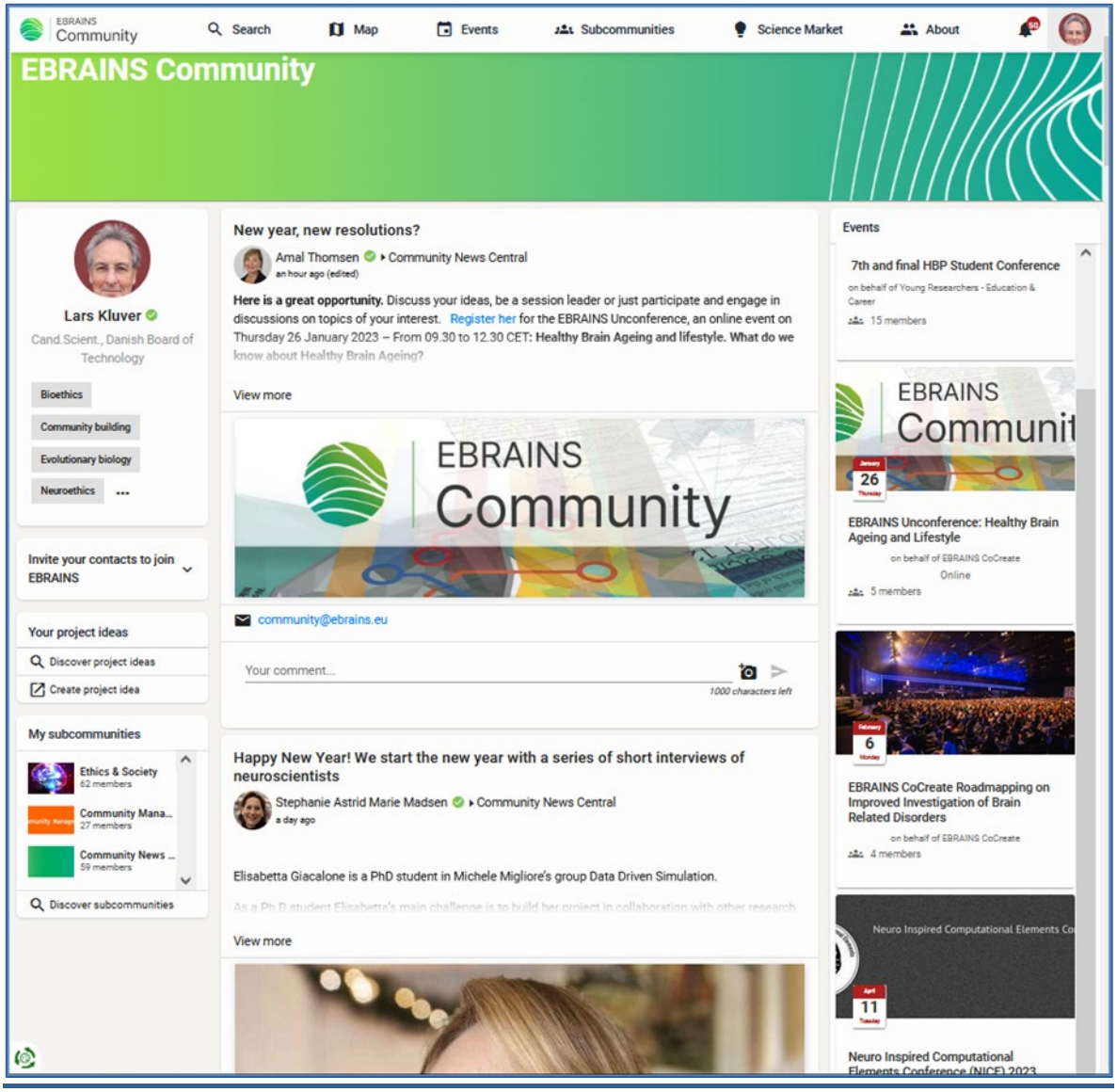

Figure 1: The EBRAINS Community Space https://community.ebrains.eu

The Community Space is the online platform for the EBRAINS Community that provides users with subcommunities, a personal profile, community events, forums, member search and invitation functions, a Science Market, statistics, and more. It represents the third possible approach for the future EBRAINS community described in this report.

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Description in GA:	Status of efforts and plan for sustained Community Building after end of HBP
Abstract:	The report describes the history and status of community building, which began in HBP SGA3 and that by the end of 2022 has established a community with more than 700 members. The post-HBP strategic choices for EBRAINS are analysed by three scenarios reflecting three levels of community maturity and ambitions: 1) Users provided with dashboard options for online forum communication; 2) A community platform provides one entrance to forums; 3) Subcommunities are core actions centres for community members. All scenarios are feasible technically and economically. However, from a strategic point of view, Scenario 3 fits the nature of EBRAINS best, as it opens for a highly mature collaborative and networked community, in which a diversity of members takes co-responsibility for self-organising in subcommunities according to their interests.
Keywords:	EBRAINS Community; Community Building; Community Platform; User Engagement
Target Users/Readers:	EBRAINS AISBL organisation; Community builders; EBRAINS users; Scientific communities and associations; HBP Consortium members

Table of Contents

Table of Figures

1. Introduction

This report provides background considerations for future decisions about the community building strategy after the end of the Human Brain Project (HBP).

The background for the report is two years of experience in the HBP (period SGA3) during which a strategy for community building was developed and implemented, including choice and configuration of an online 'Community Space' (see Figure 1), and populating it with subcommunities, events, project ideas and users. These experiences have been harvested in collaboration with community builders from all WPs in HBP SGA3 and with core WPs and Tasks with complementing responsibilities, especially Communication (WP8), High Level Support Team (WP4), the Education Team (WP8), and the Innovation Team (WP8).

The future development and sustainability of the established community depends on strategy considerations, the available resources, and prioritisations in EBRAINS AISBL. This report, having been written as a Human Brain Project Deliverable, is an input to the strategic considerations in EBRAINS AISBL and among its stakeholders. The report exclusively reflects the analysis from the HBP SGA3 community building Task T4.14 and does not represent an official view from HBP governance or the EBRAINS AISBL organisation. It solely reflects the analysis from the community building Task. It has been the intention to write a report, which compares the range of possible strategic scenarios, thereby helping EBRAINS AISBL decide on its future community solution.

The report rests on the knowledge of the HBP SGA3 T4.14 team, acquired from[1], a) having scanned the market for online community building platforms and executed a procurement for the EBRAINS Community Space, b) having configurated the winning platform for specific use in HBP/EBRAINS, c) leading the more than 12 community builders in the HBP, including having platform and functionality feedback, and monthly community builder sessions, and d) having been the central actor in establishing from the ground a Danish subcommunity and National Node to EBRAINS. Altogether, these experiences provided an overview of the challenges and options for developing a common meeting place – a community - for a highly diverse target group spanning many disciplines and fields, ranging from biochemistry to neuroimaging, ethics and new computing principles; users and developers of a wide array of tools and processes; stakeholders in education, science, health care, industry, authorities, ethics, polities covering the whole value chain, including basic science, strategic research, innovation, clinical practices, drug development and sociopsychological and health policies.

2. Summary

Building the EBRAINS community began under the SGA3 (Specific Grant Agreement 3) of the Human Brain Project (HBP), with a pre-analysis of community strategy at the end of SGA2. The analysis pointed to the need for an inclusive and collaborative community that should be highly interdisciplinary and include stakeholders and end-users of innovations. The vision of the EBRAINS Community rested on 6 key values that would make it: open, inclusive, collaborative, member-driven, self-organising, for the benefit of society and responsible.

A procurement for a community platform was carried out with a view to a flexible subcommunity structure that could group the community members according to their interests and the EBRAINS services they were engaged in. The existing platform includes i) functions for member profiles, including integration with online scientific publication platforms based on science ID, ii) subcommunities (three levels of openness - open / public / private) with their respective forums, iii) events (subcommunity linked/global), iv) science market (project ideas; options for project presentations and posters; option for job opportunities advertising), v) community newsletter vi)

[1] Besides these experiences related to the EBRAINS Community, the Task Leader, who is from The Danish Board of Technology (FT P19), has more than 30 years of experience with multi-actor engagement facilitating collaboration processes, and 15 years as the main network manager in the European Parliamentary Technology Assessment Network EPTA

admin and statistics, vii) EBRAINS integrated sign-on. Later user feedback has revealed a wish for adding a global and flexible forum function.

The EBRAINS Community was ready for internal HBP launch in September 2020 and an open launch in October 2020. As this report is being prepared the community includes more than 800 members, 2/3 of these being non-HBP participants.

The post-HBP strategy can take three directions described in this report by three scenarios:

1) Users provided with dashboard options for online communication
2) A community platform provides one entrance to forums
3) Subcommunities are core actions centres for community members

The first scenario provides basic communication/chat tools integrated in a future 'user dashboard'. Such a community is an *emergent community* that serves its members as 'users' and is mainly centrally led and designed. User-to-user help is a key aim.

The second scenario is based on a full-fledged forum platform – either established in the EBRAINS infrastructure or by making use of an external commercial Software as a Service (SaaS) forum service. This is a *community* as it is known from, e.g., software providers' B2B 'customer' communities. The forum structure is open and flexible, and the discussions are supported by moderators and/or technical staff that provide guidance and facilitate discussion. A sense of community membership and engagement is enabled.

The third scenario is a continuation and further development of the existing community with addition of flexible chat functions. This opens for a development towards a *networked community* of high maturity, in which a diversity of 'collaborators' takes initiatives, group around common interests, and self-organise community activities and collaborations.

The three scenarios represent three levels of community maturity, thereby reflecting three levels of strategic ambitions. From rather simple user-to-user communication, over an open and moderated forum, to a bottom-up engaged collaborative community.

The three scenarios are analysed in this report. All are technically and economically feasible. Strategically, however, the complexity of the distributed EBRAINS infrastructure, the diversity of its users, the wide range of their goals and aims, and securing continuity of the community building in SGA3, points to Scenario 3 as being the best for EBRAINS – a collaborative, inclusive and networked community, arranged around subcommunities.

3. EBRAINS Community Building in HBP SGA3

The structured community building efforts of HBP began in SGA3. The vision was to create an inclusive and collaborative community environment in which scientists, clinicians, and industry, as well as civil society and patient organisations, authorities and funders could co-develop science and innovation based on EBRAINS and contribute to the development of EBRAINS. The reasoning was that this variety of actors together would have options to define, support and realise societally beneficial research that makes use of EBRAINS and that would be brought together into dialogue and collaboration. This would have to be done in an EBRAINS Community since none of the existing science communities seemed to be able to embrace the highly multi-disciplinary bottom-up approach that EBRAINS is highly suited for and needs. EBRAINS would have to gather its own environment of collaboration around it.

After decisions on establishing community building a few preparation activities were made in SGA2. A multi-actor workshop (December 2019) was held to learn about the reception of the community vision among scientists, industry, and patient organisations, resulting in strong backup among the participants. The work of defining a strategy for community building was also initiated late in SGA2.

Community building in SGA3 has been implemented in the following steps

1) Establishing collaboration with community builders in the HBP – in the services and in WP1, WP2, WP3, WP8, and WP9

2) Creating a strategy that would build up an inclusive and collaborative community
3) Establishing an online 'community space' to support the community processes
4) Onboarding HPB participants
5) Refining community platform according to their feedback
6) Establishing subcommunities for the EBRAINS Services
7) Opening for all actors to subscribe to the community
8) Creating awareness around and advertising the community through e.g. events, The HBP and EBRAINS Newsletters, EITN and HBP Education activities, and HBP Partners
9) Establishing community engagement central activities, such as CoCreate and unconferences
10) Launching a call for community events for bottom-up activities
11) Establishing bottom-up thematic subcommunities and national subcommunities
12) Elaborating a strategy analysis deliverable for the EBRAINS Community post-HBP

The status on execution at the time of writing is that points 1-6 have been executed and points 7-12 are active and execution will finish towards September 2023. The community had by the end of 2022 708 members, of which 1/3 are participants in the HBP. The growth rate is 2-3 members/day. The community is dominated by neuro- and IT scientists. A focus for the rest of HBP will be to widen the disciplinary scope to include a larger and more diverse range of stakeholders (see points 8-10 above), and to increase the community member subscriptions. This can, depending on the decided community type, be achieved by a combination of activities:

1) Implementing an opt-out community membership for all 5,000+ registered EBRAINS users. Besides engaging a large number of users in the community, this would open up for direct communication to all registered users through the Community News function.
2) Going further down that road EBRAINS could decide to have the community service alongside the other services, meaning that EBRAINS registration would give access to the community functions for all users, or to restrict the range of services open for non-registered users.
3) Opening the option for each of the EBRAINS National Nodes to establish national subcommunities, which would provide a direct communication towards national users, besides providing more insight into the EBRAINS offer and expanding their network through the EBRAINS Community. Likewise, national/regional subcommunities would be opened for geographic areas that have not established National Nodes, to encourage their development towards becoming National Nodes.
4) Accommodated to the chosen strategy, community building, user onboarding and user engagement will continue until the end of HBP SGA3 (September 2023), and by the EBRAINS organisation and its projects. Such activities during the HBP would include:
    a) Awareness raising towards potential new users and community members. Onboarding of non-HBP members in close collaboration with the EBRAINS Communications and marketing team through EBRAINS/HBP channels, HBP-associated channels and using the network of Partners (SGA3 WP8 and T4.14 activities).
    b) Focus on establishing bottom-up thematic subcommunities initiated by members of the EBRAINS Community, HBP-associated Partners and other interested parties (T4.14)
    c) Targeted community onboarding at events, conferences etc. (mainly SGA3 T4.14). Hereby engaging partners and collaborators in recruiting new members by sharing flyers, presentations, etc., when hosting or participating in events and/or conferences.
    d) Community activities, such as, but not limited to i) EBRAINS CoCreate science roadmapping (SGA3 T4.14); ii) EBRAINS Community unconferences (SGA3 T4.14); iii) EBRAINS Community events calls (SGA3 T4.14) leading to more user-initiated activities and events associated with the EBRAINS Community; iv) HBP- and user-initiated events; v) EBRAINS National Nodes activities.

Lessons learned

The HBP SGA3 community building activities have mostly been developed during the COVID-19 pandemic, which forced a shift towards online activities, putting the online platform at the centre of the community building. The online-only communication in communities is known to be weaker than a mix between face-to-face activities and online functions. This in effect means that a higher critical mass of the community will be needed for having a lively communication if the community is online-only. During the short period in which the community builders have been able to organise or participate in physical events this has led to greater uptake of the EBRAINS-focused community. In-person meetings are vital in community building and those having participated in such community activities have to a large extent joined the community and seem to be more active.

User interviews have revealed that thematic communities (subcommunities around scientific themes) are more attractive as communication nodes for the scientists than the service subcommunities (subcommunities around the service categories delivered in the EBRAINS infrastructure). The role of the service subcommunities was to start up the EBRAINS Community with persons deeply involved in building EBRAINS. There were, thus, good reasons for initiating the community with the service subcommunities, and in the future these can play an important role for support and user-to-user help connected to each of the EBRAINS services. However, in hindsight, it would have been beneficial to open more thematic communities at an early stage to provide spaces for scientific exchanges without attaching these to specific services. This is a focus point for the rest of the HBP.

The number of memberships has not yet reached the critical mass for the community to be self-relying and to have an active internal communication. This report suggests actions that can lead to sustained growth. One is to ensure that thematic subcommunities are established, because they have a more bottom-up profile than the existing technical service subcommunities, which make them attractive to members that want to communicate with other members about their scientific interests (not encapsulated by specific services). Thematic subcommunities thereby can establish a bridge between established thematic scientific communities, in e.g. European and international associations, into the EBRAINS sphere. The other is to ensure that EBRAINS National Nodes make use of the EBRAINS Community to establish and manage national subcommunities. These two factors are expected to increase the growth rate of the EBRAINS community.

The growth rate of the community was slow in the beginning but has now reached an average of 2-3 new members per day. The community platform was made available from the EBRAINS portal by March 2022, it became a regular part of the HBP/EBRAINS newsletters by August 2022, leading to sustained increased growth since then. Greater exposure has especially been effective to attract non-HBP users. There are still options for increased visibility on the portal by e.g. providing the community as a service side-by-side of the other services. Community growth is very dependent on visibility and promotion via all available communication channels.

An important future consideration that can have a strong positive impact on the growth rate of the community derives from the fact that EBRAINS makes many services available for non-registered users. In addition, registered users are not by default included into the Community Space. The impact of this is that the offers of closer collaboration and user-to-user communication are not made apparent to all users. Or, phrased differently, that there is a separation between the concept of a user and of a community member. This results in a loss of awareness among several thousand users of the benefits being part of a community can bring, directly for the users and indirectly for their colleagues and networks. Changes of login policies could ensure that users become registered and automatically thereby become users of the ‘Community Service’ – and of the full range of other services.

Building a community demands patience and continuity. This is not a new lesson, but a well-known professional community builder experience. As described above, the EBRAINS Community Space has been open for one and a half years and has been a visible offer for non-HBP users for less than 10 months. In that light it is too early to draw conclusions about the efficiency of the strategy that has been followed. Neuroscientists make use of a range of social platforms and have done that for many years, and it is relevant to judge if EBRAINS-relevant discussions there could over time be moved to the EBRAINS Community instead. It would improve the communication on the use of EBRAINS for all users. The lessons to draw from such consideration are that a) it is wise to hold to one platform for

a very long time, and b) that the form of communication that social/chat platforms bring should be included in the offers that the EBRAINS Community Space provides. Then time should be given to allow the community to develop and mature.

4. Three scenarios for post-HBP community

The post-HBP community will have to fit the overall strategy for EBRAINS and as part of that will have to be realistic in terms of investments, running costs, and demanded available personnel.

To allow for a comparison, the following three scenarios represent different visions and ambitions for the continued community, all of can be maintained with modest costs and staff demands. The main difference between these options is the level of ambition regarding if/how identity, ownership, interactivity, engagement, and bottom-up initiatives is facilitated by the community, that is, the final community maturity and the user engagement level.

The third scenario represents the existing solution, based on a commercial community platform, which is seen as the maximal solution of relevance. The two first solutions, thus, represent simplifications in terms of ambitions and the underlying technical systems.

4.1 Scenario 1: Users provided with dashboard options for online communication

The user dashboard is being developed to be the key access point for the users to any service – including user communication. When users sign up to EBRAINS they establish a profile on their dashboard, and they have access to one or more forums/chats with several threads. The envisaged user is, thus, an active user of the RI services. Threads are searchable so that for example question-answer threads can be found. The main identity that the user obtains is that of 'EBRAINS user'. Technically there would be a shift away from the existing Community Space to an integration of open-source elements into the dashboard.

4.2 Scenario 2: A community platform provides one entrance to forums

Users are provided with an integrated platform that gives access to, for example, a structured set of forums and user profiles. They will access the platform from the dashboard, be redirected to the platform and use the functions from there, though some functions may be embedded in frames in the dashboard. Typically, the platform user will also be an EBRAINS user. However, because it is a platform on its own right it may be populated with some profiles that want to take part in forums though they are not users of EBRAINS. A certain sense of identity resulting from being part of an 'EBRAINS user environment' will develop. Forums are well structured, giving options for users developing threads at their own will. Technically this scenario would be a shift from the existing Community Space to a new platform – commercial or free open source.

4.3 Scenario 3: Subcommunities are core action centres for community members

Users are served with a community platform, in which their interests are organised as subcommunities providing each a forum, events overview and management functions. The subcommunities can attract EBRAINS users and other profiles sharing interest in a subcommunity theme – e.g. a science theme or development of an innovation. Users access the community either through their dashboard or directly as the EBRAINS service community.ebrains.eu. The dashboard communicates with the platform on choice of the user – e.g. through frames giving information of

events filtered according to stated interests of the user, or overview of activity in subcommunities that the user is a member of. The user has an identity as being a 'collaborator in an EBRAINS Community' and an actor in a number of subcommunities. Technically it would be a continuation of the existing Community Space with integration with the user dashboard, and optionally with integration to an open forum/chat structure as described in Scenario 2.

5. Three levels of what a community can be

The three scenarios represent three substantially different approaches to community building, with different weight on sense of ownership, the value of bottom-up and user-driven engagement, the potential role of the community in the EBRAINS structure, and the role of users – are they *users*, *customers*, or *collaborators*?

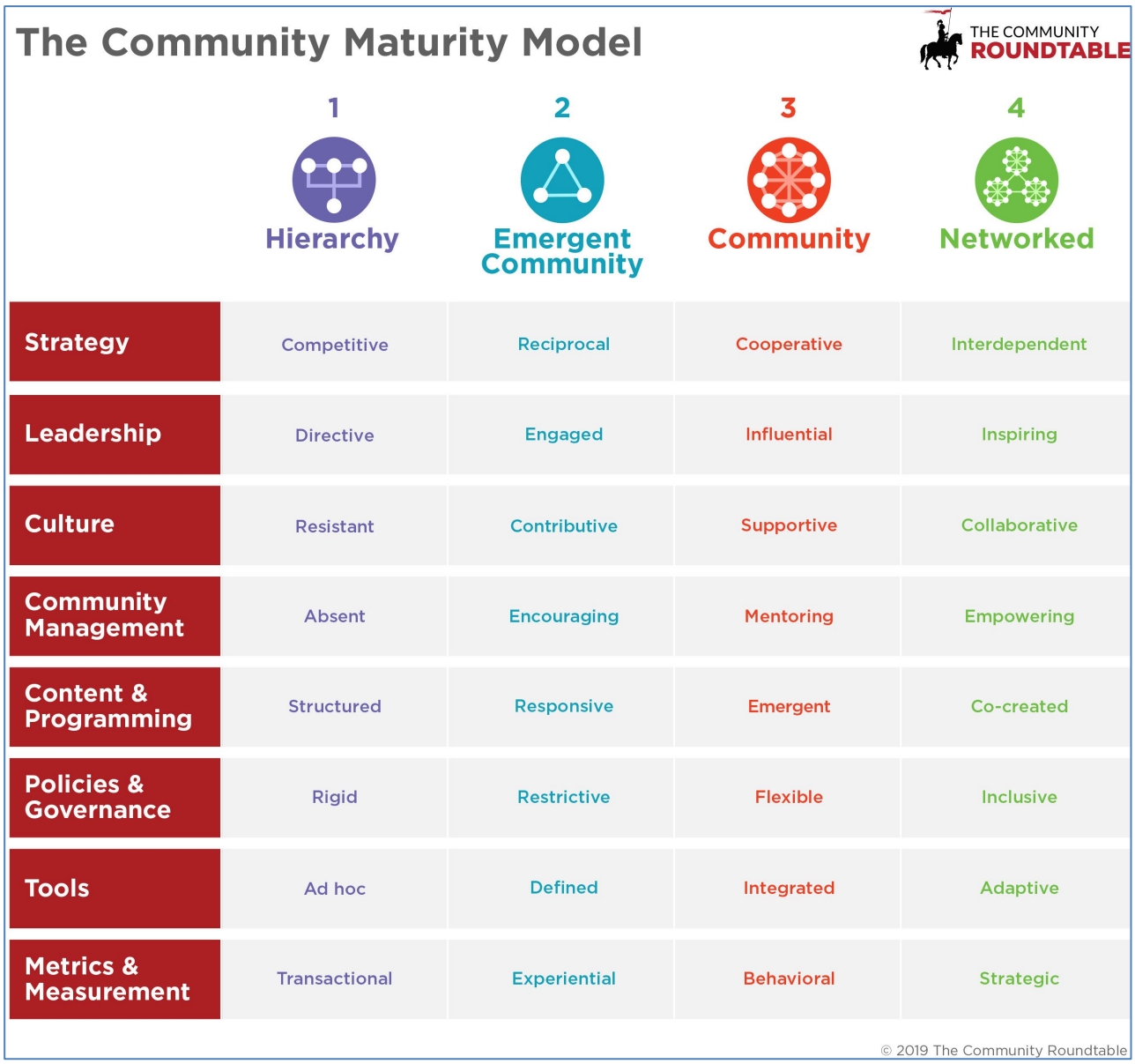

Figure 2: The Community Maturity Model

The difference is clearly organised in the *community maturity model* (see Figure 2) of The Community Roundtable[2] – a think-tank with a large network of community builders from a variety of communities.

[2] We thank The Community Roundtable for allowing us to publish The Community Maturity Model

The model sketches four levels of maturity, each of which can be seen as an end stage or as a transition stage towards a fully matured networked community.

Roughly speaking, these levels compare with the scenarios as follows:

- Level 1 is where HBP was before a decision of creating a community building task in SGA3 was made.
- Level 2 is the level one can expect from Scenario 1.
- Level 3 represents a somewhat higher maturity level than can be reached with Scenario 2.
- Level 4 is what Scenario 3 can lead to.

In HBP SGA3, the community building team has stated the ambition of bringing the community as close to or beyond level 3 as possible, with a longer-term ambition of reaching level 4 after the HBP. At the moment of writing – February 2023 – there are indications that the EBRAINS Community have reached at least level 2:

1) The cooperative strategy has shown its value in activities such as CoCreate (participatory science roadmap development) and community unconferences.
2) The leadership of the HBP has increasingly supported the idea of a community around EBRAINS.
3) The HBP and the move towards EBRAINS has gathered the actors in a contributive culture, and a user-to-user supportive culture is developing.
4) Community management now has a clear profile, is visible at HBP events, and encourages community members to create activity, take active part, and invite their colleagues to the community.
5) The community builders are involved in programming and an open call for community activities has been launched, financing costs for events.
6) Community governance is highly inclusive giving the subcommunities freedom for managing themselves as they wish.
7) The EBRAINS tools and the Community Space as a tool are integrated into the EBRAINS platform, and user requests have resulted in adaptations to the Community Space.
8) Metrics are both experiential (user interviews, discussions among community builders, etc.) and strategic (statistics module of Community Space measures activity on subcommunity level, membership growth/time, etc.).

Scenario 1 puts emphasis on *users* of tools and services. Little interaction between them is expected, but fundamental functions, such a presenting their profiles to each other and providing options of online communication are provided. This is typically what small organisations serve their members by setting up Slack channels, LinkedIn/Facebook pages etc. Because of this, Scenario 1 must be expected to get competition from social media – including the social media channels of EBRAINS itself – that can provide the same level of service.

Scenario 2 provides the same, however more integrated, services as Scenario 1 but sees the users as *customers*. Large online software developers establish such wide arrays of forum threads, in which the customers help each other using the software, and the company provides staff that regularly visit the threads and answer questions. These platforms are often flexible by letting users establish new threads, and they typically have an advanced search function, which makes it possible to find previous answers to the problem you as a costumer are having.

Scenario 3 provides the same functions as Scenario 2 but is arranged around subcommunities. An important difference to the thread-based Scenario 2 is that the subcommunities in themselves have an identity and in totality can organise the wide variety of interests of the users. These are in this scenario encouraged towards becoming *collaborators* in the sense that they have certain goals in common (not just a certain software) and the (sub)community provides the environment that can make them join forces.

The choice between the three scenarios obviously involves questions about yearly economy, required initial and long-term investment in staff, available community builder skills etc. A comparison of

these aspects is presented in the following chapter. However, the most important choice is a strategical one, which determines how deeply the users should get involved in the vision, the use and further development of the EBRAINS infrastructure. A strategic choice, for which the maturity model is a helpful tool, and which is discussed later in this report.

6. Comparing characteristics of the three scenarios

The three scenarios differ in many ways, ranging from investment demands and running costs to the level of community maturity they can reach. We provide here an analysis of the three scenarios based on the most important parameters.

6.1 Platform solutions

1) Fundamental dashboard services
   a) Functions: fundamental open-source functions inside the user dashboard:

      Option to create a searchable user profile

      Access to forums/channels to follow

   b) Later development: functions can grow over time, depending on available funding

      They will be loosely coupled

      Or they will grow to become Scenarios 2 or 3, but at a higher cost

   c) Access from dashboard: the functions are implemented as part of the dashboard or via links/frames/widgets to external platform
   d) Subcommunities: no subcommunity functions
   e) Activities: events function will probably not be integrated with or filtered by user interests
   f) Communication with community: as this is integrated in the dashboard it should be possible to directly communicate with all registered users
   g) Advantages: simple implementation; can be implemented in SGA3
   h) Disadvantages: no community feel and identity; no member-driven activities; not a communication means towards users; difficult and expensive to integrate functions meaningfully at a later point; transfer of data from existing platform not meaningful; users will have to re-create their profiles; risk of time lag between closure of existing platform and opening of new functions
2) Forum-based community platform embedded into dashboard:
   a) Functions: rather fundamental, flexible forum/chat platform integrated into or outside the EBRAINS domain. Inside the domain it could be the existing EBRAINS hosted rocket.chat at chat.ebrains.eu[3] or an open-source forum platform. Externally it could be a commercial forum/chat platform

      Option to create a searchable user profile

      List of forums/channels to follow, contribute to and cocreate

   b) Later development

      Functions for, e.g., rocket.chat can grow over time by adding plugins or configure its full functionality. Potentially, since it is an open-source platform, coding directly in the platform will be possible

[3] Use of chat.ebrains.eu requires an EBRAINS account

Using an external platform the users can exploit the many advanced features of such platforms, but EBRAINS cannot develop the platform as such

c) Access from dashboard: the platform can be reached from the dashboard and elements of the platform can be inserted into frames/widgets of the dashboard. That can be done on an internal as well as external platform via an API

d) Subcommunities: there are no subcommunity solutions in this kind of platforms

e) Activities: no specific events function; users can advertise events in the forums/channels by linking to websites, registration pages etc.

f) Communication with community

With an internal platform it should be possible to post all users.

With an external forum/chat platform, the registered users and the platform users will have a certain overlap only. The platform will, thus, not provide a communication channel to all users

g) Advantages: less complex technical implementation than Scenario 1; a vague sense of community identity. An internal chat platform solution is already implemented

h) Disadvantages: probably not possible to transfer data from existing platform; users would have to establish their profiles again; not probable that a platform and its integration into a user dashboard will be implemented before end of SGA3

3) Continue with existing community platform:

a) Functions already available and have been designed for EBRAINS

Single sign-on with EBRAINS, allowing for sign-up for community only.

Searchable advanced user profile with academic ID.

Subcommunities at core - national, thematic, service-based - open/public/private/hidden

Forum for each subcommunity

Events posting function

Science market for project descriptions, ideas etc.

Chat function for direct messaging 1:1 between members

Easy 'invite members' to join

Notification function

Back-end statistics module

b) Later development

Functions can grow when investment is possible (pay coder per hour); provider has a continuous development plan that comes for free paid for by the license; provider develops the plan in dialogue with the customers

Option of buying source code and run the platform on own Google installation is possible, opening for own coding

c) Access from dashboard: the platform can be reached from the dashboard and elements of the platform can be inserted in links/frames/widgets of the dashboard. The community can be opened as a service in its own right at community.ebrains.eu (relevant for stakeholders and other non-EBRAINS-users)

d) Subcommunities: are core for the structure of the platform; searchable; open/public/private/hidden subcommunity formats; subcommunities can have their own administrators and moderators; integration with Collab subcommunity drives

e) Activities

Events advertisement integrated

Users can create events, which can be seen on an Events page on the web portal and advertised in the forums

Events can be inside subcommunities or global

Events can be shown elsewhere on EBRAINS portal in frames

Science market: supporting collaboration and co-creation among members with a dedicated space for new ideas and initiatives

Time-limited subcommunities can host activities, such as working groups, committees, internal projects, etc.

f) Communication with community

Function for posting to all community members exists

Making community membership mandatory for all registered users would allow for using this function to communicate to all users and non-user community members

g) Advantages: it exists and is functioning; no costs of transfer to new solution; community identity established; designed for EBRAINS purpose and user heterogeneity; contractual option to take over installation if provider closes, and for extracting data

h) Disadvantages: lock-in to provider (though option of buying the source code and establish own server exists); demands a community manager to run the platform; development costs for new functions if needed are higher than the costs of in-house coders

6.2 The role of chat.ebrains.eu

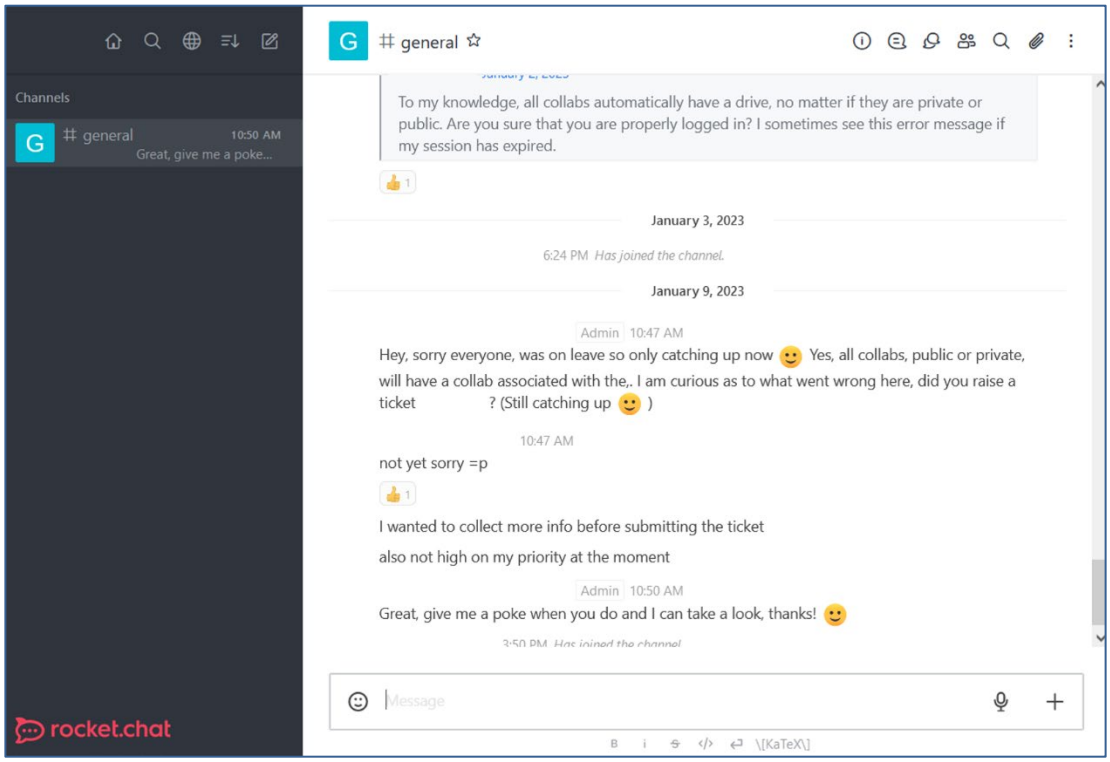

Figure 3: The existing rocket.chat at chat.ebrains.eu

As mentioned above, EBRAINS already has an installation of the open-source chat platform rocket.chat. It is less advanced than some commercial chat platforms, but it has a wide range of optional plugins that can increase its functionalities. The existing installation only implies cost for server runtime, which makes it an obvious choice for an integrated chat service.

chat.ebrains.eu now demands an EBRAINS login, which means that community members that are not EBRAINS users cannot make use of it. Making use of it as community chat would therefore demand a change in the login process, or better, that a) all EBRAINS users automatically became community members, and b) that chat.ebrains.eu also will be set to accept community login. The following analysis of the role of the rocket.chat installation takes these login changes for granted – if they are not implemented, some users will have to work with several logins to reach all functions.

- Scenario 1 can make use of rocket.chat to cover the needs for user-to-user communication. Since the scenario involves very low or no investments in community building and moderation, the chat platform would be expected to be used with few channels and little oversight.
- Scenario 2 can in principle make use of chat.ebrains.eu as a 'small implementation' of a forum platform. This would demand a top-down implementation of a channel structure and organised moderation or community building for each channel. In practice the 'forum' can be implemented as a simple link from the user dashboard, maybe with an added widget/frame linking directly to the channels.
- Scenario 3 in combination with chat.ebrains.eu provides a good combination of the advantages of a subcommunity structure with the advantages of an open chat platform. The chat can, depending on ambitions, be integrated at different depths. The simplest integration would be a new menu point in the Community Space opening a new window with the chat, and a deeper integration could be established with a widget opening chat channels. The work split between the subcommunity forums, and the chat would be in depth and focus of posts – the chat being a day-to-day loosely organised communication, when needed with links drawing on more in-depth posts and support answers in the moderated subcommunity forums.

6.3 Community builder skills

All scenarios need one or more community builders who know the chosen community function/platform, how this is managed, and who can help users onboard.

- Scenario 1 is not really a community and thus does not need regular management, but probably a helpdesk, and help with onboarding. Community builder skills would be required during the establishment of the functions, but the clear profile of this scenario is that community building is passive or not existing.
- Scenario 2 demands high skills in configuring an actual forums platform from the ground, based on the platform elements provided. However, setting up the rocket.chat with a structure of channels is a rather modest task. For any such platform, continuous moderation, a certain engagement from supporters and cleaning up overlaps of threads etc. would be needed.
- Scenario 3 demands continuity in platform management, but no configuration skills since the platform already has been configured and tested. Thread structure and moderation is delegated to the subcommunity owners. Each of the service subcommunities have a forum, which is the place for supporters to provide answers and point users towards documentation and resources.

6.4 Community identity

The scenarios are very different regarding how much identity, collaboration, and ownership they facilitate – that is, how high a community maturity level they can support.

- *Scenario 1* will not create a community feeling, but rather appear as a set of functions that makes it possible to discuss or put questions to other users. Identity as *user*.
- Scenario 2 can (only internal platform) provide a visual community identity. A high-level experience of user-to-user support will be established. It will not provide a co-ownership feeling towards EBRAINS. Identity as *customer*.
- Scenario 3 has subcommunity functions that are designed to foster a sense of community identity, ownership, and collaboration along. The thematic, service and national subcommunities bring

users together, which share certain goals and thus are prone to develop collaborations towards reaching their goals. User-to-user support can be established in the service-based subcommunities and in the existing chat.ebrains.eu. Identity as *collaborator*.

6.5 Management and moderation

All three scenarios will demand a certain level of forum moderation if high discussion ethics are to be kept and responses to questions should happen.

- Scenario 1 is probably best suited to rather passive management. Supporters should, however, be active users of the chat functions.
- Scenario 2 can be used as Scenario 1 but gains more community maturity with a higher moderator activity. User-to-user support with regular moderation and supporter engagement is, thus, a preferred option for this scenario.
- Scenario 3 has the subcommunity function that makes it possible to create subcommunity identities, management, moderators or an actual subcommunity organisation. One can see each subcommunity as an installation of Scenario 2, but with fundamental functions overarching or going across subcommunities. Scenario 3 will take biggest advantage and deliver best if it has an actual community building/management team behind it, but it also delegates big parts of this work to voluntary subcommunity administrators and moderators.

For all three scenarios the level of investment in management and moderations is of course flexible and can be adapted to needs and available funding.

6.6 Support functions

All three scenarios are suited for user-to-user help/support that can relieve the demand for central supporters. In HBP a High Level Support Team helps users solve problems with the EBRAINS tools through a support ticketing system, by developing documentation of tools and workflows. Which level of such support services that can be economically possible in the future is uncertain. Therefore, it will be an important function of the community to establish user-to-user help to lower the demand for centralised support. This, as mentioned, counts for all three scenarios, but there are differences in the possible depth of help.

- Scenario 1 offers very restrictive support as it is reduced to basic chat functions, thus limiting the options for personalised and well-structured help.
- Scenario 2 is designed for the specific function of user-to-user dialogue, not the least for help/support. This is facilitated by a well-structured forum setup, in which some forums may be specialised on particular services/tools.
- Scenario 3 has the service-based subcommunities, which already deliver a clear structure for user-to-user support as well as having high level experts/supporters available for each service. Implementation of an open chat is on a priority list for further development of the community space and will open for help/support between users on any topic that is not service related.

6.7 Functions for the EBRAINS organisation

The EBRAINS organisation has important distributed sub-organisations, such as the National Nodes (NN) and their national partnerships and networks, EBRAINS related/coordinated projects, support, training/education groups. Further, it has its core organisational bodies (General Assembly, National Node Board, Science and Innovation Committee, Ethics and Society Committee, etc.). This quite complex organogram does not yet have one collaboration infrastructure but makes use of several communication- and collaboration systems that are not integrated (e.g. Emdesk or Outlook email lists). A unique feature of Scenario 3 is that it includes options for management of members on different parts of the organisation and provides access to some important collaboration tools.

A National Node can, for example, be established as a) an open national subcommunity for its national users, b) a private/hidden national subcommunity for the NN administration body. The functions for this are ready in the Community Space.

A move away from email lists to 'hidden' administrative subcommunities would make it possible for members of these to self-manage their changing memberships, so that they are always updated. It would only demand a specific subcommunity manager to let the relevant people into the subcommunity. Communications can be executed as central messaging to all community members, or as posts in the subcommunity forum (members would receive a notification).

Integration with the Collab exists in the Community Space and will give access to subcommunity drives, document repositories, events planning spaces, calendars etc., thus providing co-working space and organisational memory in these sub-organisations.

A single sign-on to all EBRAINS functions would allow access with one login, whereas use of external collaboration systems (e.g. TEAMS, Google, …) would demand that users subscribe and manage separate logins.

Scenario 3 is the only scenario that provides options for managing the EBRAINS organisation in the way described above, because the subcommunities can be established as open, public, or private, allowing for management of access to subcommunities according to the needed open-/closedness.

6.8 GDPR

The EBRAINS infrastructure has been developed with a state-of-the-art data protection and privacy policy, which includes its community platform.

In terms of GDPR, choosing between using external SaaS solutions or having control of a systems-internal platform has great implications for the control of the data streams.

GDPR was an important assessment dimension when the provider for the existing Community Space was decided in 2020. Of the three platforms selected for the call-for-tenders, one did not comply with basic GDPR requirements. Likewise, several non-EU based chat/forum platforms must by default be judged as non-compliant with GDPR and the third-country EU demands, because they have not proven their GDPR compliance, or because even when they make use of EU-based servers they cannot guarantee against data leaks towards non-EU countries.

The three scenarios perform very differently regarding GDPR compliance.

- Scenario 1 can be established with full compliance. Picking or developing a set of user-to-user communication functions integrated in the user dashboard means that all data are kept in the EBRAINS domains and servers, and under full control by EBRAINS. The same counts for making use of chat.ebrains.eu as chat platform. This means that a DPO will be in full control of the GDPR policy for these functions.
- Scenario 2 performs very differently when installed as an internal or an external platform.
    - An installation of, e.g. an OS platform such as the existing rocket.chat or an open-source forums platform on EBRAINS-controlled servers will be under full control of a DPO, which makes it possible to guarantee full GDPR compliance.
    - Using an external chat/forum platform, however, will be complicated, since most of these are non-EU based and have not adapted their data and privacy policies to provide oversight by the users, which leaves the DPO with only scarce insights and influence on the compliance of the platform. Several such platforms, despite often having proclaimed to be GDPR-compliant, have received GDPR fines recently.
- Scenario 3 must be regarded as GDPR-compliant. During the procurement process the selected platform lived up to basic demands, since it is hosted on EU-based Google servers. The software as such did later undergo a Data Protection Impact Assessment (DPIA), which revealed that it is compliant as a communication means in a professional context. Further, the responsible DPO is, according to the contract with the provider, empowered to demand adaptation of the software to GDPR-related rules.

6.9 Platform costs

The platform cost profiles are different for the three scenarios.

- Scenario 1 is built on free OS elements and will run on existing EBRAINS servers.
  - The investment costs are integrated into the costs of establishing the User Dashboard of the EBRAINS portal. Development costs will therefore, all things being equal, reduce the resources left for other coding activities on EBRAINS.
  - The running costs are very small.
  - It seems unlikely that the implementation of this scenario can be finished during SGA3.
  - There is an efficiency-loss cost of unknown size in that users should change platform, build a new profile etc.
- Scenario 2 is built on a free OS internal system, or alternatively on an external SaaS platform.
  - The investment costs are connected to the implementation and configuration of the platform – meaning that think-work invested in the configuration of the existing Community Space will largely have to be redone as a re-thought for a new system.
  - It takes +/- half a year to configure, implement and test a new forum-based platform making it unlikely that this scenario, if selected, can be implemented during SGA3.
  - An internal free OS system, such as the existing rocket.chat, can be implemented during SGA3, and integration into the User Dashboard could be planned for implementation after SGA3.
  - Development costs for of an external SaaS forum platform are not relevant, since users do not have influence on the functionalities provided.
  - Development of further community functions is not relevant for an internal OS chat/forum solution either, since if further functions are needed these would replicate Scenario 3.
  - There is an efficiency-loss cost of unknown size because users should shift to a new platform and build a new profile.
- Scenario 3 has been implemented in HBP SGA3 as a SaaS solution with a license.
  - Setting up the Community Space and the involved investments have been part of the HBP Work Plan.
  - There are no configuration costs since all planned functions have been implemented.
  - However, there is a wish (see user feedback in Chapter 7) for having added a global chat solution to the existing subcommunity forums, which demands some investment in further development. There seem to be the following options for this, all of which can be implemented in SGA3.

    The free solution: a number of open subcommunities, such as for example ‘Support’, ‘The free and open word’, ‘Science chat’, etc. could be established, and the integrated subcommunity forums could be used. This can be established without development costs and would have the advantage that it would be fully integrated with all other functions in the Community Space.

    The low-cost solution: Widgets/frames and a new ‘Chat’ menu point in the Community Space towards the existing chat.ebrains.eu could be developed to create links and direct access to its channels. This would provide a full chat system in a platform next to the Community Space.

    The more expensive solution: The existing 1:1 user chat in Community Space could be further developed to a channel-based system. This would provide a less advanced chat system than rocket.chat, but a big advantage would be that it would have full integration with all other functions in Community Space.

- An economically attractive alternative to a license solution is to acquire the source code to have the software copied to a google server, which is managed by EBRAINS central hub or by a National Node as a service. This would be a once-for-all cost of a size that makes it feasible to establish under SGA3.
- A positive economic consequence of Scenario 3 is that it would imply instalment of a new platform and therefore not make use of available personnel for coding, configuration, tests, etc. This means that the available resources can stay focused on populating the community and delivering community activity.

7. Feedback on the EBRAINS Community Space

The existing EBRAINS Community is represented in Scenario 3.

User and community builder feedback

During summer 2022 the community building team gathered feedback from a selection of users and community builders on the functioning of the community. This feedback gave important insight into the expectations of the users and community builders concerning the wished options in the online community platform.

The following is an extract of the impressions, with comments to how they probably would relate to the three scenarios.

'Can we have a chat function on the platform?'

- Scenario 1: Can be implemented as the rocket.chat OS platform.
- Scenario 2: Is probably a standard function in any such platform – else it can be implemented as in Scenario 1.
- Scenario 3: A 1:1 user chat has been implemented in the existing platform by the provider. The existing chat.ebrains.eu can be integrated as chat platform during SGA3.

'The Community Space would provide a higher collaboration level if there were more non-HBP members onboarded'.

- Scenario 1: Only 'user-members' relevant, not other collaborators.
- Scenario 2: As for Scenario 1 when established as an integrated platform, but some threads may be relevant for e.g., stakeholders. As an external platform there is full openness for any person since the platform sign-on is independent of the EBRAINS sign-on.
- Scenario 3: Highly relevant, fully possible technically by choosing the community-only sign-on, and for the rest of SGA3 this will be a focus point.

'Provide an option for "mass integration" of contacts from events, Slack channels, etc.'

- Scenario 1: Unknown if this can be made possible with existing OS elements, but link to event participant registration may be coded.
- Scenario 2: As Scenario 1.
- Scenario 3: This has been discussed with the provider and is considered for implementation first half year of 2023.

'There are many channels that people already use (LinkedIn, Twitter, Slack, etc.) – it can be difficult to grasp what the community adds to that.'

- Scenario 1: The use of the forum/chat functions of the dashboard would probably be tightly connected to use of the services – tips, user-to-user help etc. Other channels would not add to that but may become competitors, since they can provide a comparable service. There are no obvious synergies to harvest between the dashboard and SoMe.

- Scenario 2: A forums/chat platform could develop some focused discussions on interest areas of users, thus adding depth to conversations in other channels. Widgets with the other channels probably could be included in the platform. Some synergy could, as an example, potentially develop with SoMe raising questions visible on widgets and the platform users discuss them in-depth. The main advantage compared to the many available SoMe channels is that the platform would be the one-place-to-go solution.
- Scenario 3: As for Scenario 2 regarding incorporations of SoMe into platform, possible synergy, and being a one-place-to-go. The subcommunity functions add much deeper thematic focus than SoMe normally does, for example by having focused online seminars, links to collab papers/posters etc. in the subcommunities. Maybe most important, Scenario 3 delivers subcommunities as collaboration spaces that SoMe cannot provide. The options of developing an internal chat system and/or opening some 'chat' subcommunities would provide such fundamental functions.

'How should integration between channels happen?'

- All scenarios: the dashboard could contain widgets for updates/extracts from the channels users already have.
- Scenario 2: at least the commercial version of cloud forums provides options for SoMe integration into platform.
- Scenario 3: a basic SoMe widget exists that compares to the Scenario 1 and 2 options. A more advanced two-way integration with, e.g., Twitter would need to be coded.

'People are used to SoMe functions, such as "like"-functions. They are missing and would be appreciated.'

- Scenario 1: it is probably possible to find OS tools that provide this at GitHub, and rocket.chat has the function.
- Scenario 2: it is included in cloud forums and rocket.chat.
- Scenario 3: it would have to be coded for the subcommunity forums, but available in rocket.chat.

'The existing Community Space only has one "Posts" forum per subcommunity. Structured forums in the subcommunities would be an improvement.'

- Scenario 1 and 2: N/A, since subcommunities are not included in these solutions
- Scenario 3: Not an option now, since each community only has 1 'Posts'-function in which each post can be answered, thereby developing threads. But several 'Posts' forums in one subcommunity is not possible now. Can be coded to have options of establishing several thematic 'Posts' forums and/or an open forum system comparing to Scenario 2 can be embedded during SGA3 as a global function on the Community Space. The preferred solution would be to have only one Posts forum in each subcommunity and supplement this with new channels in rocket.chat if needed.

'The subcommunities help frame the discussions and prevents the community users from undesired spamming with posts from fields outside of the persons´ interest and strengthen the focus of discussions. Thematic subcommunities are more relevant than the service-based communities.'

- Scenario 1: A 'subscribe to threads/forums' needs to be implemented to achieve this.
- Scenario 2: 'Subscribe to thread/forum' is supposedly standard in forum platforms.
- Scenario 3: 'Subscribe to subcommunity notifications' exists. An effort to establishing more thematic subcommunities is a priority for 2023 community building. Further, the service subcommunities will become more relevant if they in the future will be used by Support.

The conclusion of the feedback collection was that users and community builders wish for an added chat function in the Community Space and higher heterogeneity of the users and subcommunities. The motivation for wanting a chat function seems to originate with a desire for a more informal form of communication, moving such communication from a range of different social media platforms into the community platform, and to have – running side-by-side to the well-structured subcommunity forums – a less framed space for communication.

Scenarios 2 and 3 are best fit to provide most of the wished options in a coherent platform, and since the existing chat system can be integrated. Scenario 1 will risk becoming a complex patchwork if it is to deliver the same level of services.

Expectations as stated by EBRAINS Central Hub communication team

EBRAINS AISBL communication and marketing team has expressed a desire for certain features to be included in the future community solution. These features are introduced below, followed by an analysis of how each of the scenarios discussed in this deliverable would answer to these expectations.

It is important that the solution does not need, or has a little need, to be updated/developed continuously.

- Scenario 1: This scenario represents a totally new coded solution, which compared to the two other scenarios introduces an unknown future need for adjustments and new development. In this sense, Scenario 1 has the highest uncertainty about future development needs connected to it.
- Scenario 2:
    - For a new integrated OS chat/forum platform there is an uncertainty, as with Scenario 1, about if the solution/configuration lives up to the needs of the community, and new needs for development therefore may appear.
    - A SaaS chat/forum platform will be an off-the-shelf solution, which cannot be changed regarding its functions. Depending on the chosen platform there will be costs connected to configuration of the platform, as the community develops.
- Scenario 3: This scenario has been implemented for 1½ year. Chat functions can be implemented during SGA3 after which there are no known needs for further development of the platform. If it is chosen to invest in the source code and an own server, then adjustments can be implemented by coders in the National Nodes when future needs appear.

It is important to ensure effective user-to-user support to relieve the demand for central support.

- Scenario 1 delivers a basic function for user-to-user communication and help/support.
- Scenarios 2 will deliver user-to-user help/support. Depending on the technical solution to this scenario, this can happen on a new internal forum/chat platform, or on a platform outside of the EBRAINS domain.
- Scenario 3 has an established channel for support in terms of the existing Service Category subcommunities. Adding to this, integration of the existing chat.ebrains.eu will provide a global function for user-to-user help/support, which can be implemented into the Community Space during SGA3.

There are no means now for communicating/engaging all 5,000 registered users, which is unsatisfactory from many points of view. It would be an important asset of the community solution if it could provide such a communication channel.

- All scenarios: This is not only a matter of platform, but of the fact that users at the moment are allowed to sign up to EBRAINS without signing up to the community. No matter the scenario this can only be solved by providing the community as a service, alongside the other services, as a consequence of EBRAINS sign-on. Communication to all users would be strengthened considerably by, further, demanding sign up to EBRAINS to get access to its services. With such updates of the logon policy there would be a communication channel to all users that have activated the notification function on their personal community dashboard.

- Scenario 1 can have options to identify and connect to users from the start of the implementation of the user dashboard, if this function is prioritised.
- Scenario 2 requires single sign-on to be established for the internal platform solution. For the external solution this is not possible, and there will not be a match between the members of the community platform and the registrants to ebrains.eu.
- Scenario 3 is ready for communication to all members since it is implemented with an option for single sign-on with EBRAINS. With integration to chat.ebrains.eu there are several options for communicating to all or segments of users, including targeted communication to specific subcommunity members (for example, members of a specific National Subcommunity).

User engagement activities are needed to make users active in communication and to become EBRAINS advocates.

- The ambition and form of user engagement activities depends on, on the one side, the staff resources available for driving central engagement activities, and on the other, on the level of maturity the community has reached – since this determines how much bottom-up engagement can be expected in the future. The higher the maturity level the more activity and advocacy can be expected.
- Scenarios 1 and 2: user engagement would need to happen as activities only loosely connected to the forums, since these two scenarios do not include the option of self-organisation that subcommunities provide. The main function supporting user engagement would be options for advertising engagement activities in the forums/chats.
- Scenario 3: engagement activities are closely related to the structure and functions of the Community Space (global events; subcommunity events; science market). Further, time-limited subcommunities can be set up as events in themselves. Over time, Scenario 3 can deliver a community with a very high community maturity level with the highest level of distributed initiatives, bottom-up engagement and ownership/advocacy among the three scenarios.

8. The strategic choice

Developing community maturity (see Chapter 5) presupposes a time factor. It will take time for the EBRAINS research infrastructure to mature, and there will probably never be an end-stage of its development as new ideas, opportunities and goals will emerge and the infrastructure, correspondingly, will continue to develop. The same applies for a community. It will mature and develop in parallel with the technical side of the infrastructure, and it will develop in new directions as a consequence of the development of the infrastructure and of the goals of the users. The strategic challenge of community building is, thus, to establish the community in a way that allows the community to mature alongside the infrastructure.

The fundamental choice is which maturity level should be aimed at:

1) A simple forum and profile options for *users*. Leading to an 'emergent community' level dependent on centralised leadership, and in which no mentionable bottom-up engagement and initiatives can be expected.
2) An advanced forum platform for *customers*. Opening for, nearly, a 'community' maturity level. Forum discussion must be expected to happen, especially around user-to-user help/support. Bottom-up initiatives will be scarce, and the ownership will compare to that of a customer.
3) A full-fletched community solution for *collaborators* with subcommunities at the centre. Over time maturity can develop to a mature 'networked' community, which is self-sustaining, works on voluntary bottom-up initiatives, inspired by back-up from community builder(s).

The central question is which kind of community backs up best the vision and strategies of the EBRAINS organisation. On most parameters of the *Community Maturity Model* (see Chapter 5) the nature of the EBRAINS infrastructure and organisation points to reaching towards the highest-level maturity of the community – a networked community:

- The strategy that EBRAINS follows, e.g. towards the National Nodes, is a strategy of *interdependency* – EBRAINS needs them, and they need EBRAINS. For that reason, the strategy is non-competitive towards its stakeholders, which should be reflected in and supported by the community setup.
- Strategically, the best community for EBRAINS must be one in which the community members to a high degree themselves take care of having a well-functioning community. Such a *self-sustained* community is at highest possible maturity.
- For the same reasons the community management needs to be *empowering*, *motivating*, *inspiring*, and helping members to take things into their own hands – rather than in less mature communities to do things for them or be passive.
- EBRAINS is an infrastructure that potentially can serve a very wide range of interests – obviously being of scientific, clinical, and industrial nature, but also reaching into the public sector, CSO's and investor/funder interests. Because of the wide array of interests, *inclusiveness* is key for the composition of the community, and other characteristics of a highly mature community become relevant, such as for example:
    - *Collaboration* as a strong element of the community culture is needed, both because the subject matter of EBRAINS demands wide and strong interdisciplinary collaboration, and because EBRAINS is there for creating benefit for society, and that calls for collaboration across the value chain.
    - *Co-creation* of visions, roadmaps and projects is a logical consequence of the need for collaboration. This is the background for the emphasis in EBRAINS CoCreate in SGA3 as a community activity.
    - Members of the community should be allowed a high level of self-management and *self-governance*, so that they can arrange themselves around their interests. This can be reflected in self-managed working groups, and in different forms of subcommunities.
- EBRAINS has a very broad set of user types, with very different personal and institutional goals – from e.g. basic neuroscience, to constructing the computer of the future, to developing diagnostic and clinical support systems, and medical products. A subcommunity structure that can organise members according to their goals and interests is, thus, the most satisfactory community structure, as seen from the users' point of view.

9. Conclusion

All three types of communities and online community functions have their pros and cons from the points of view of wished maturity level, online functionalities, investment and running costs, fit with the nature of the EBRAINS research infrastructure and its organisation, and coverage of user demands. In this chapter, firstly, the up- and downsides of each scenario are briefly summarised, and secondly, they are described from a strategic, technical, and economic point of view. Lastly, a recommendation is given.

The conclusion chapter revisits the most important lessons from the preceding analytical chapters, and it can be read as a 'policy brief' on community strategy after the end of HBP.

9.1 Up- and downsides of the three options

The first scenario – a set of quite basic communication/information tools being part of the future user dashboard and focusing clearly on *single users* rather than on a community spirit – is a relatively drastic back-to-basics choice from where it will be difficult and costly in the future to let the community mature to a higher level. The main downside of this is on strategy because the complexity and content areas of the EBRAINS infrastructure and its organisational setup call for provision of a community structure in which each user can easily identify their areas of interest and likeminded fellow users. The most obvious advantage would be that costs for platform maintenance and

community building would be kept very low once the initial investment in dashboard coding has been finished. A large loss of community members must be expected during the transition.

The second scenario – an open and flexible forum/chat platform that develops according to user needs and which is embedded into user dashboard frames – is a sideways and downwards move from the existing community strategy. It has a strong focus on open communication and user-to-user help, and a lower focus on community self-organisation and self-management. Strategically this helps along a bottom-up relief of the need for central user support. To some extent it will bring together likeminded users. However, it still focuses on users as such, meaning that it will not encourage wider interdisciplinary and societal collaborations. On the cost-side it is possible to implement a low-cost structured version of the existing chat.ebrains.eu, which, however, involves a risk for future demands for added functionalities, and for related development costs. A new implementation of a forum platform seems not to be economically competitive to Scenario 3, also because it involves uncertainty about future development needs. A large loss of community members must be expected during the transition, unless a data transfer under consent can be established.

The third scenario – the existing Community Space as a subcommunity-based structure, with an added open chat function, embedded into user dashboard frames, but also existing as a service in itself – is a strive for the highest Networked Community maturity level over time. An advantage is the option of creating subcommunities with specific focus on services, themes, geography, or development/projects, which provides clear collaborative rooms for users as well as likeminded non-users. In this sense this scenario includes the same options as the two other scenarios, but in addition it transcends the user-focus and opens for a stronger goal-focus. It is an advantage that this scenario is already implemented and tested, and the few needs for development are known and can be implemented during SGA3. It is advisable to add a chat functionality during SGA3. The future costs, thus, are comprised of a license or of an own installation of the platform, and few and small adjustments. Maturing a networked community, though, demands a certain continuous community building effort. The promise would over time be a self-organised and collaborative community.

9.2 The strategic, technical, and economic viewpoints

Strategically, Scenario 3 seems most relevant because it embraces the complexity of EBRAINS and brain-related science and innovation, and because it makes it possible to develop a highly mature networked community.

- It is suited for the heterogeneity of EBRAINS concerning the tools and services offered by the infrastructure, the diversity of user types and interests, and the aims of public benefits EBRAINS can support across this heterogeneity.
- It serves best the distributed nature of the infrastructure by providing options for service subcommunities as collaboration centres for existing and future services.
- It makes it possible for the community members to focus and place their community efforts in collaborations that fit their interests best though engagement in thematic subcommunities.
- The national subcommunities provides an option for National Nodes to serve their national members and to openly collaborate in an EBRAINS community environment.
- User-to-user help/support is already possible and can be strengthened via integration of chat.ebrains.eu during SGA3.
- The distributed nature of the EBRAINS organisation can make use of the Community Space as a collaboration and organisational centre.

Technically, all three scenarios are feasible. However, Scenario 3 already exists, whereas the two other scenarios involve new analysis and development/configuration of technical solutions. Technically Scenario 3 is, thus, more mature than Scenarios 1 and 2.

As mentioned in Chapter 6.2, smooth operation of combining the existing chat.ebrains.eu with either of the three scenarios would demand an adaptation of the login policies. Ideally, the EBRAINS login would open all platforms (ebrains.eu, community.ebrains.eu, and chat.ebrains.eu), meaning that all

users would automatically become community members and vice versa. To live up to the documented user demand for a chat structure in Scenario 3, such an integration can be established in HBP SGA3.

Economically, the profiles of the scenarios all seem feasible.

- Scenario 1 has very low running costs. Depending on the wished community functionalities it involves investments in new analysis and development. There will be an unknown transition cost in terms of loss of community members, since this scenario would require a shift of platform (new profile; new connections, etc.). It involves a scrap cost in terms of abolishment of the existing investment in the Community Space.
- Scenario 2 implies an unknown transition cost in terms of loss of community members, since this scenario would require a shift of platform (new sign-up; new profile; new connections, etc.). It involves a scrap cost in terms of abolishment of the existing investment in the Community Space.
    - Basing a light version of this scenario on a well-structured channel setup in chat.ebrains.eu will have the same implementation costs as Scenario 1, with added community building costs for moderation.
    - In the case of embedding a free OS forum solution into the user dashboard, the further costs would comprise of development of the embedding and configuration of the platform.
    - In the case of connecting a commercial GDPR-compliant platform to the user dashboard via API, the costs must be expected to be high (based on some of the bids during the Community Space procurement). Configuration of a new platform is time consuming.
- Scenario 3 would have the following costs:
    - Staying with the Community Space involves a yearly license. To this comes integration of preferably chat.ebrains.eu, or secondarily and more expensive a further development of the existing one-to-one chat of the Community Space to become a simple but integrated open chat function.
    - Buying the source code and having an own Google installation established would be a feasible alternative involving costs for the purchase and for setting up the server.

All scenarios imply a certain cost for maintaining a communication with users, engagement of supporters, and for creating activities for the users. The costs related to this depend on the ambitions and on the level of voluntary engagement of the users in community management and engagement. All scenarios can exist with a passive central management, and they can all favour from active and engaging community building.

Considering the need for user recruitment and retention during and after SGA3 the license solution of Scenario 3 is on the short term the economically most favourable. However, buying the source code and having the platform moved to an own server will in the longer term be the most attractive, since this does not entail a yearly license.

9.3 Recommendations

The present report is focusing on the central strategic choice of EBRAINS AISBL about its future type of community and, consequently, the community platform needed for the future. The following recommendations

1) **Strategically, technically, and economically Scenario 3 (subcommunity based high maturity community based on the existing Community Space) delivers the most favourable solution.**

   It is recommended from the perspective of community building in HBP SGA3.

   Alternatively, Scenario 1 (chat function integrated in user dashboard) would deliver a purely user-to-user communication solution at low cost, but also locked at a strategically too low community maturity involving a risk of future demands for changing the strategy and platform solution.

Scenario 2 (new forums platform) cannot be recommended because the most realistic solution in this scenario is based on use of chat.ebrains.eu, and therefore to a high degree replicates what can be achieved by the two other scenarios.

2) **The integration of chat.ebrains.eu into the existing Community Space** should be finished before the end of HBP SGA3 to allow for having all communication platforms inside the EBRAINS domain.

3) The **Community Space should be integrated into the user dashboard** to allow users to see posts to them, to easily open the subcommunities they subscribe to, and to provide a one-click opening of the Community Space.

4) **Login policies should be updated** so that the EBRAINS login provides access to ebrains.eu, chat.ebrains.eu, and community.ebrains.eu, and so that all registered users become members of the community with an opt-out option. This will ensure that fully functioning communication channels to all users and community members is established via the community news function, the subcommunities, and the direct members post and chat function. This will provide the communications team with important new options.

5) **Mandatory sign-up for all EBRAINS users should be considered** to allow for communication to all users that have activated the Community Notifications function.

6) It should be considered to make use of the **Community Space as an organisational platform**. The EBRAINS organisation is growing with increasing numbers of National Nodes, partners of these nodes, associated EBRAINS members, committees with an ever-changing pool of members, etc. Having a subcommunity structure opens for an easy and transparent management of, and communication in, this organisation.

7) It should be considered to **use the Community Space as a support channel**. There is a yet unexploited option for user-to-user support, which is backed by service supporters in the service subcommunities. This would provide searchable support answers and relief the central support via the ticketing system.