RIBA

MAKING CONNECTIONS

PATTERNS FOR BUILDING A VIABLE ARCHITECTURAL RESEARCH NETWORK

APRIL 2008

CONSILIAN
BUILDING SOLUTIONS FOR BUSINESS PROBLEMS

NETWORK *(n)*

1. An extended group of people with similar interests or concerns who interact and remain in informal contact for mutual assistance or support.

   Source: http://www.answers.com/topic/network?cat=biz-fin

2. The physical and logical infrastructure that allows for the connection of a set of computers.

   Source : http://www.broadbandshowcase.org.uk/glossary.htm

Revision control

10.03.2008	Draft	Issued for comments
14.04.2008	Rev 0	

Preface

'I read somewhere that everybody on this planet is separated by only six other people. Six degrees of separation. Between us and everybody else on this planet.'

John Guare (1991)

The concept that everybody is linked by an average of only six connections from anyone else in the world was popularised in John Guare's play and the subsequent film 'Six Degrees of Separation'. However, the idea attracted attention much earlier through the work of Stanley Milgram, a Harvard professor investigating social networks in the 1960's. Milgram sent letters to several hundred people, selected randomly across different states, who were asked to either forward their letter directly to the person at the end of the chain or to somebody they thought might be more closely acquainted with the target. The results of these experiments supported a conclusion that constantly surprises us: we live in a 'small world'. The size of the world's population is huge, but the shortest path between any two people is relatively tiny – an average of six according to Milgram. Furthermore, this finding is common to any network that is highly connected - it is sometimes called the 'small world phenomenon'.

Milgram's results are less startling when we consider that each person in his experiment knew the next person in the chain. We know who our friends are, and we might be able to identify some of our friends' friends, but we get into difficulty beyond two degrees of separation - six can be a large number – suggesting that somebody owning a map of a small world network can find a short (even a direct) path to a particular objective, whilst a person without such information would have to rely on local knowledge, and would be likely to give up a long way from their destination. The Internet has eliminated geographical distance and drastically reduced the real cost and time of sharing information, but the abstract world of ideas and knowledge remains vast and difficult to navigate. New developments in information technology and knowledge management emphasise the social characteristics of knowledge and promote communication with our peers as the best way to get the information we need to carry out our work; as these models take hold, finding the contacts and knowledge we require is getting easier – the world of ideas is becoming smaller.

CONSILIAN
April 2008

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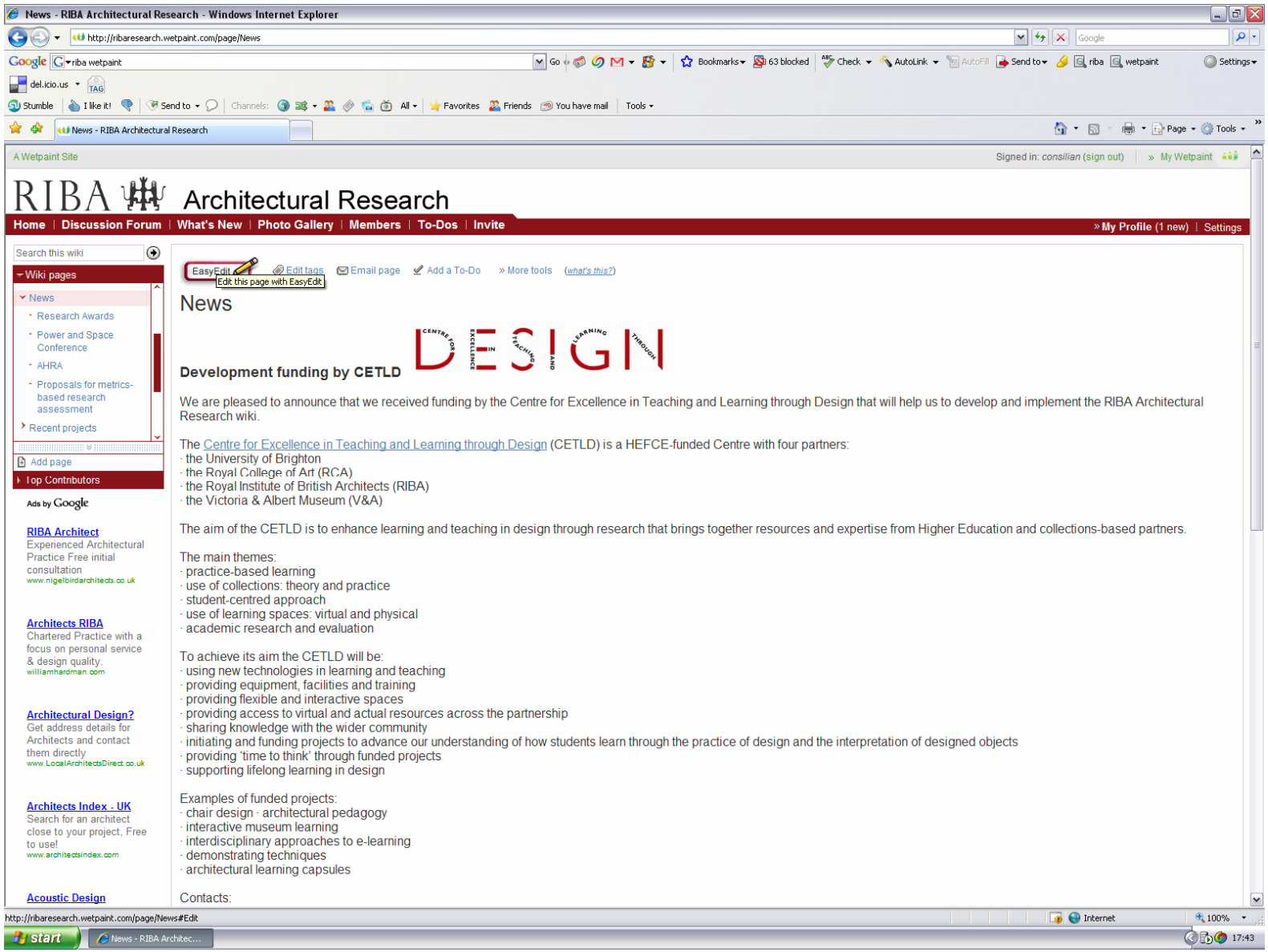

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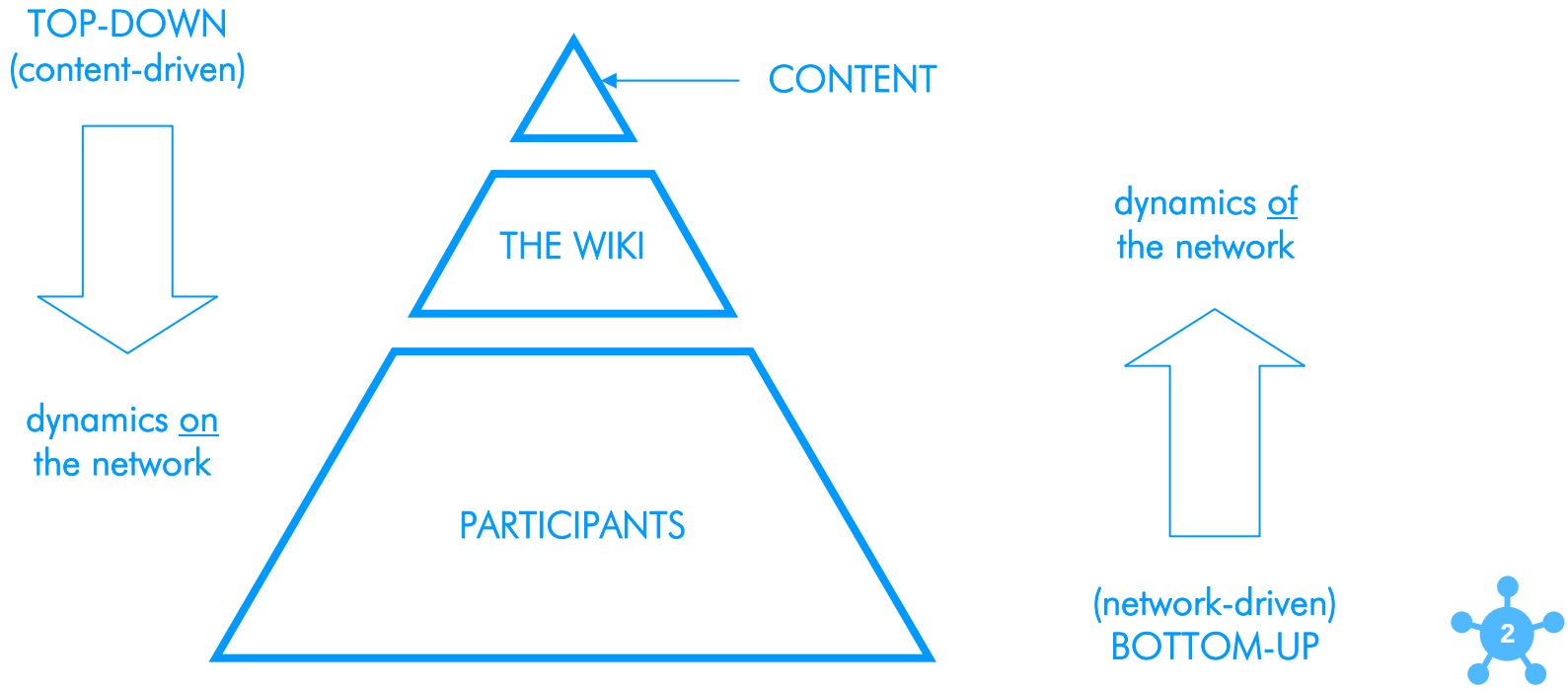
Executive Summary

Just over a year ago, the RIBA Research & Development Department established a website which can be used by architectural researchers and practitioners to create and share knowledge. A software application called a wiki was selected which allows users to edit the website, and a pilot wiki has been established which is free to download and simple to administer. Before committing further resources, the RIBA applied to The Centre for Excellence in Teaching and Learning through Design (CETLD) for funds to test the approach that has been taken and to explore any new opportunities which might exist. This report assesses the results of the RIBA architectural research wiki and places these findings in the context of a study into how recent developments in information and communication technology can support virtual knowledge networks

The report proposes a strategy for taking the project forward in three phases. Starting with the current baseline, three further scenarios are developed using a set of 17 inter-dependent patterns or archetypes. Each of these patterns deals with an aspect of the project, and each pattern can be combined in various ways to synthesise as many different situations as are required. The resulting 'pattern language' allows individual aspects of the project to be analysed whilst retaining the vital connections which exist between its components – showing the parts of the system and the whole at the same time. The one certainty about any IT project is that it will change; thinking in network patterns allows the RIBA to assess how changes to one aspect of the project can cause changes to occur in other parts of the project, and affect the project as a whole.

Three of these patterns, *Participatory Web, Peer Production* and *Knowledge Networks* sometimes combine to create a remarkable phenomenon: without financial incentives, and with minimal central control, a group of strangers gather together in a virtual way to produce something as a team which surpasses the capability of any individual in the group. But despite conspicuous success stories, such as Wikipedia, a far greater number of public wikis fail to take off. Nobody can satisfactorily explain why some wikis work spectacularly well whilst others crash. Even Don Tapscott, author of Wikinomics [1] admits that the techniques needed to build a successful wiki are ultimately more a 'black art' than a science.

A measure of the current level of success for the project was obtained by conducting a quick poll of 26 employees (including 13 RIBA members) within a single architectural firm. The results of this survey showed strong support for the aspirations of the project, but feedback suggested that there was only limited evidence that the project had so far achieved its intended goals. A significant finding of the poll was that nobody in the group had previously heard about the RIBA architectural research wiki. Everybody agreed that the current website needed a higher profile in order to be widely adopted by practitioners, specifically that the RIBA as a whole needed to give the initiative greater impetus and publicity.



Note:

For a further explanation of
this diagram see also page 84.

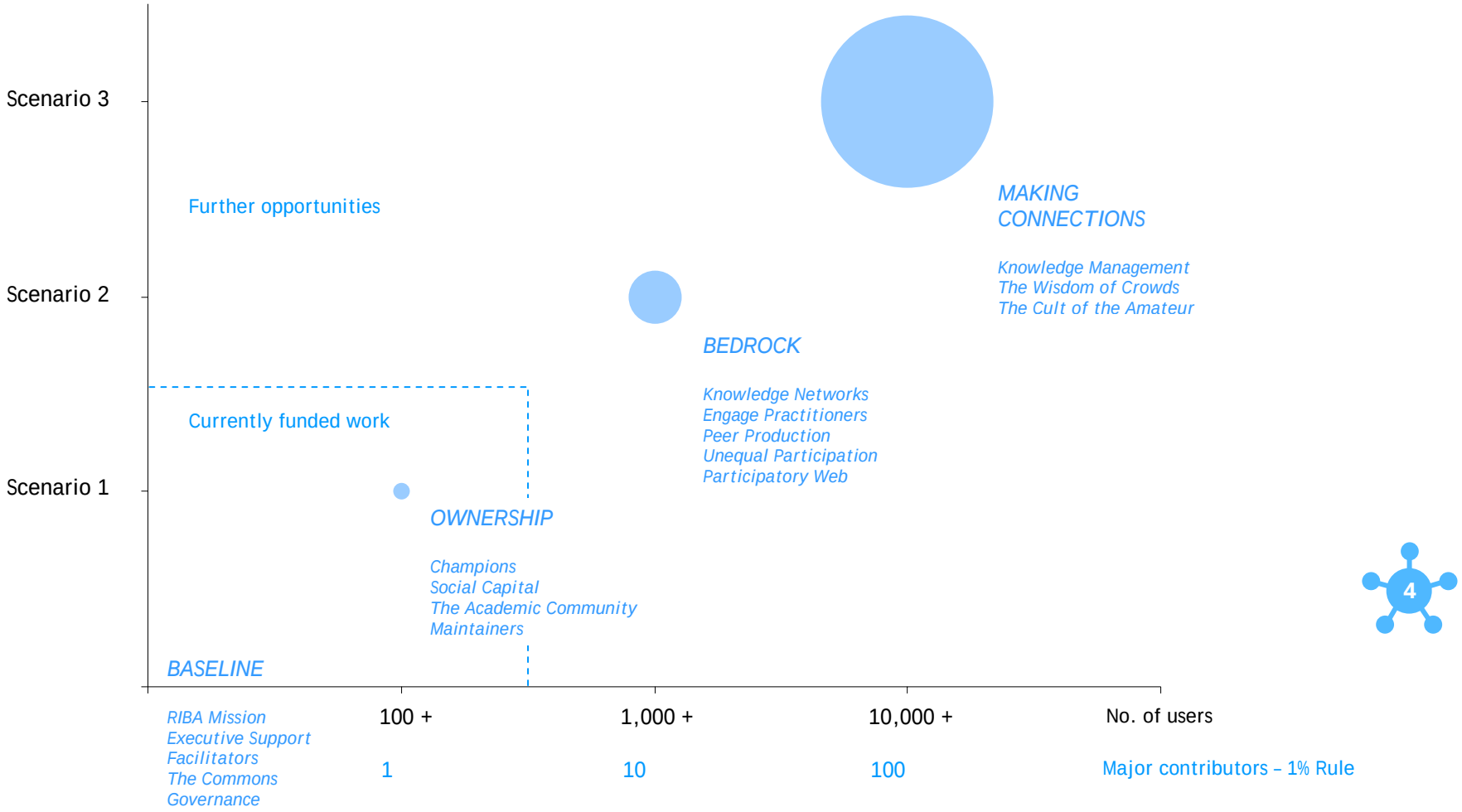
The report recommends that the criterion for measuring the success of the wiki should be how much content is contributed by users; however, working against this criterion is the pattern *Unequal Participation*, which holds (as a general rule) that less than 1 per cent of users will contribute original material to a wiki. The viability of the project is therefore dependent upon the ability of the RIBA to attract large numbers of users to the wiki. For this reason, the main concern about the project is its current and historic level of registered users. Statistics for the wiki indicate that there are currently 77 registered users: 12 joined in 2006, 62 joined in 2007, and 3 joined this year. These numbers need to be increased substantially, by at least a factor of 10 but ideally by a factor of 100, in order to guarantee the long-term viability of the project.

The diagram on the opposite page illustrates two methods to increase the number of people using the wiki. One way is to 'seed' the wiki by directly publishing material in order to attract more users - represented as a top-down approach; another way is to encourage the development of a larger network of participants which will underpin the wiki - shown as a bottom-up approach. These two approaches are not mutually exclusive; in fact, neither will work entirely on their own, but they could be carried out together or sequentially, and each method complements the other.

A baseline scenario *Test Wiki* is introduced using the first five patterns: *RIBA Mission*, *Executive Support*, *Facilitators, The Commons*, and *Governance*. Analysis of this network confirms the findings of the survey – that the wiki is currently driven primarily by the pattern *Executive Support*, rather than by grass roots participation. It notes that the wiki does not yet have an explicit policy regarding intellectual property rights and a priority at this stage is to put in place a mechanism for licensing IPR to comply with the recommendations of the pattern *Governance*.

The first scenario *Ownership* adds four more patterns: *Champions*, *Social Capital*, *The Academic Community*, and *Maintainers*. The objective of this scenario is to decentralise responsibility for the wiki, transferring the task of adding content to grass roots participants. To realise this objective, it is recommended that the RIBA creates an informal arrangement of online publication, sharing and open peer review of academic research papers – a Commons for Architectural Research - which will complement traditional systems found in academic institutions. Delegating the tasks of minor editing and tidying up the wiki to volunteer *Maintainers* will avoid overloading the wiki *Facilitators*.

The second scenario *Bedrock* adds five further patterns: *Knowledge Networks*, *Engage Practitioners, Peer Production*, *Unequal Participation* and *Participatory Web*. Whereas the first scenario was designed to connect *people with information* through online databases and knowledge banks, this scenario takes the next step - connecting *people with people* by creating an online platform for informal dialogue and the open exchange of information and ideas. The proposed *Knowledge Networks* are: Communities of Practice; Knowledge Studios; and an Innovation Exchange. It is recommended that a process of commons based *Peer Production* is established to expand the wiki community and add more content to the wiki.



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The third scenario *Making* Connections completes the series by adding the final three patterns: *Knowledge Management*, *The Wisdom of Crowds*, and *The Cult of the Amateur*. This scenario aims to ensure the long-term viability of the wiki by connecting it to other RIBA projects. The pattern *Knowledge Management* enables the wiki to more closely connect the patterns *Engage Practitioners* and *Academic Community* as in the previous scenario, but here the connections are much stronger due to the contributions made by other RIBA initiatives, such as its proposed knowledge communities and the planned redesign and upgrade of RIBAnet. The patterns *RIBA Mission*, *Executive Support*, and *Facilitators* permit an integrated approach, which brings additional resources to the project – avoiding duplication of effort and reinventing the wheel.

A key recommendation of the report is that connections between the academic community and practitioners should match the type of content being transmitted: practitioners tend to use conversations with friends and colleagues to find the information they need to learn and carry out their work; scholars work in a more structured, formal environment, relying on academic peer reviews and published papers. The style of these two types of communication is very different, so that the supporting technology should be differentiated to reflect these distinctions. In the second scenario, it is recommended that the wiki is augmented by a social networking service, similar to Facebook, which would be used to build a series of informal networks. Users would be free to establish new groups and to find and join groups which interest them. In this arrangement, the research wiki is positioned as a public-facing domain of academic quality and the network is designed as a members' forum for debate and interaction, although users would be able to import their own wikis for specialised purposes into the social networking application.

The report places very approximate numbers on each scenario. It is suggested that the scenario *Ownership* could consolidate the current number of users, which is around 100, but that an increase to 1,000 or more is possible using the strategy *Bedrock*. An estimate of the number of users within the scenario *Making Connections* is 10,000 or more, reinforcing the key recommendation of the report and suggesting that the public – facing wiki should be linked to the main RIBA website, whilst the social network should be integrated with proposals for the new RIBAnet.

Finally, many of the issues surrounding this project are complex. For example: the pattern *Participative Web* is still emerging; some concepts are slippery and hard to pin down, such as the pattern *Knowledge Management*; whilst other ideas turn traditional thinking on its head, such as the patterns *Peer Production* and *The Commons*. The pattern language is intended to bring some clarity to these ideas, explaining the strengths and limitations of the new technologies. Rather than impose prescriptive solutions, the report uses the pattern language to structure these issues in a flexible way which will allow consensus to be built around shared objectives and enable the debate about the wiki to move forward; the pattern language can be used to develop a range of different scenarios and, in this sense, the patterns are best understood as components of a strategy which is still emerging - the network diagrams provide a means for connecting these components in a way which will realise that strategy.

ACADEMIC COMMUNITY

Problem:

'Inward-looking results produced more for the self-sustaining benefit of the academic community'

PRACTITIONERS

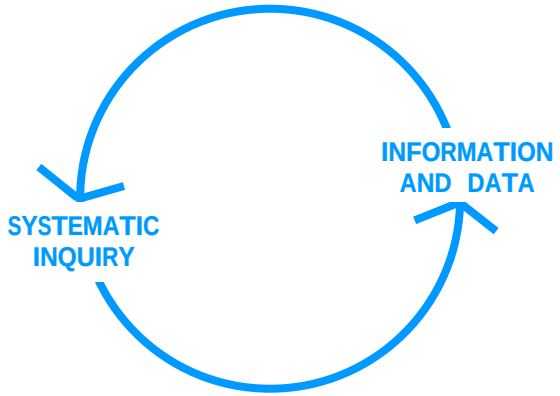
Problem:

'Much of this (data) remains tacit either for commercial reasons or is not disseminated in a rigorous fashion by the press'

RESEARCH

collation of raw data

dissemination of validated knowledge



PRACTICE

feedback from:

- Products
- Performance

feedback into:

- Processes

Solution:

Better connections with practitioners

Solution:

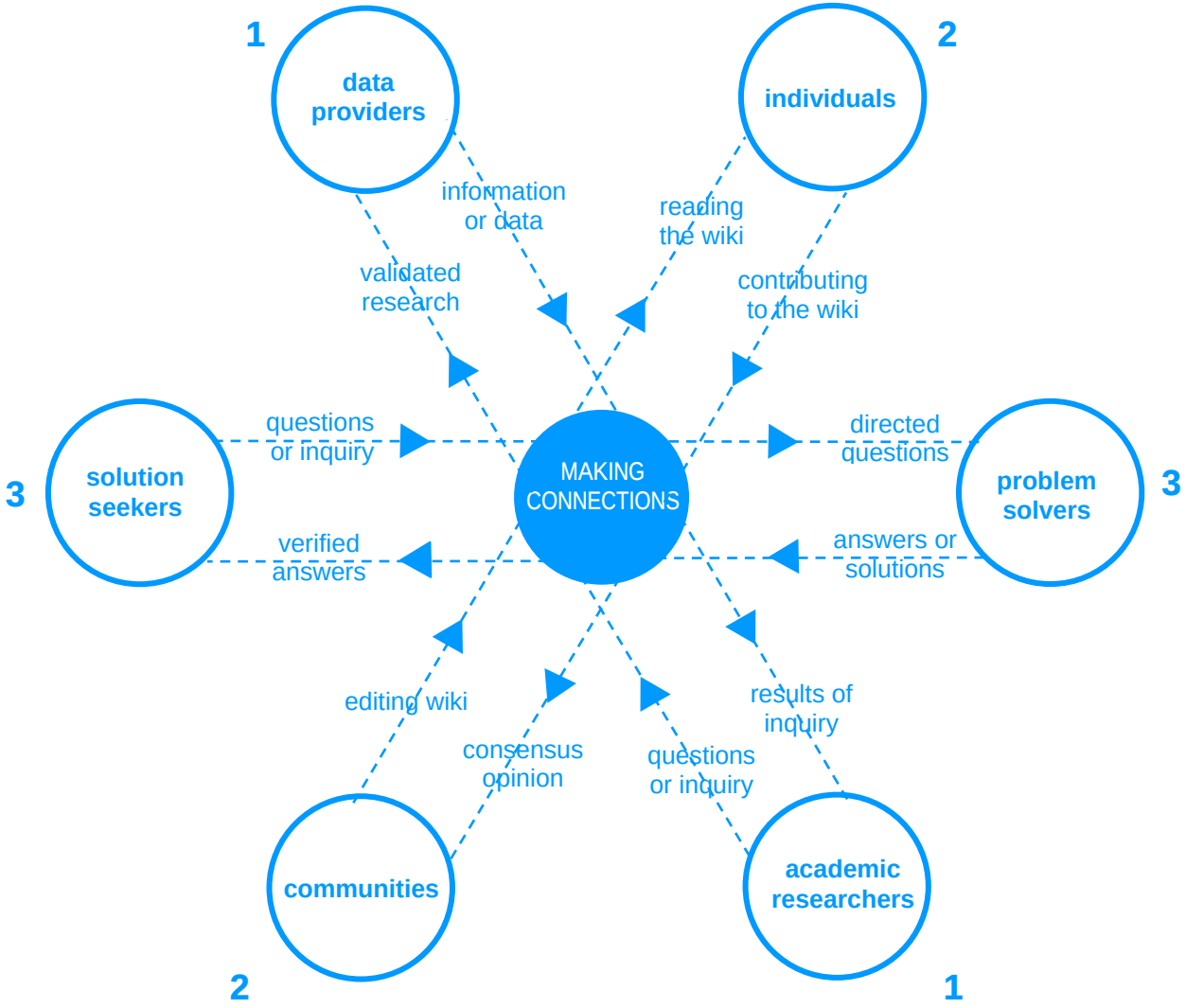
Better connections with the academic community

Introduction

Just over a year ago, the RIBA Research & Development Department established a virtual knowledge sharing environment which could be used by architectural researchers and practitioners. A software application called a wiki was selected for this purpose - wikis are websites which anyone can edit using only a normal web browser - and a pilot wiki has been established which is free to operate and simple to administer. Before committing further resources, the RIBA applied to The Centre for Excellence in Teaching and Learning through Design (CETLD) for funds to test the approach that has been taken and to explore any new opportunities which might exist. This report investigates ways in which information and communication technology can support virtual knowledge networks and makes recommendations for taking the project forward. The theme of this report is 'making connections' - these connections are many and various, but three are drawn on the next page and introduced below.

First, a key objective of the wiki is to connect the two principal sources of architectural knowledge and research: the academy (academic and applied research) and practice. Much of the profession's knowledge is created through a cycle of continuous feedback between these two sources: practitioners supply architectural data; academic inquiry converts this raw material into a systematic, verified body of knowledge, as shown in the diagram on the opposite page. But too often, this cycle moves in different directions and feedback between the two systems is missing. The RIBA R&D Department plays a pivotal role here, brokering research problems and solutions, and enabling an efficient exchange of ideas, skills, and assets. Starting with a description of the current situation as a baseline scenario, this report proposes three further scenarios which work to close the feedback loop between the academic community and practitioners.

Second, wikis enable large numbers of people to work together online using an open, democratic process of peer review and editing to create an unlimited variety of content, such as directories, databases, catalogues, standards, specifications, and toolkits. This system of commons-based peer production is a unique method of creating knowledge, usually undertaken without any financial reward – perhaps the best known example is Wikipedia. Wikis can also be used to build online databases of information; the RIBA architectural research wiki will act as a repository of knowledge assets – gathering dispersed information into a shared 'knowledge bank' of relevant case studies, papers, dissertations, and other outputs of researchers which users can read, bookmark and download. The first scenario in this report proposes that the RIBA should create an informal arrangement of online publication, sharing and open peer review of academic research papers – a Commons for Architectural Research.


1
data providers
2
individuals
information or data
reading the wiki
validated research
contributing to the wiki
3
solution seekers
questions or inquiry
MAKING CONNECTIONS
directed questions
problem solvers
3
verified answers
answers or solutions
editing wiki
consensus opinion
questions or inquiry
results of inquiry
communities
2
academic researchers
1

Third, many architectural practices quite rightly regard innovation as their core competence, providing a unique source of competitive advantage over rival firms. The consequence of this view is that knowledge assets should be guarded and kept within the firm. However, permanent reductions in the cost of finding and sharing information are changing the economic equation; many firms, particularly smaller practices, are increasingly finding it more profitable to share knowledge, and even large firms are finding it more efficient to outsource their R&D function. As a result of these changes, new business models are emerging which function as innovation marketplaces, matching 'solution seekers' with 'problem solvers'. Whereas the first scenario was designed to connect *people with information* through online databases and knowledge banks, the second scenario takes the next step - connecting *people with people* by creating an online platform for informal dialogue and the open exchange of information and ideas. The RIBA architectural research wiki has the potential to play a valuable role in such a situation.

In addition, there are links between this project and a number of parallel RIBA initiatives: towards the end of last year, the RIBA approved a proposal to re-organise existing special interest groups and committees into knowledge communities, which would engage members in a virtual network around a series of specialist domains or topics; a recent survey of RIBA members confirmed the need to improve policy making by making better connections between a distributed membership base and the strategic centre of the Institute; the RIBA is moving forward with the planned upgrade and redesign of RIBAnet. It is clear that ideas and intelligence from the RIBA architectural research network are likely to be highly relevant to all of these projects, so that the third scenario in this report recommends an integrated approach, which would bring economies of scale and synergy whilst avoiding duplication of effort and reinventing the wheel. However, the type of connections proposed in the second and third scenarios are necessarily preliminary concepts at this stage – it is recommended that they are explored further as a separate scope of work.

Wikis start off as a blank sheet of paper – a 'tabula rasa' - which is gradually filled in and over-written by the cumulative actions and decisions of the community who use it. It is not necessary, or advisable, for the RIBA to control how this content emerges by constraining or limiting the actions of users. However, small differences in the structure and initial settings of the wiki are likely to be amplified over time by the network, so that decisions taken in the early stages of the project will be critical to its eventual success. To guide these decisions, without imposing prescriptive solutions, each proposed stage in the project is accompanied by a set of inter-dependent patterns or archetypes. Each pattern deals with an aspect of the project - one piece of the overall picture - which can be assembled in different ways depending upon the project's goals and its criteria for success. These requirements will change over the duration of the project, but this 'pattern language' will provide the RIBA with sufficient flexibility to synthesise a range of options – choices which can be exercised when they are needed to match requirements.

CRITERIA THE PROJECT WILL MEET

The following text is extracted from the CETLD Project Proposal dated 16 October 2006.

- Improve knowledge of academic practices for the information age - potential for online information exchange and collaborations to have impact on learning and academic research.
- Improve knowledge of the impact of Information and Communications Technologies upon the practice of design - impact upon the architecture and design research environment
- Provide experience in the harvesting of information from a resource-rich environment - crucial step in "learning through research" at all levels
- Enhance peer group learning through virtual collaborations - informal collaborations for undergraduate students taking first steps in research; more formal collaborations for academic researchers on specific themes and projects
- Incorporates technology that enriches the learning space - creating a virtual community shaping a knowledge-sharing environment
- Links to collections - making more use of V&A, RIBA and RCA collections, linking academic research through links to resources
- Create a partnership for learning and research between scholarly institutions to benefit students and scholars
- Establish a learning-continuum in support of lifelong careers that are sustainable, responsive and extend learning opportunities during and after university - improving take-up of postgraduate studies and research in architecture schools, through showcasing exciting research projects, highlighting crucial and relevant topics for investigation.

RIBA Project Proposal - Description

The following text is extracted from the CETLD Project Proposal dated 16 October 2006.

One of the main aims of the RIBA R&D department is to make stronger connections. The connections are many and in all directions but include:

- between academic research and practice in architecture (and wider),
- between academia and research institutions/applied research,
- between applied research and practice in architecture (and wider).

A further major aim is promoting activity and disseminating research outcomes.

Wiki centred web tools with a strong community/discussion building emphasis seem to offer an ideal way to develop a community focused around the subject of research in architecture and so able to achieve the above aim and more. They offer a powerful yet flexible collaborative communication tool for developing content-specific websites that are kept updated principally by the community itself. They can be based on hierarchical subject divisions, following an original structure, yet are flexible enough to adapt to new thinking and shifts in focus.

The goal of this Wiki is to become a shared, yet very active, repository of knowledge, with the knowledge base and user group growing over time. The dynamic nature of wikis means that the information they contain is more likely to be both current and accurate than that in static knowledge management systems.

"Wikis may be ideal in building communities of practice by creating a collective repository of expertise in a subject area, which is refined over time by the contributions and problem-solving of interested individuals." (Godwin-Jones, 2003)

Wikis grow and evolve as a result of people adding material to the site, so they can address a variety of pedagogical and academic needs - student involvement, interactive and group activities for students, access to resources, external links, project information.

Wikis can be highly suitable for educational use: allow faculty and students to engage in collaborative activities.

It is our intention that the RIBA Architecture Research Wiki will be a dynamic, interactive and collaborative resource to provide information on research to the architecture (and wider) community, nationally and internationally. For it to be the site for:

- informal learning and exchange of information
- potential cross-institutional and cross-disciplinary collaboration.

We want it to:

- be a first point of entry for those engaged or interested in architecture research
- be a showcase for research in academia and practice, flagging up examples of successful collaborations, etc.
- provide knowledge contribution, management and exchange
- build informal theme-based networks
- provide expertise location

and more.

It will be a "community space" where people can deposit and share research, thoughts, ideas, articles, etc, and is peer-reviewed and maintained because everyone in the community can read and edit content.

Whilst we firmly believe all the foregoing to be both true and achievable with relatively little resource there do remain some open ended questions to be asked and answered and decisions to be made. This is why we need funding for research of our own. We need to confirm our convictions with quantifiable research in the community and to seek expert guidance on more technical aspects. The expertise for both of these exercises lay within our own resource and that of our CETLD partner.

We have started a very simple 'proof of concept' wiki at no capital expenditure, with limited content and limited community (~ 20) to test some of our ideas.

RIBA Project Proposal - Outline Plan of Work

The following text is extracted from the CETLD Project Proposal dated 16 October 2006.

Above we note that some questions need to be asked and answered. Preliminary discussions with experts at the Virtual Learning Environments unit at Brighton have confirmed this, and that they have the expertise to assist in the project.

We propose:

1 Undertake an initial research to study alternatives for the openness of the proposed wiki. We expect that some degree of control will be inevitable and will be committing ongoing resource at the RIBA to this but we need to establish the appropriate degree of openness/control. This will have a significant effect on building the community. Here we need to establish by an attitude survey where any obstacles to the uptake of our ideas might lie and how to overcome them.

2 Developing a prototype wiki either new or further development of our 'proof of concept' (http://ribaresearch.wetpaint.com/page/Home). We need to get technical advice and development; build upon initial test wiki on a wiki host or to implement another solution.

3 Develop a structure for the wiki by creating basic organising principles allowing easy navigation through wiki.

4 To lay the foundation for building the wiki community. We expect to start small, focus on one or two teams initially (R&D and Education committees, some Heads of Schools, one or two groups at Brighton and elsewhere). We would nominate someone within each group as a champion to promote involvement and guide new members on how to get the best from the wiki environment.

5 To propose and create ways to keep the wiki relevant to and for initial community to usefully apply so as to ensure it meets a need and has relevant content to encourage sustained wider usage.

RIBA Criteria	Not Confirmed	Some Evidence	Good Evidence
i) A wiki based resource will provide a pre populated (primed) structure for a shared knowledge-exchange and capture environment, with users actively contributing new content, discussing topics and updating existing documentation. We anticipate a larger group of users using it as a reference resource.	14	11	1
ii) The wiki will help to create and cement a virtual community and shape a knowledge-sharing environment that supports the community.	15	10	1
iii) The wiki will be a space designed for the community's communicative and social needs, allowing informal learning from peers, peer review and a unique source of information about research in architecture and of research in architecture	2	23	1
iv) The wiki will: – facilitate wider access to research in architecture in the UK; – provide information and tools for collaborative pooling and development of research capacity; – facilitate links between research institutions and those requiring research, research outputs, whether in professions, government, industry, or communities; – test and implement interchange and dissemination mechanisms of relevance to academic, practice and professional institutions involved in architecture research.'	11	14	1

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RIBA Project Proposal – Criteria for Success

The goals of the RIBA architectural research wiki are bold and ambitious: '*We want it to be a first point of entry for those engaged or interested in architecture research; (to) be a showcase for research in academia and practice, flagging up examples of successful collaborations, etc; provide knowledge contribution, management and exchange; build informal theme-based networks; provide expertise location; and more.'*

A measure of the current level of success for the project was obtained by conducting a straw poll of 26 employees (including 13 RIBA members) within a single architectural practice. The results of this poll showed strong support for the aspirations of the project; however, feedback suggested that whilst *'there was evidence of an infrastructure to support the general intent of the wiki, there was no evidence, even on test basis, to show that it was or could work in the way that is proposed.'* Other matters raised by one of the groups within the practice were:

i) *This RIBA resource, even as a test wiki, has not been widely publicised*

ii) *The resource is not unique – there are other similar networking sites or routes available to practitioners*

iii) *The resource should be made available to Architects, Technicians, Assistants, Students and Practice Librarians*

iv) *Although there may be a marketing benefit in … making use of the trial wiki and providing feedback, there may be issues of commercial confidentiality to consider.*

v) *There is good potential for the wiki to be used as a data base and reference source for publications, legislative documentation or design guides. No amendments should be made to these documents by practitioners. However the dialogue between practitioners in their experience of applying such documentation into design work is of benefit.'*

Everyone taking part in the poll agreed that the current website needed a higher profile in order to be widely adopted by practitioners, specifically that the RIBA as a whole should give the initiative greater impetus and publicity. In view of the results of this poll, and the high level of interest within the practice regarding the project, it is recommended that further market research and testing should be carried out in academic and practice sectors to identify particular aspects and general levels of demand, and to assess how the project is meeting this demand.


16

PATTERNS & SCENARIOS

Each pattern in the report is described using the following format:

Title - the name of the pattern, either the thing created by the pattern, the process of creating it, or some attribute of the solution

A picture - showing an archetypical example of the pattern

The context – a brief, introductory statement describing the 'bigger picture', of which the pattern is a part

Three delimiting diamonds

The system of forces - headline in bold type summarising the issues, goals or problems

The body - background, explanation, variations of the pattern

The solution - headline in bold type describing how to resolve the system of forces, achieve the goal or solve the problem in its context

Three delimiting diamonds

Epilogue – linking the pattern to related patterns

A Pattern Language

Christopher Alexander's 'Pattern Language' [2] was devised as a framework for structuring the implicit knowledge, or 'know-how', which architects draw upon during their work. Alexander's patterns are information archetypes which can be transferred from a general situation and applied to many. By emphasising the abstract principles that underpin common design problems, and showing how repeated types of problem can be resolved within a given context in terms of generic patterns, this method avoids any prescriptive solutions or simplistic check lists. Instead, it helps architects to find their own solutions to problems in an informal, intuitive way - and to share their solutions with other people.

Alexander's framework can be used to gain insights into a wide range of complex, dynamic systems, not only the built environment. The RIBA project is complex because it involves people, not only technological issues, and the behaviour of people cannot be easily determined. Whilst most technical problems can be solved by breaking the problem down into separate parts using routine step-by-step analysis, complex systems require a more holistic approach. Thinking in network patterns helps us to study the different parts of a system separately whilst retaining the vital connections which exist between the parts; allowing us to identify parts of the system which can be changed, and to see how change in one part of the network will affect other parts of the network and the system as a whole – seeing the detail and the big picture at the same time.

The 17 patterns for building a viable architectural research wiki described in this report follow the format shown on the opposite page. In Alexander's words: 'Each solution is stated in such a way that it gives the essential field of relationships needed to solve the problem, but in a very general and abstract way – so that you can solve the problem for yourself, in your own way, by adapting it to your preferences, and the local conditions at the place where you are making it. For this reason, we have tried to write each solution in a way which imposes nothing on you. It contains only those essentials which cannot be avoided if you really want to solve the problem.' [2]

The one certainty about information technology is that it will change; any solution now being used will soon be superseded by another application just around the corner. To help the RIBA to respond to this challenge, the networks of patterns are reproduced throughout this report as a set of blank templates which can used to generate alternative solutions. The patterns are also published on the RIBA architectural research wiki; these can be edited, and add new patterns can be added, by clicking on the pencil icons shown on the relevant pages of this report. In this way, it is hoped that the pattern language will be continually refreshed and expanded as lessons are learned and knowledge about the project increases.


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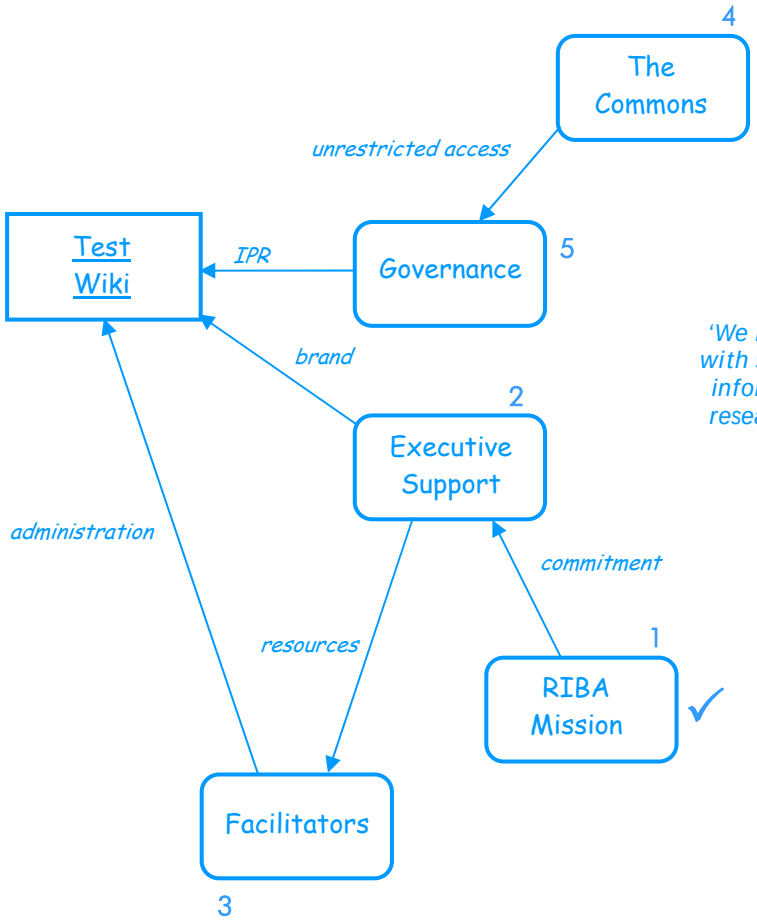
Baseline: Test Wiki



'We have started populating the site with some research papers, news and information related to architectural research, and we are seeding it with information on university-based research groups and projects.'

Baseline: Test Wiki

Start with the pattern marked with a tick: *RIBA Mission*. Turning to this pattern in the report, note that the mission of the RIBA is 'To advance architecture by demonstrating benefit to society and promoting excellence in the profession.' The context of this pattern is a Royal Charter which establishes the Institute as a knowledge-based organisation. One of the aims of the RIBA Research & Development Department has been to make stronger connections between architectural research and practice, which is the rationale for establishing the RIBA architectural research wiki.

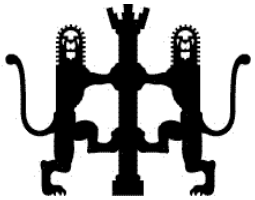
The RIBA has an executive of 170 staff (based in London and regional offices) which coordinates the activities of the RIBA and allocates central resources - the issues involved in these tasks are set out in the pattern *Executive Support*. Wiki communities thrive on grass-roots participation, but some degree of executive support is needed to bridge between the formal hierarchy of the RIBA and the informal network of the wiki. The resources needed by the wiki include human assets (a facilitator), physical assets (wiki technology), and intangible assets (governance and brand).

The pattern *Facilitator* describes some of the technical and administrative tasks which are needed to design, operate, and maintain the wiki; however, an important aspect of the job of the wiki facilitator is working with people, and encouraging members to support the project. The current wiki facilitator is Anna Gagliano, who is the Knowledge and Research Manager within the RIBA Research & Development Department. At the moment, the pattern *Facilitator* includes a deliberate strategy of priming the wiki with content in order to get the project off the ground.

Most public wikis allow users to remix content – usually with 'some rights reserved.' The pattern *The Commons* explores the implications of placing minimal restrictions on how people use the content on the wiki, explaining the reasons for this approach and its benefits. Note that the current test wiki does not have an explicit policy regarding intellectual property rights. A subsidiary pattern of *The Commons* is *Governance*, and a recommendation of this report is that a policy for IP protections is required which is consistent with the pattern, *RIBA Mission*.

The RIBA research wiki has been operating for about 18 months as a 'proof of concept' site with no capital outlay, limited content, and a small number of users – it is described by the RIBA as 'a toe in the water.' The recommendations listed in the patterns for this scenario are short-term measures which can be quickly implemented in order to correct obvious problems and place the wiki on a stronger footing.

1 RIBA Mission



Context:

The RIBA was founded in 1834. Its charter binds the Institute to:
'The advancement of architecture and the promotion of the acquirement of the knowledge of the various arts and sciences connected therewith.'

♦ ♦ ♦

The RIBA is the UK body for architecture and the architectural profession. It employs 170 executive staff in its London and regional offices, providing support to more than 40,000 members worldwide in the form of training, technical services, publications and events, and sets standards for the education of architects, both in the UK and overseas.

The RIBA Research & Development Department plays a key role in fulfilling the RIBA's mission to be a knowledge based organisation. According to its website, the R&D Department aims to act as a matchmaker between:

- those with a research capability, such as practices, schools of architecture, other academic institutions and research institutions
- those with a need for research, such as government, commercial organisations, professional groups, industry, practices, charities and representational groups
- those with funds for research, such as research councils and funding bodies, national government funding sources, EU and other international governmental funding sources, industry, commerce and representational groups

The other main aim of the R&D Department is to:

- publish, encourage publication and otherwise disseminate and implement the outcomes of research for both applied and academic purposes

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In 2005, the RIBA commissioned a strategic study into the future of the profession: *Constructive Change*. [3] A key recommendation of this report was that the Institute should 'become the knowledge management, market intelligence and research focus for the architectural profession'. In response to this recommendation, the RIBA has recently approved a programme to transform its current operational structure from the ground up by amalgamating each of the various working groups, linked societies and client forums into a more autonomous arrangement of RIBA Knowledge Communities, each centred on a subject of special interest. Communities will consist of a core group of up to eight experts, led by a 'Knowledge Champion'. This group will be supported by a wider Member Forum and a Public Forum which are linked as a distributed, virtual network. The process and outputs of each knowledge community will be stored in a 'Knowledge Bank' which can be accessed by the community.

The recommendation of *Constructive Change* was confirmed by a survey of RIBA members in March 2007, which advised Council of the 'need to engage RIBA members better and to strengthen the base from which the RIBA takes policy ideas.' In order to create effective policy, the RIBA needs a complete and detailed description of its environment and the various forces which affect this environment. Each member holds a small piece of the entire picture - a system of networked knowledge communities would enable the RIBA to assemble the 'big picture', drawing together the knowledge and insights of each of its members to help inform a strategic vision for the future of the profession.

The RIBA architectural research wiki is currently trialling the use of technology for managing knowledge which can be used to support these knowledge-based initiatives and help to create the appropriate networks. It is also possible that the lessons learned from the test wiki could be used to guide the planned upgrade and redesign of the RIBA's electronic network of members – RIBAnet - later this year.

Therefore:

Consider how the lessons learned by the R&D test wiki can be adopted by other RIBA initiatives for managing knowledge.

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The pattern *RIBA Mission* needs to be translated into a set of policies, strategies and operational procedures which will be carried out with the help of the pattern *Executive Support* and in accordance with the normative requirements of the pattern *Governance*.

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2 Executive Support

Context:

Social methods of knowledge management operate within an informal horizontal structure of distributed, autonomous teams; but a formal, arrangement is also needed to ensure that resources are allocated in an appropriate way from the centre.

'Executive sponsorship acts as a bridge between the hierarchical structure of the formal organisation and the horizontal structure of communities.' Etienne Wenger [4]

♦ ♦ ♦

Wiki communities can emerge as a result of a group of people getting together of their own accord around some shared area of interest, or management can identify a need to engage grass-roots participation and encourage people to form a suitable network. In either case, some combination of top-down support and bottom-up engagement is needed to sustain the project. The architectural research wiki was initiated by the RIBA; it has attracted an encouraging level of support from members, but in order to attract further participation, it is necessary to confirm an appropriate pattern of *Executive Sponsorship*. This requirement was confirmed by a recent survey of members regarding the RIBA's plans for creating knowledge communities: '… the Institute needs to own and get involved, not just coordinate inputs from the membership.'

Executive sponsorship is best seen as an organisational framework rather than a form of patronage, although such support should not be ignored - it is different from the conventional management of resources because there are no formal lines of reporting or accountability to managers. A framework for executive sponsorship can operate on a number of levels.

Edit this!

- The operation of the wiki needs to comply with all relevant legal requirements and the normative principles of the RIBA; the pattern *Governance* provides the wiki with legitimacy and allows RIBA branding of its process and products.
- The wiki should be linked to the intended strategic outcomes of the RIBA; knowledge assets only have value when they are applied to action and planned outcomes – they have no value in their own right.
- The wiki relies upon the RIBA allocating sufficient resources to the project; these resources will include the time spent by staff on promoting the project and the necessary technological infrastructure.
- The activities and products of the wiki need to be coordinated with other RIBA activities and products; this will avoid unnecessary overlaps, allow synergies to develop with other projects, and prevent confusion.

Therefore:

Determine what resources should be given to the wiki community by the RIBA. Monitor the work of the wiki community and provide encouragement, but allow the community to set its own objectives and manage its own processes.

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The resources needed by the wiki include:

- Human assets – refer to pattern *Facilitator*
- Physical assets – refer to pattern *Participative Web*
- Intangible assets – refer to pattern *Governance*

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3 Facilitators

Context:

A recent survey of members regarding the RIBA's plans for creating knowledge communities reported that: '… the Institute needs to own and get involved, not just coordinate inputs from the membership.'

♦ ♦ ♦

The facilitator needs to understand the technical aspects of the wiki as well as the processes it supports - this person also needs to be able to work well with people.

The wiki facilitator is likely to undertake the role of wiki administrator – the person with the highest levels of privileges needed to manage the various controls of the web site. There are many routine, administrative aspects to the job of managing and regulating a wiki; for example, ensuring there is sufficient disc space and bandwidth for the site to work efficiently, tracking access logs which show how the wiki is being used, overseeing the general settings for the web site (including page and site security), dealing with registration requests, and ensuring that wiki policies are up to date and being implemented. The wiki administrator is usually the person who fixes problems and seeks to continually improve the wiki; for example, working with developers to add new functions to the web site, and generally supervising its overall look and feel.

In addition to this technical role, the wiki facilitator will need to work well with people; for example, organising events to promote the wiki, arranging and chairing meetings with user groups, capturing ideas for improving the wiki, designing training course and providing guidance when

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necessary. A wiki facilitator should understand the operational needs of the wiki community so they can assess the relevance and value of information on the web site, organise content so that it is easy to find, and create links between related parts of the site.

Clearly, the wiki facilitator is a busy person, and it is unrealistic to expect this job to be carried out in somebody's spare time - at the moment Anna Gagliano (Research and Knowledge Manager, RIBA R&D Department) is the wiki facilitator.

Therefore:

The current arrangements for the administration of the wiki are working well; however, these arrangements should be kept under review.

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If the traffic on the wiki increases dramatically, there is a risk that the facilitator could become a bottleneck in the system. There are a number of solutions to this problem, such as the creation of a support desk and splitting the technical and customer-focused aspects of the job. However, the priority for an over-worked facilitator should be to delegate tasks to the wiki community – see patterns *Champion* and *Maintainer*.

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4 The Commons

Context:

How might the RIBA identify and bring together the maximum amount of knowledge, at the lowest cost, and within the shortest period of time so as to solve complex problems?

'The field of knowledge is the common property of all mankind' - letter from US President Thomas Jefferson (1807)

In any community there are resources which are freely available and shared by everyone and other resources which are controlled and protected as private commodities. The term 'free' is used here to denote open access but not necessarily zero cost – in the words of Richard Stallman: 'free, not in the sense of free beer, but free in the sense of free speech' – and in this context, the commons includes any free source of wealth that is shared on an equal basis. The commons has been defined by Lawrence Lessig [5] as 'a resource to which anyone within the relevant community has a right without obtaining the permission of anyone else. In some cases, permission is needed but is granted in a neutral way.' Examples of the commons are natural resources, such as: air, wildlife, and deserts; shared assets, such as: the Internet, public parks, streets, and public buildings; and our cultural heritage, such as: language, musical notation, scientific theories, and mathematical equations.

The notion that anything which is valuable must be safeguarded through property rights and controls is so entrenched that the opposite idea - that some assets are more valuable when they are free to be taken - strikes us as being foolish and idealistic. Yet in the context of knowledge management, the principles of the commons don't merely make sense: in most cases they represent the only way to realise the full economic value of information and to ensure that it is not under-utilised – 'information wants to be free.' An information commons allows people to innovate and create new knowledge by building upon other people's work; it avoids unproductive duplication of research effort and unnecessary

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reinvention of ideas; for example, scientific researchers often make free use of their rivals discoveries to develop new theories – Newton once wrote: 'If I have seen further it is by standing on the shoulders of giants.' Of course there will always be certain critical information assets which people cannot share freely with their rivals, but 'enclosing' an information commons through copyrights and other restrictions ought to be the exception rather than the general rule. In situations where the issues are complex and collaboration is the only realistic route to success, building a shared knowledge environment and employing suitable policies, contracts and technologies for its operation can be a highly effective approach.

Historically, private individuals who wished to share information publicly without the dead weight of proprietary copyright restrictions had only one option: to place their work in the 'public domain', meaning that it would be available for other people to use for any purpose, including commercial exploitation. The recent emergence of a commons infrastructure for sharing digitised information has created an intermediate zone between these alternatives. This system is still at an early stage of development, but a combination of policies for open content, legal contracts (such as the Creative Commons Licence which applies to this report) and new web technologies are now available, making it possible to access and integrate knowledge at a far lower cost and in a much faster way than traditional approaches whilst retaining an appropriate level of control.

Therefore:

Establish the wiki as a collaborative commons for academics and practitioners to share knowledge and ideas – create policies and legal contracts which encourage sharing and the reuse of information, and provide technology that makes knowledge easy to access and share.

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The emergence of a commons infrastructure for sharing knowledge has been possible due to recent developments in information and communications technology, particularly the permanent reductions in the cost of sharing digitised information, which are now effectively zero. However, the motive for sharing information is a social phenomenon, and conversely, the barriers to sharing information are usually cultural rather than technical issues. The pattern *Peer Production* is frequently linked to *The Commons*; it explains why a collaborative approach does not necessarily require financial incentives. The pattern *Governance* describes the mechanism for regulating a collaborative commons infrastructure.

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5 Governance

Context:

Normative requirements for governance are the foundations of the project.

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The project needs to comply with all relevant institutional and legal requirements in order to operate in a legitimate way. Systems should be established to manage internal and external risks associated with the project, including site security and improper use.

Any wiki requires a set of basic rules or principles which determine how it will be used. When the number of people collaborating on the wiki is small it is feasible that these rules are not written down and the wiki is governed by informal consensus – refer pattern *Social Capital*; however, as the wiki grows it is important to document the fundamental rules and principles which govern the relationship between the wiki, its owner and its users. These rules are not simply guidelines about how to use the wiki – they concern issues which could adversely affect the reputation of the RIBA if they are not managed in a proper fashion. The principal issues which should be governed are licensing, accreditation, and site security.

Copyright is a legal concept which grants certain exclusive rights to the owner or author of a particular work and restricts the way in which it is used. The digitisation of information has led to difficulties in interpreting copyright law, leading to moves to strengthen copyrights as well as moves to develop alternative system of open source licensing. Open source licensing covers a variety of arrangements which fall between the opposite methods of copyright restrictions and placing information freely in the public domain. The main purpose of open source licences is to ensure that the source information (and sometimes the edited changes) remains freely available after a third party has modified or redistributed

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the information. Two widely used open source licences are the GNU General Public Licence and a range of Creative Commons Licences; note that the No-Derivatives version within this range is used for this report – refer to back cover. Also included within the range of Creative Commons Licences is a share-alike version, sometimes known as a 'copyleft' arrangement.

Most public wikis allow anybody to contribute material or edit content - formal qualifications and accreditation are not needed. Partly for this reason, some people are always eager to criticise a wiki, so that a means of governing the quality and accuracy of the wiki is vital. Methods of quality control include: prohibiting anonymous contributions (although this may not prevent the use of pseudonyms); selecting an expert group to check content; providing a user rating system which provides an aggregated quality score; and attaching a means of deliberative debate alongside each page, such as a threaded discussion forum or a separate discussion page.

Open access to public wikis means that they are often a target for malicious use and sabotage. In one sense, wikis are vandal-proof because versions of pages are stored on the wiki so that unwanted changes can be erased by rolling back to a previous version. However, there are some precautionary measures which can be taken to protect the site from these risks; for example, Captcha is a system which can only be operated by humans, so that it is able to protect the site from machine-operated spamming devices.

Therefore:

Document the normative requirements for using the wiki and post these requirements in a prominent position on the site.

Good governance provides the project with legitimacy within the wiki community. It is an essential step in the plan to transfer ownership from the RIBA to grass roots participants - refer patterns *RIBA Mission*, *Academic Community* and *Engage Practitioners*.

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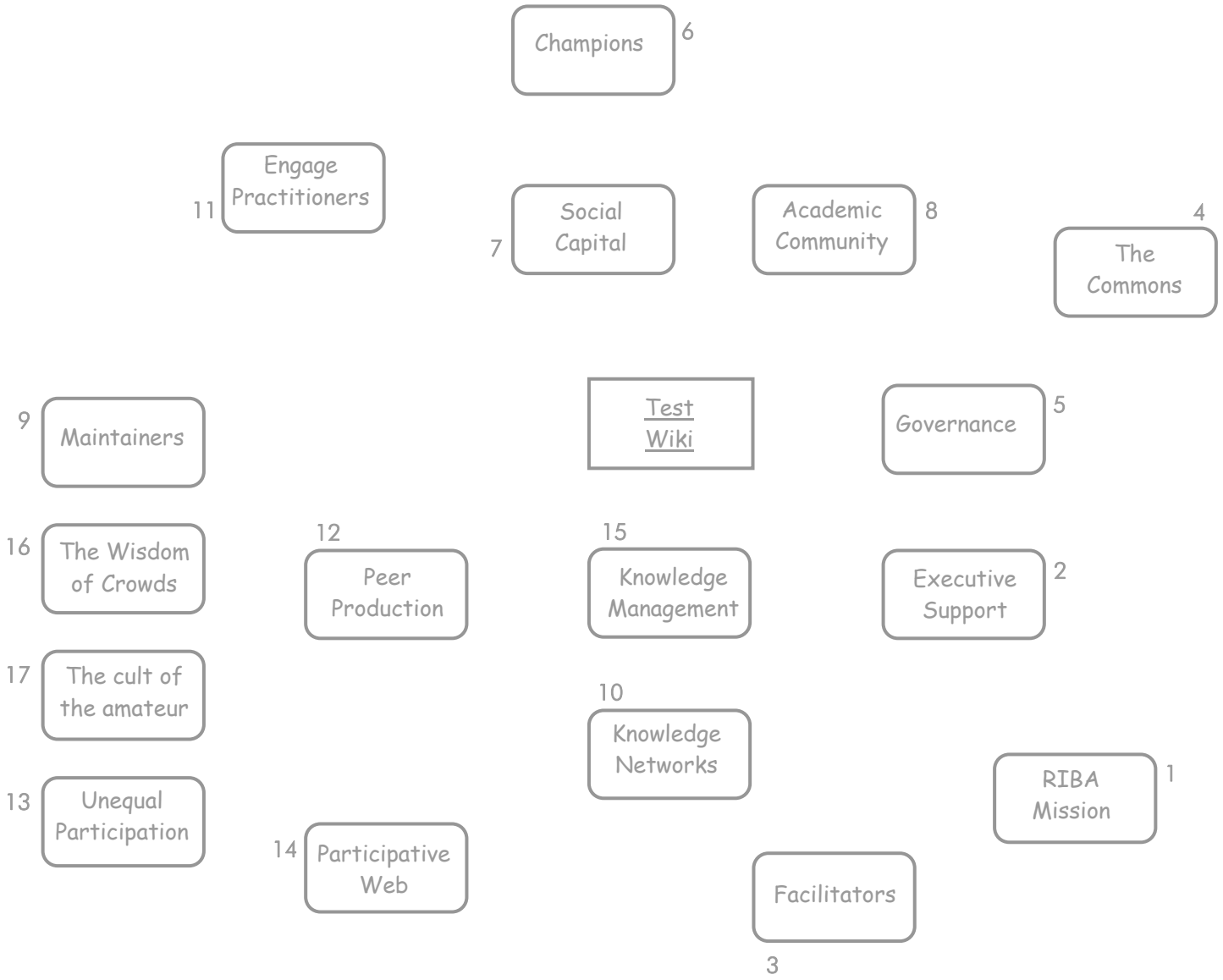

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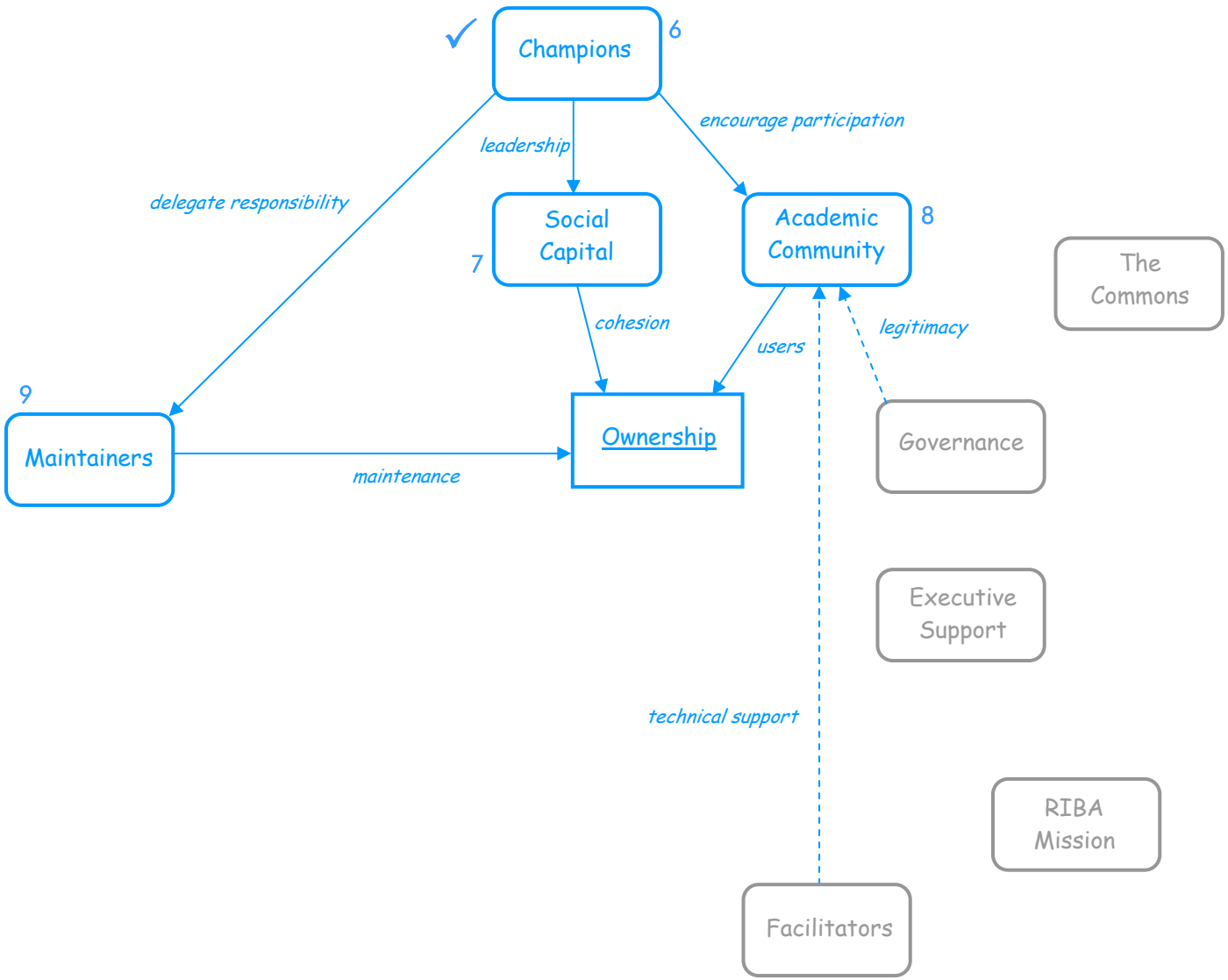
Baseline: Test Wiki

Write a pattern language to describe the components and inter-relationships of your baseline scenario:

1. Use the network you have created on the opposite page and the patterns in this report.
2. Add new patterns if necessary.
3. Start by stating the overall problem which you wish to resolve; then introduce the patterns which deal with this problem.
4. Continue adding subsidiary patterns until the solution is complete.


36

Scenario 1: Ownership



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Scenario 1: Ownership

The scenario *Ownership* adds four patterns to the previous scenario: *Champions*, *Social Capital*, *The Academic Community*, and *Maintainers*. The objective of the RIBA within this scenario is to decentralise responsibility for the wiki, transferring the task of maintaining the wiki to grass roots participants by creating an online Commons for Architectural Research. This scenario starts with the pattern marked with a tick: *Champions*.

A *Champion* is anybody who spreads the word about the wiki, usually as a result of some positive experience when working on the wiki. The RIBA needs to find one or more volunteers who have a good network of connections and would be prepared to encourage people to participate in the wiki. This role does not necessarily require ITC expertise – technical skills are useful, but leadership skills are more important.

The pattern *Social Capital* includes the tacit norms and values of the wiki community which are developed and retained through the relationships between members of the group as they work together. An appropriate form of culture needs to be in place so that people can work together effectively as a team – the informal processes which are part of the wiki community's social capital are of equal importance to the more formal processes provided by the patterns *Governance* and *Executive Support*, which were introduced in the baseline scenario.

The pattern *Academic Community* includes academic researchers and students as well as basic and applied research institutions. Academics take data and feedback from practitioners, converting this information into validated knowledge through a formal process of peer review and publishing. Wikis are ideally suited for facilitating this process in a virtual environment - it is suggested that the focus of the wiki during this stage of the project should be the publication and peer review of academic research papers.

Ongoing support from the centre will be needed through the pattern *Facilitator* after ownership of the wiki has been transferred to users, but it is important that RIBA facilitators are not overloaded or else they could become a bottleneck in the system. The recommended solution, made in the pattern *Maintainer*, is to delegate the task of maintaining a page, space or section of the wiki to a volunteer within the wiki community.

This scenario is consistent with the RIBA proposal: 'To lay the foundation for building the wiki community. We expect to start small, focus on one or two teams initially (R&D and Education committees, some Heads of Schools, one or two groups at Brighton and elsewhere). We would nominate someone within each group as a champion to promote involvement and guide new members on how to get the best from the wiki environment.'

6 Champions

Context:

The RIBA must pass ownership of the architectural research wiki from the centre to grass roots participants.

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A wiki leader is someone who is passionate about the wiki's success - someone who has an ability to enthuse support and participation.

The wiki champion will be the person who users most closely associate with the wiki - a person to whom people will turn if they need advice or help when working on the wiki. The main purpose of the champion is to build the required social capital which is necessary for the community to operate effectively, so that the champion is likely to be a volunteer member of the knowledge community rather than a paid executive. This person will have extensive knowledge and experience in a particular subject area, which implies that instead of a single champion for the entire wiki, the load should be distributed among several people, who will each take responsibility for a different part of the wiki.

Therefore:

Find one or more volunteers for this role. This role does need necessarily require ITC expertise – leadership skills are more important.

♦ ♦ ♦

The more technical roles involved in administering the wiki are described in the related patterns *Facilitator* and *Maintainer*.

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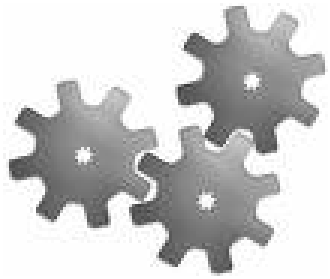
7 Social Capital



Context:

The task of working collaboratively on the wiki requires some form of social relationship – however weak - between participants so that they can co-operate and work together smoothly and effectively: 'Social capital greases the wheels that allow communities to advance smoothly.'

♦ ♦ ♦

Social capital is a measure of the strengths of the relationships and cohesion between people in a group or network.

Social capital relates to the connections between individuals, rather than any properties of the individuals themselves - in this way, it differs from physical or financial capital which measures the amount of a particular stock. This concept has been adopted by many organisations (including the World Bank), which believe it is just as important to the performance, prosperity and viability of communities as other types of asset. Social capital accumulates from positive qualities such as tolerance, a sense of belonging, personal support and encouragement, clear goals and shared purpose, trust and reciprocity; however, it can be destroyed by factors such as prejudice, apathy, conflicting objectives, and suspicion.

Social capital is relevant to the project for several reasons: it is often argued that social relationships shape the way people acquire knowledge and apply this knowledge to their work, and that the creation of knowledge is fundamentally a social process; social capital permits a set of implicit constraints and permissions for participating in the project – these norms go hand-in-hand with the pattern *Governance* and are no less important than formal methods of regulation; high levels of social capital encourage people to give their best to the project; good relationships allow people to test their personal views openly without worrying too much how they will be perceived by others in the group. Some theories of social capital hold that individuals or groups with high levels of social capital will perform better than those which lack this resource, but strong social capital can have a downside if it is used to create cliques within a group or to reinforce 'turf wars' between groups and institutions.

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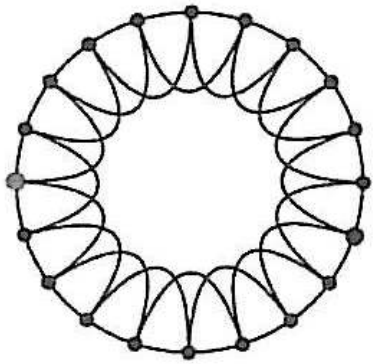
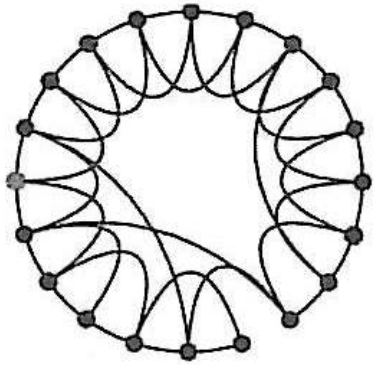
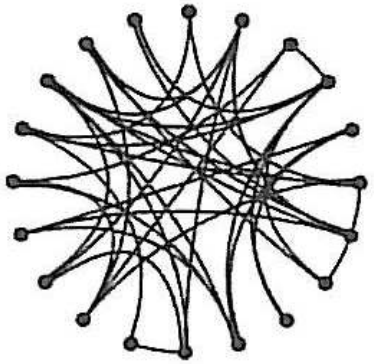


regular network



small-world network



random network

NETWORKS AND THE SMALL WORLD PHENOMENON

The small world phenomenon arises because our world is tied together by close networks of social relationships which have a shorter path length than we usually expect to find – leading to the famous hypothesis: Six Degrees of Separation.

The diagrams shown above were drawn by Duncan Watts and Steven Strogatz to explain this phenomenon. [6]

Regular networks (shown on the left) consist of clusters and cliques (shown as neighbouring points) as exist in real life; however, in this arrangement the network doesn't capture the small-world property because there are too many steps between the different points. By contrast, random networks (as shown on the right) do allow small worlds; however, this arrangement is not accurate either because it doesn't represent social clusters, such as groups of friends and communities.

The network in the centre takes a regular network and rewires a few connections in a random way so as to create a small world with about six degrees of separation, but it also preserves a tightly knit social structure of groups and communities. This diagram explains why we live in a world, and why this fact constantly surprises us: we often overlook the long-distance connections which create small worlds – described by Mark Granovetter in his paper as 'The Strength of Weak Ties'.

The Internet is changing the way in which traditional social networks operate and re-shaping affiliations within these networks. These changes are neither inherently good nor bad, but they have a significant effect on membership bodies such as the RIBA. Traditional models engage people through face-to-face relationships; these models perform well in terms of decision-making, active commitment and message, but often have difficulty in engaging large numbers of people at a grass roots level. On-line networks bring together many more individuals than traditional models, but whilst connections in these groups are denser they are relatively weak; such networks are good at disseminating information to members, but their loose structure means that their processes and outputs can be less effective in terms of direction, activism and voice.

The characteristics of knowledge in these different types of network also vary: close, personal ties in real space communities often produce types of knowledge which are exclusive to individuals or the group, whereas knowledge in an on-line community more closely resembles a public good. These differences are reflected in the RIBA's plans to create a series of Knowledge Communities, which will combine meetings between a small group of experts and wider collaboration with members and the public through electronic forums – see also the pattern *Knowledge Management*.

In a paper called 'The Strength of Weak Ties', the sociologist, Mark Granovetter, demonstrated that in many situations people are better able to find innovative ideas and new information using contacts outside their normal social circle. He explained this result using the theory that these groups tend to reinforce their members' opinions and share common information, whereas weak ties allow people to reach a more diverse population. The small world phenomenon described in the Preface of this report also relies on a mix of strong and weak ties – see opposite page.

Therefore:

Understanding the informal processes which support this pattern is of equal importance to the more formal processes provided by other patterns, such as *Governance* **and** *Executive Support* **– the accumulation of social capital is crucial to passing ownership of the wiki to users.**

♦ ♦ ♦

The social capital of the wiki should accumulate over time as a result of positive interactions between its users; however, social capital can also be fostered and protected by strong leadership which unites participants around a common purpose – see the related pattern *Champions*.

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8 The Academic Community

Context:

'Whilst academic research is subjected to stringent peer review and assessment procedures, it has been argued that this has led to inward-looking results produced more for the self-sustaining benefit of the academic community and less for the wider professional and public good.' [7]

♦ ♦ ♦

New web technologies and practices set a series of challenges and opportunities for universities and research institutions – how might the interests, objectives and working methods of the academic community be managed within a virtual knowledge sharing environment?

A key objective of the wiki is to connect the two principal sources of architectural knowledge and research: the academy (academic and applied research) and practice. Much of the profession's knowledge is created through a cycle of continuous feedback between these two sources: practitioners supply architectural data; academic inquiry converts this raw material into a systematic, verified body of knowledge. Within this context, one of the key purposes of universities and other institutions within the academic community is to regulate the exchange of knowledge in a formal way through established principles and procedures; for example, articles which are published in academic journals and academic research papers are scrutinised in a rigorous process of peer review, or refereeing, carried out by accredited experts.

The advantage of academic peer review is that its outputs are certified against an accepted level of quality – it can usually be assumed (but not guaranteed) that academic research is more soundly based than research by laypersons, and a formal approach helps to ensure that academic work matches the essential criteria of originality, significance and rigour, listed by Jeremy Till in an article published on the RIBA research wiki: 'What is Architectural Research?' [7] However, the traditional peer review process is far from being perfect and a major reason for its drawbacks

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– described by the British Medical Journal in 1997 as: 'expensive, slow, prone to bias, open to abuse, possibly anti-innovatory, and unable to detect fraud' – is that it was designed many years ago to suit an economic and political model where knowledge was restricted to a privileged few and relatively static. Under a traditional business model, the key issue for institutions and academic journals operating in a competitive market, where research grants and publishing space are scarce resources, is how to translate research into reputation and reputation into money.

Open access publishing and self-archiving removes these constraints, making academic papers freely available on the web. Usually, these papers are either pre-prints or have already been peer reviewed and cannot be publicly edited, as is the case with open content / source publication – see pattern *Peer Production*. Open access can reach a far wider audience in a much faster time than traditional methods; however, built into the traditional business model is the cost of filtering information through peer review, so that open access challenges not only paper publishing but also the peer review process. For this reason, there is interest within the academic community in developing processes for open peer review.

Open peer reviews are conducted by anyone willing to participate, rather than by invited experts. Accreditation is decided after the event based on the results of the review instead of before the event on the basis of formal qualifications – filtering and ranking can be performed by page-ranking algorithms, as used by Google and Amazon. Many open access sites use discussion threads attached to papers to capture deliberation and comments, and the identity of reviewers is usually mandatory, which makes the process more transparent than traditional peer reviews.

Therefore:

The RIBA architectural research wiki could be developed in ways which allow the academic community to take advantage of the benefits of new web technologies – what might be called Research 2.0 – whilst maintaining the rigour of the traditional academic process.

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The attitude of the academic community towards new web technologies and practices can be ambivalent or hostile; some academics fear that the new model might sweep away traditional methods, flattening expertise and reducing the privileges of the academic community – refer to the pattern *The Cult of the Amateur*.

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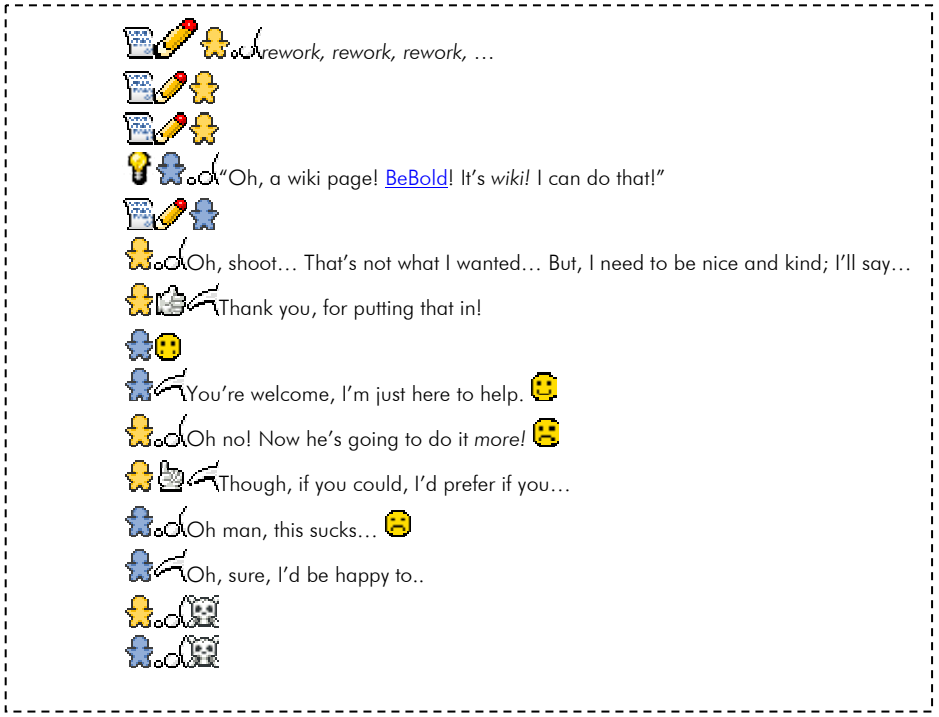


In the situation shown above:

'Yellow is putting a big investment of reworking into a page. Blue comes along, and adds something, but it really doesn't fit Yellow's work flow. Yellow can refuse Blue, leaving a bad taste in everyone's mouth, or Yellow can accept Blue's contribution, but then Yellow's plans are messed up, need to be redrawn, and thus Yellow is demotivated. This suggests that "anybody can edit anything" can motivate small investment contributions but punish large investment contributions.'

Source: http://www.communitywiki.org/en/SocialReworkingDilemma

9 Maintainers

Context:

When people work together using a wiki, they are often uncertain about what they should do; many people are uncomfortable editing somebody else's work might, or they may simply prefer to leave the work to the person who originated the document – see opposite page.

♦ ♦ ♦

If everybody is uncertain about what somebody can do, it is possible that nobody will do anything, and the wiki will be neglected.

Documents produced on a wiki are meant to be produced using an open, free-from editing style, where everybody has equal rights in editing a document, and the concept of a final, polished product or an individual author who is associated with a piece of work is often discouraged. This ideal is fine in theory, but very few people are used to working in this way - most people prefer a more structured approach. The diagram on the previous page shows a typical sequence of events where 'anybody can edit anything' which frequently leads to a situation where people who make large contributions (as Yellow) can become demotivated and will stick with making only small investments of time (as Blue).

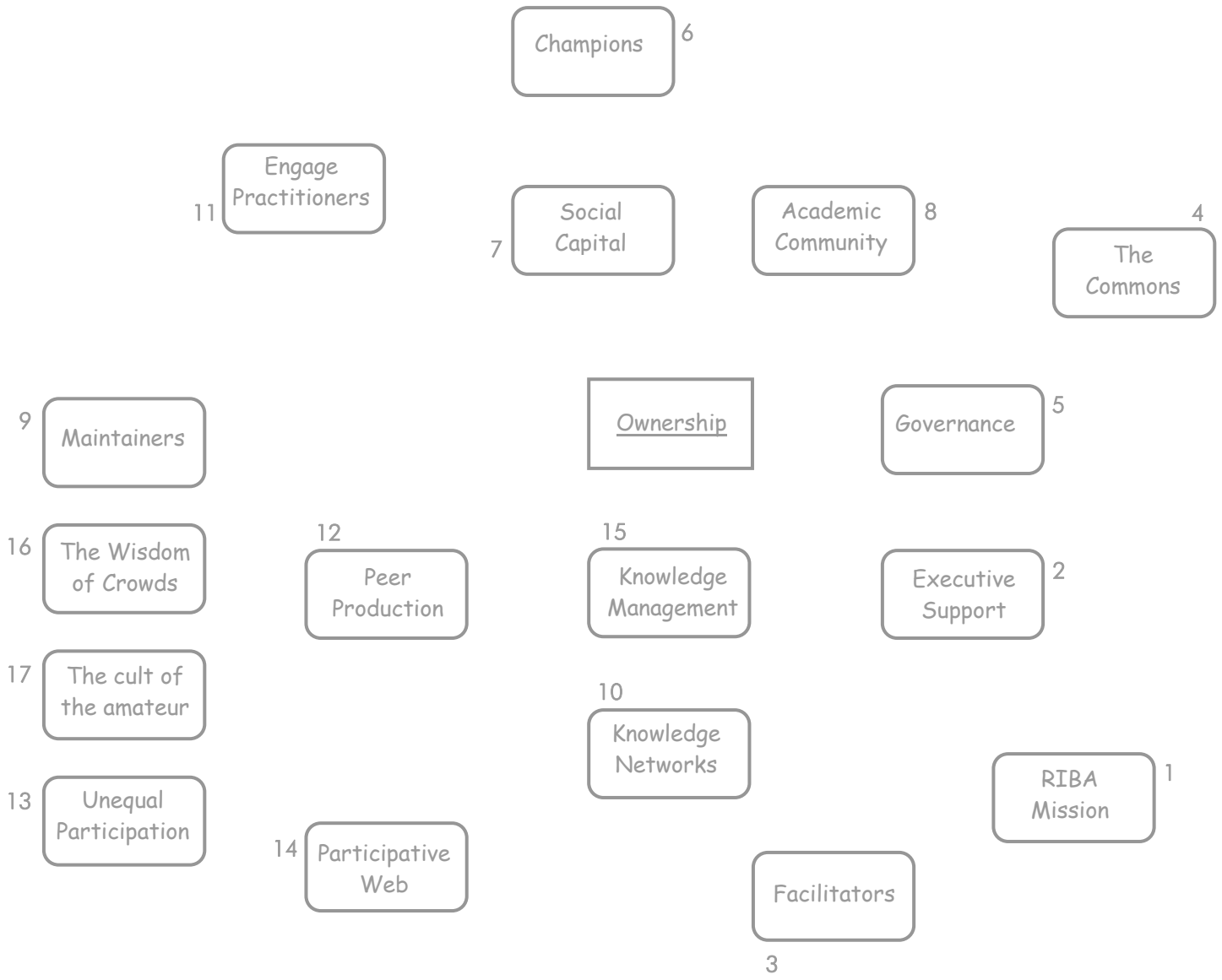
Therefore:

Transfer responsibility to an individual who will maintain a page, space or section of the wiki.

♦ ♦ ♦

The Maintainer will work as part of a team – refer to the patterns *Champions* and *Facilitators*

Edit this!



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Scenario 1: Ownership

Write a pattern language to describe the components and inter-relationships of your scenario:

1. Use the network you have created on the opposite page and the patterns in this report.
2. Add new patterns if necessary.
3. Start by stating the overall problem which you wish to resolve; then introduce the patterns which deal with this problem.
4. Continue adding subsidiary patterns until the solution is complete


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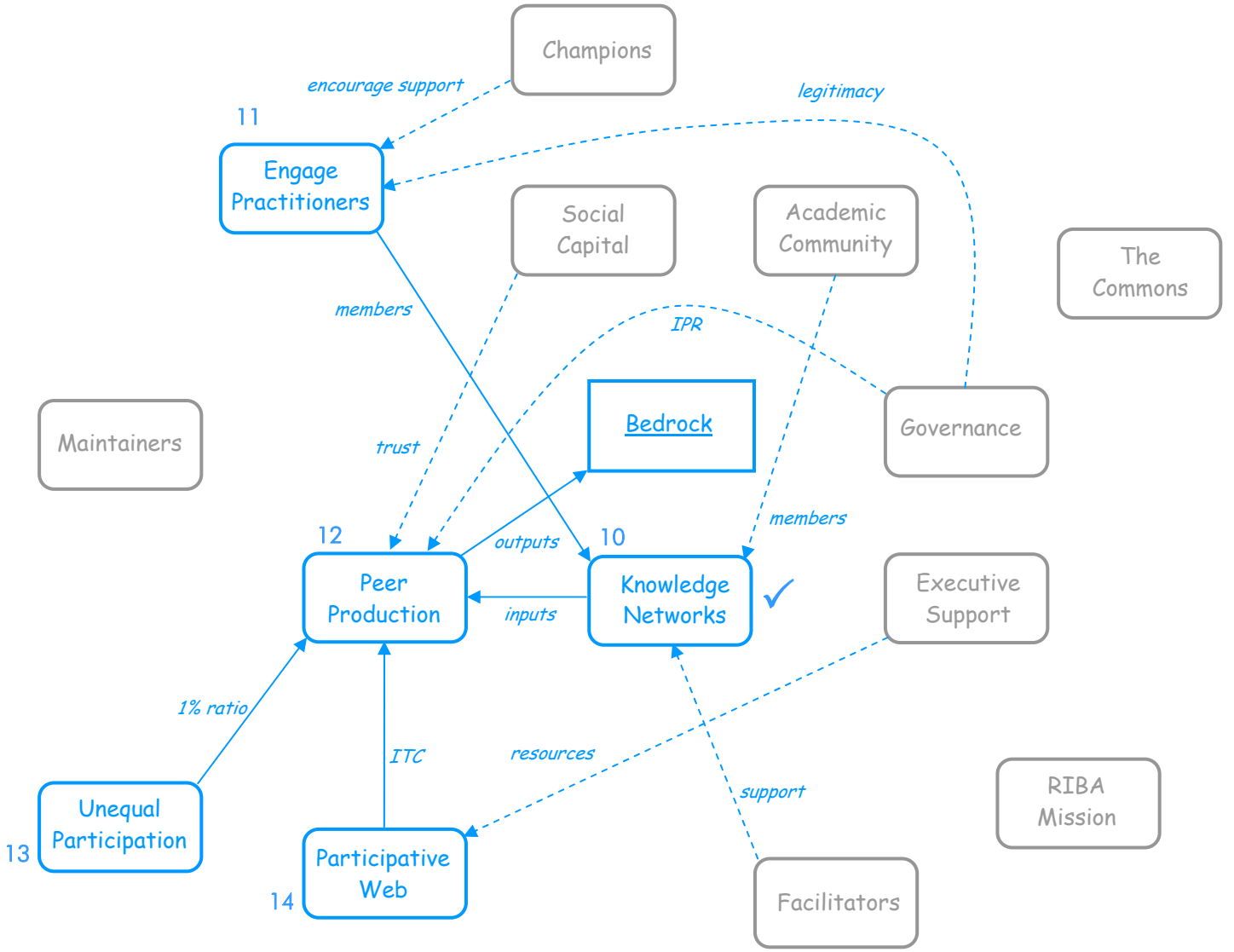
Scenario 2: Bedrock



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Scenario 2: Bedrock

The scenario *Bedrock* adds five further patterns to the previous scenario: *Knowledge Networks*, *Engage Practitioners, Peer Production*, *Unequal Participation* and *Participatory Web*. The aim of this scenario is to encourage RIBA members to participate in the wiki community. Whereas the first scenario is designed to connect *people with information* through online databases and knowledge banks - this scenario takes the next step: connecting *people with people* by creating an online platform for informal dialogue and the open exchange of information and ideas.

This scenario starts with the pattern marked with a tick: *Knowledge Networks*, which describes three models for connecting people to people so as to find information and ideas: Communities of Practice; a Knowledge Studios or discussion forum; and an Innovation Exchange.

The pattern *Engage Practitioners* investigates how the wiki could encourage collaboration at all levels of the industry supply chain and become a valuable resource for firms and clients looking for external services. Alternative methods for firms to procure goods and services – internally through vertical hierarchies or externally through competitive markets – are described, and the use of a wiki in the second method is examined.

It is recommended that a process of commons based *Peer Production* is established to expand the wiki community and add more content to the wiki. In place of central management, work is co-ordinated across the Internet in a collaborative way, using open access, trust and soft security established by the patterns, *The Commons, Social Capital*, and *Governance*.

The pattern *Unequal Participation* states (as a general rule) that only 1 per cent of visitors will contribute material to the wiki; 9 per cent of visitors will edit material and help to maintain the wiki; but at least 90 per cent of visitors will not contribute in any way. This pattern suggests that attempts to stimulate peer production using the wiki are unlikely to succeed until the *Knowledge Networks* have achieved a critical mass.

Peer Production requires a mechanism of integrating a large number of small chunks of information into a finished whole; the pattern *Participatory Web*, in particular wiki technology, provides an ideal solutions to this problem, but other Web 2.0 tools such as blogs, RSS feeds, social book-marking and social networking services could be combined with the wiki.

Support for the *Knowledge Networks* is provided via *Facilitators*, and *Executive Support* will also be needed to supply the required ITC resources.

10 Knowledge Networks

Context:

People tend to search for information about their work by communicating with other people - using their existing contacts and informal conversations.

'Social relationships are important to the ability of individuals to gather knowledge and to perform their work. The creation of knowledge is innately a social process among individuals.' Robin Tiegland, 2003. [8]

♦ ♦ ♦

In every working environment, people have always gathered together in an informal way in order to learn from each other. Such networks are sometimes described as 'communities of practice' - informal groups which exist alongside the formal hierarchy of the organisation, but are invisible to it, such as the office grape-vine, mentoring relationships, and some CPD networks. A community of practice is more than a group of colleagues - Tom Stewart explains the term in this way: 'Groups that learn, communities of practice, have special characteristics. They emerge of their own accord: Three, four, twenty, maybe thirty people find themselves drawn by one another by a force that's both social and professional; they collaborate directly, use one another as sounding boards, teach each other, strike out together to explore new subject matter … you cannot create communities like this by fiat, but they are easy to destroy. They are among the most important structures of any organization where thinking matters; but they are, almost invariably, subversive of its formal structures and strictures.' [9]

Edit this!

Knowledge networks, and the knowledge which they produce, can vary depending on how their members are connected. The term 'community' denotes a network where people tend to interact face-to-face and social ties between members are fairly strong, whereas the term 'network of practice' is a more general concept, which includes groups where social ties are weaker (such as professional bodies), as well as electronic networks of practice, which are connected by the Internet. The characteristics of knowledge created and owned by these different types of network will vary. Knowledge owned by communities is usually confined within the group and concentrated in a small number of people at the core of the community. In an electronic network, everyone is connected to everyone else and knowledge is less excluded, so that the products of these networks tend to resemble the characteristics of a public good.

Not all knowledge networks emerge spontaneously - it often happens that managers recognise their importance and encourage their growth, which is the situation with the RIBA architectural research wiki. However, knowledge networks cannot be managed like project teams and other formal work groups: they do not produce deliverables, agendas, or work to deadlines; they are not accountable to the formal organisation. Having recognised their importance, the best way for managers to cultivate such groups is to give them the resources they need and allow them to manage themselves – as Tom Stewart puts it: 'Fertilise the soil but stay away from the actual husbandry.' [9]

Therefore:

Identify and engage the relevant communities of practice inside and outside the RIBA; provide them with the resources they need – particularly tools that will encourage them to connect more closely with the project; don't attempt to tie them into the formal organisation.

♦ ♦ ♦

Whilst many organisations have built electronic networks and formal knowledge sharing systems, few of these systems recognise the informal, social networks which already exist; however, this situation is changing - refer to the pattern *Knowledge Management*.

Edit this!

11 Engage Practitioners

Photograph:
Feilden+Mawson

Context:

'Much of the most innovative research in design, and particularly technology, is founded in practice. However, much of this research remains tacit … For the leading practices, intellectual property is what defines them and sustains them, and they are understandably loath to give it away … We therefore have to find a way to improve the communication of the tacit research carried out in practice, but in a way that does not compromise the value of the individual practice's intellectual property.' [7]

♦ ♦ ♦

For many corporate strategists, business is all about competition, and successful firms are those able to maintain a dominant position in their market place; but other experts are talking about collaboration, trust and level playing fields. Is 'collaboration the new competition'?

At a time when global economic forces and technological change are reckoned to be replacing large-scale, hierarchical organisations with flatter networked structures and supply chains it seems logical that small-scale architectural practices should be winning more work; however, many such practices are complaining that they are being increasingly excluded from larger commercial and government contracts. A possible reason for this situation is a key finding of the RIBA's report Constructive Change (2005), which states that due to their 'introverted design perspective … architects are rarely seen as *team players* interested in interdsciplinary working.' [2] The task of engaging practitioners with the RIBA architectural research wiki could start by promoting the commercial benefits of the project to architects as a collaborative platform for sharing knowledge.
In theory, the most efficient way to procure goods and services is through competitive markets; in practice, the costs of collaboration (searching for information and advertising, co-ordinating different processes and products, agreeing prices and collecting payments etc.) can mean that it is

cheaper for firms to manage many aspects of the business internally. This situation is reflected in Coase's Thoerem: 'A firm will tend to expand until the cost of organising an extra transaction within the firm equals the cost of carrying out the same transaction on the open market.' However, permanent reductions in the cost of many market transactions due to developments in ITC are causing firms to buy things from other firms which they once produced themeselves. Coase's Theorem is still valid, but it is more usefully stated in an opposite sense: 'The size of a firm will decrease until the cost of organising an extra transaction externally is no longer cheaper than the cost of carrying it out itself.'

Despite a current trend towards mergers and consolidation within the UK construction industry, the size of most architectural firms is very small – more than half of all architectural practices employ fewer than 10 people. A report about knowledge management for the RIBA by Artemis Consulting and David Haynes Associates (2000) advised that the small size of many architectural practices limited what they could achieve in comparison to larger firms, so that they would tend to rely more on external methods for managing knowledge. The RIBA architectural research wik is not the only external resource available to practitioners in this context, but it does have the potential to attract smaller practices who wish to become more competitive by collaborating, as well as creating a market for brokering between small firms and larger practices and clients. As more practices join the wiki, the 'network effects' of collaboration are likely to grow and encourage further participation.

Therefore:

Establish the wiki as a business network for end users and suppliers who wish to share knowledge and ideas – enabling collaboration at all levels of the industry supply chain and acting as a market place for larger firms and clients looking for external services.

♦ ♦ ♦

The previous pattern *Academic Community* explained how an information commons operates in academic communities. However, the practical applications of such research are often proprietary and protected by intellectual property rights - it is this type of knowledge which is usually guarded by architectural firms. It is unrealistic to expect practitioners to share knowledge which is commercially sensitive, but the focus of the wiki is likely to be developing new, innovative ideas rather than established expertise – 'the milk of innovation doesn't flow from cash cows'.

Edit this!

12 Peer Production

Context:

'There are no non-commercial automobile manufacturers. There are no volunteer steel foundries.' Yocahi Benkler, 2006. [10]

♦ ♦ ♦

The fact that people come together to produce successful, high-quality information goods in a voluntary way and without financial reward is counterintuitive. Why does it happen? Can we predict when people will share information using the wiki and when they will not?

Peer production is a method of producing goods and services which turns many aspects of commercial and socially funded projects on their head. Instead of an individual or team being paid to create something, peer production uses the creative energy of large numbers of people who work without any financial reward. In place of central management, the work is co-ordinated across the Internet in a collaborative way with only a minimal set of rules. Rather than working to a deliberate, detailed plan, projects are shaped through an informal, emergent consensus. In place of intellectual copyright protection, the product is often freely available as an open source, or commons-based product, using 'copyleft' arrangements, which allow users to share, remix and reuse the material legally; for example, the licence which is applied to this report.

Peer production has been used recently to produce a range of successful, high quality information goods and services: Slashdot is an online news publishing system; Wikipedia is an on-line encyclopaedia; Linux is an open-source, operating system for computers; Skype is a programme that allows people to make free telephone calls over the Internet by using idle computer power and Internet connections; Google uses a page ranking

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algorithm which combines the judgments of millions of Web page creators to determine the most relevant search results; and Lego has created a range of virtual products which users can download and assemble, before ordering their finished design as a set of real parts.

Peer production is not a new phenomenon – the Oxford English Dictionary was compiled in a similar way by volunteers using quotation slips which were sent through the post. However, Internet-based technology has made peer production a more viable economic model. Peer production is well suited to creating and sharing knowledge within the academic community – after all, academics willingly provide articles without charge to publishing companies in exchange for peer recognition. It is also suited to practitioners, who can share the benefits of creating and sharing knowledge with their peers for a minimal investment. Nevertheless, peer production works better in some situations than others, and according to Dan Tapscott [1], peering works best when the following conditions are present:

- The object of production is information or ideas, which keeps the cost of participation low for contributors
- Tasks can be chunked into small pieces that individuals can contribute in small increments, independently of other producers
- The cost of integrating those pieces into a finished end product, including the leadership and quality control mechanisms must be low

Therefore:

Reduce the cost and effort needed to contribute to the wiki and increase the rewards of participation in order to make the process viable.

One of the principal problems with peer production is the 'free-rider problem' which refers to a situation where some individuals make use of a common resource but fail to make a fair contribution towards its cost – refer pattern *Unequal Participation*.

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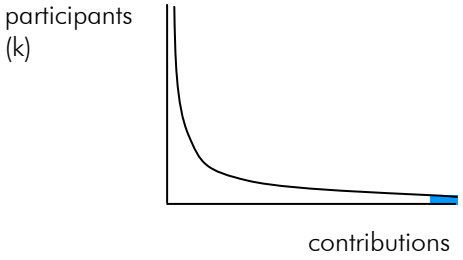
13 Unequal Participation



Context:

Properties of social networks often follow a 'power law where the probability of a particular attribute of k will decrease rapidly with an increase in k distribution', as shown in the diagram on the left.

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A large number of people make very few contributions; a few people – less than 1 % - make the overwhelming majority of contributions.

Results from surveys of a range of public online communities carried out since the early 1990's indicate a '1% Rule' as explained below:

- 90% of users read or browse but do not contribute
- 9% of users contribute occasionally - usually by making minor edits, tidying up the site, or adding links to other web pages
- 1% of users participate very often and account for the overwhelming amount of contributions

Solutions to the problem of unequal participation in the CETLD wiki might include the following suggestions:

1. **Differentiate the web site for different types of users - don't expect everybody to contribute**

   The wiki will attract different types of visitor with very different needs. The vast majority of visitors will only read or browse the website as a reference resource and will not require anything different from a conventional, published website. For this type of user it is important that the web site provides a user-friendly and attractive interface - don't make the site harder to read (or to print) or less appealing than a normal website just because it is a wiki. A smaller number of visitors will 'synthesise' material, making minor changes to the wiki content if encouraged to do so, but they will not necessarily require wiki page-editing functionality to do this - threaded discussions and other Web 2.0 tools might work equally well. Only a tiny percentage of visitors will make full use of the wiki's ability to add original material.

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2. **Pay attention to the 1 per cent of visitors who create original material – consider offering a range of incentives where appropriate**

   These people are at the leading edge of the wiki – they will determine the overall quality and reputation of the project and it makes sense to treat them as a special case: consider inviting people directly to write material; think about paying a few writers to add content; increase the proportion of high quality work by making it prominent on the wiki, where it will attract more attention from readers and synthesisers.

3. **Measure web usage and monitor the results over time**

   The 90-9-1 rule is an empirically proven statistic which can be used to benchmark the wiki against other tools and to track variations over time. Most wikis create web logs for visitor usage as a matter of course – they can be readily added if they are not provided

4. **Use the 90-9-1 ratio to make realistic forecasts for the wiki**

   Applying the 90-9-1 ratio to the RIBA membership, and assuming say 20% of members registered to join the wiki community, the predicted levels of participation according to the 90-9-1 rule would be 7,200 readers, 720 synthesisers, and 80 writers.

5. **The 90-9-1 ratio is a useful average and rule of thumb, but it needs to be interpreted within a given context**

   A change in the 90-9-1 ratio need only be marginal to have a significant effect - if only 1 per cent of readers become writers, then the number of writers would almost double. The 1% rule applies to public wikis – levels of participation are higher for wikis behind firewalls.

Therefore:

The 1% Rule cannot be changed significantly because it reflects the structural property of public social networks, but it can be improved.

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The 1% Rule is sometimes used to reinforce allegations of bias and mediocrity - the voice of a tiny minority with a particular hobby horse or axe to grind can lead to the perceived 'shrill opinion' and lack of balanced representation – refer to the pattern *The Cult of the Amateur*.

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14 The Participatory Web

Context:

'I wanted the Web to be what I call an interactive space where everybody can edit. And I started saying 'interactive', and then I read in the media that the Web was great because it was 'interactive', meaning you could click. This was not what I meant by interactivity.'

Sir Tim Berners-Lee, inventor of the World Wide Web

♦ ♦ ♦

'Web 1.0 took people to information; Web 2.0 will take information to the people'. Ian Davis

Web 2.0, sometimes called the 'Participatory Web' or the 'Social Web', is sometimes claimed to be a second generation development of online communities and software applications although many experts, including Tim Berners-Lee, maintain the concept is nothing new. Nevertheless, the way in which knowledge is created and managed is bound to be affected by these new ways of thinking, which can be summarised as below:

- Web 2.0 is 'an attitude not a technology'
- New applications are freely encouraged by combining aspects of different types of available software – often termed 'Mash-ups'; for example Goggle Maps
- By contrast to mass communication methods, where content is directed from a provide to consumers, information is created and shared in a participative fashion by users; for example the image library Flickr, where users upload their images for other people to download.
- In place of ready-supplied, integrated applications, users can mix and match from a menu of modular, interoperable components, such as wikis, blogs, RSS feeds, social bookmarking and others, to build bespoke tools and services which exactly meet their needs.

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- Web 2.0 is about collaboration - sharing information and ideas – but not at the expense of reduced profits. Peer production, open source, open content and file sharing approaches can lead to collaborative business propositions which are more attractive than competition.
- Tools such as Google's page-ranking algorithms or Amazon's user reviews enable Web 2.0 to capture the collective intelligence of a large number of people, providing accurate feedback and sound opinion without the need for individual experts and formal accreditation.
- Exploiting the properties of 'metadata' (data about data) using Web 2.0 technologies enables applications to perform 'intelligent' functions – such as Amazon's facility for recommending products based on user preferences.
- By aggregating a large number of low-volume users (The Long Tail), Web 2.0 creates a viable, alternative economic model which suits niche markets rather than providing limited goods and services to a mass market – replacing the economics of scarce resources with abundance.
- Leaders of Web 2.0 communities emerge by gaining the trust of their peers rather than being part of a vertical 'command-and-control' hierarchy. Similarly, information is sometimes verified in dynamic a process which occurs after publication rather than before.

Therefore:

Make the wiki an open platform for collaboration, where users can freely build new ideas, develop new features, add new applications, and create new partnerships and purposes. Keep content on the wiki as open as possible, consistent with governing rules of the RIBA.

♦ ♦ ♦

Knowledge management approaches and web technologies have always gone hand-in-hand - each decade of development can be seen to operate as a closed loop, where the focus of technology switches from the back end or logical infrastructure to the front end or user-interface. The first phase of knowledge management coincided with Web 1.0, which made the Internet navigable. Web 2.0 allows users to connect with each other, Web 3.0 will add intelligence to the Internet, and Web 4.0 is likely to be built around a new range of social networking applications. As these new tools emerge, knowledge management will be able to evolve in new directions – refer pattern *Knowledge Management*.

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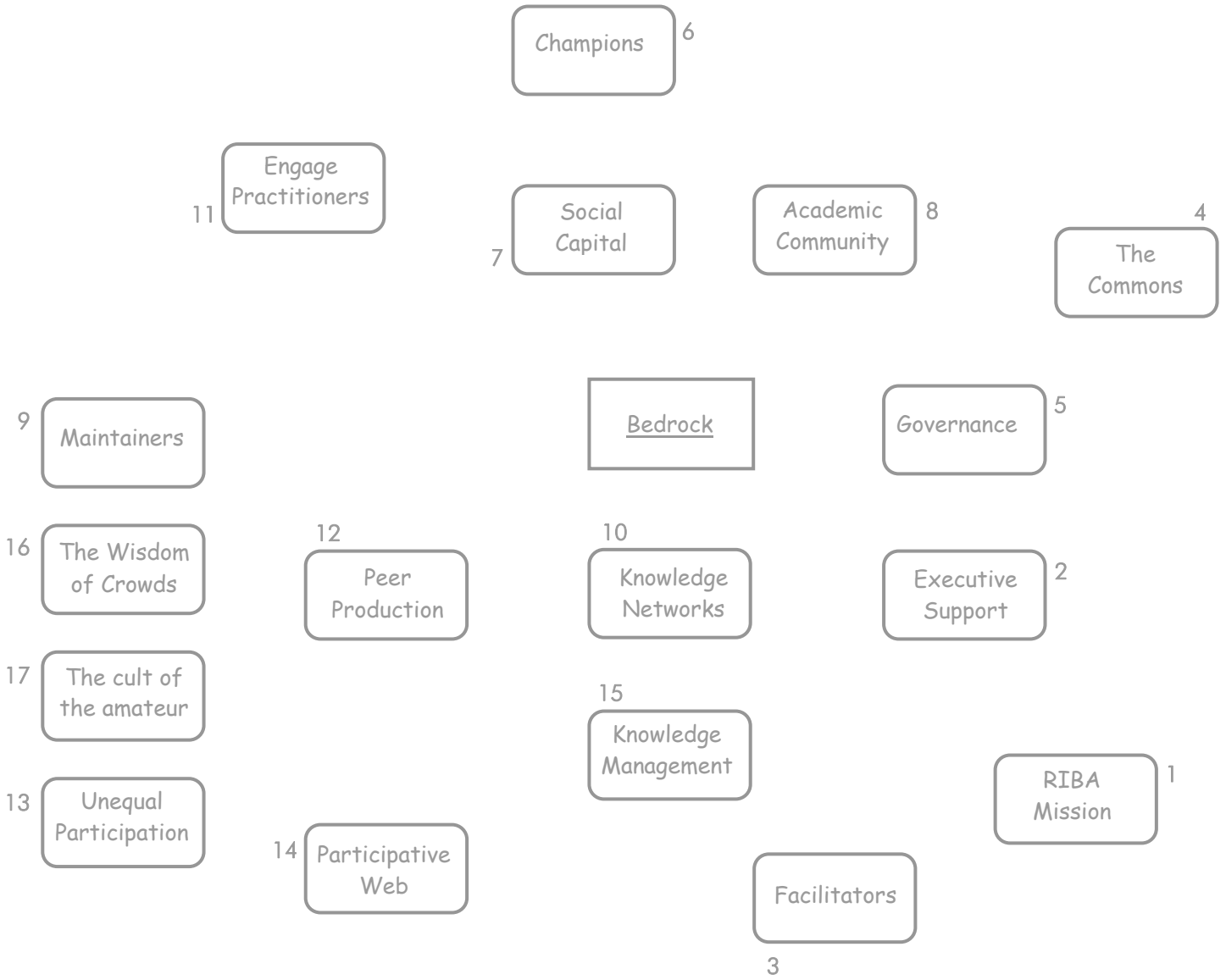

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Scenario 2: Bedrock

Write a pattern language to describe the components and inter-relationships of your scenario:

1. Use the network you have created on the opposite page and the patterns in this report.
2. Add new patterns if necessary.
3. Start by stating the overall problem which you wish to resolve; then introduce the patterns which deal with this problem.
4. Continue adding subsidiary patterns until the solution is complete.


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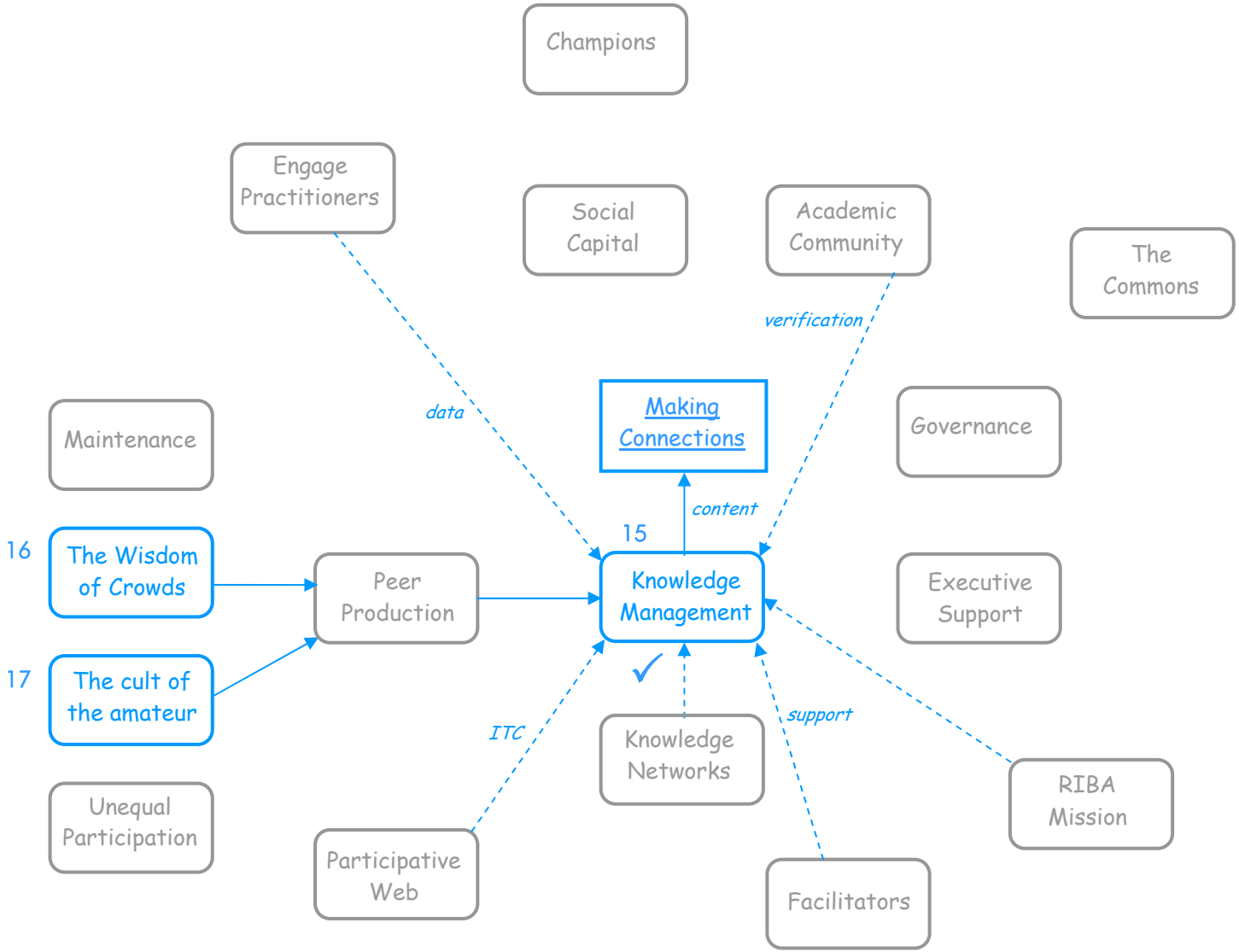
Scenario 3: Making Connections



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Scenario 3: Making Connections

The scenario 'Making Connections' completes the series by adding the final three patterns to the previous scenario. The aim of this strategy is to ensure the long-term viability of the project by connecting the RIBA architectural research wiki to other projects within the RIBA. The scenario starts with the pattern marked with a tick: *Knowledge Management*. The context for this pattern is that architects tend to share knowledge using their own informal networks - in Tom Stewart's words: 'Knowledge management and knowledge databases should really be about linking people to people to serve customers, people needing expertise with people who have expertise. They should be about connection, not collection.'

The pattern *Knowledge Management* describes how current methods of managing knowledge are moving away from a top-down, technology-driven focus on capturing, storing and disseminating information to methods which enable people to learn and share knowledge in a social way through a networked environment – their aim is to foster interactive, social ties which allow the exchange of ideas and advice. This process is enabled by the use of Web 2.0 technologies, such as wikis, blogs, and social networking services described in the subsidiary pattern *Participative Web*.

As the scale of *Peer Production* increases, the pattern *Wisdom of Crowds* becomes relevant to this process. This pattern is based on a theory that aggregating information from a large number of sources is likely to yield a better decision than asking an expert or a small group of experts. This theory may not hold in cases where the issues are particularly complex or technical, but the principle could still have a useful application in the project, such as a scoring mechanism for collectively rating articles published on the wiki – similar to Amazon's system of customer reviews.

On occasions, the level of hype surrounding the 'democratisation' of the Internet – *Participative Web* - drowns out legitimate fears and scepticism about the changes this technology is bringing, so that there is a need to pause and think. The pattern *The Cult of the Amateur* is pertinent to the issues surrounding the project; for instance, is it possible that an open, democratic public forum facilitated by the wiki could substitute for stringent, academic peer review? And does the free content on a wiki have the same legitimacy as research sold by an academic publisher?

The pattern *Knowledge Management* enables the wiki to close the loop between the patterns *Engage Practitioners* and *Academic Community* as in Strategy 1: 'Leadership', but in this scenario the connections are very much stronger due to the links made to other initiatives within the RIBA, such as its proposed knowledge communities and the planned redesign and upgrade of RIBAnet. The patterns *RIBA Mission*, *Executive Support*, and *Facilitators* bring additional resources to the project and economies of scale whilst avoiding duplication of effort and reinventing the wheel.

15 Knowledge Management

Context:

'Knowledge management and knowledge databases should really be about linking people to people to serve customers, people needing expertise with people who have expertise. They should be about connection, not collection.' Thomas Stewart [9]

♦ ♦ ♦

It is increasingly recognised that traditional approaches to knowledge management have been only partially successful: there are aspects of knowledge (or knowing) which cannot be articulated and made explicit using formal methods and technology.

Knowledge management brings together the collective ideas, knowledge and market intelligence of employees, customers and suppliers to improve an organisation's performance. Early methods of knowledge management focused on capturing tacit information and converting it into documents and databases which could be shared with other people. E-mail, groupware, electronic databases, search engines and the Internet played an important role in establishing this approach; in fact, it would not have been possible without these tools. This approach is now widely accepted and adopted in most organisations; its main aim is to improve efficiency - the right information in the right place at the right time.

More recent thinking is that knowledge is constructed through social processes and is found in the relationships between people; this idea is strengthened by the fact that people usually communicate with other people with shared interests to find knowledge, solve problems, and reach decisions, rather than turning towards documented sources. Current methods of managing knowledge recognise the continued importance of sound information management, but are shifting the focus from a top-down, technology-driven approach to methods which enable people to learn and share knowledge in a networked environment – their aim is to foster interactive, social ties which allow the exchange of ideas and advice.

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The idea that knowledge management involves connecting people to people - not only connecting people to information - questions the top-down, command-and-control concept of the organisation. In place of the formal, vertical structure of organisational hierarchies, recent approaches rely upon informal, distributed networks which are almost always invisible to traditional arrangements, and very often operate as a counter-flow to prescribed processes, emphasising soft techniques, such as Communities of Practice, Knowledge Cafes, and Knowledge Marketplaces and offering the potential of a 'networked intelligence' which disperses power and authority throughout all levels of the organisation.

Therefore:

Communicating with colleagues and friends can be the most effective way to share knowledge and develop new ideas – investigate the use of social tools and techniques, such as Communities of Practice, Knowledge Café's and Knowledge Marketplaces.

♦ ♦ ♦

The first phase of knowledge management viewed the Internet principally as a means for publishing and storing information. Web 1.0 technology, (1990 to 2000), was interactive only to the extent that somebody could navigate by clicking on links, but it wasn't until this decade that Web 2.0 technologies - wikis, blogs, social networking applications and social bookmarking links etc - became sufficiently established to allow people to readily change the content of the web however they wished – refer to the pattern *Participative Web*.

Whilst many organisations have built electronic networks and formal knowledge sharing systems, few of these systems recognise the informal, social networks which already exist; however, this situation is changing - refer to the pattern *Knowledge Networks*.

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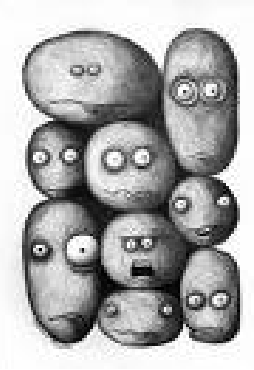
16 The Wisdom of Crowds



Context:

'Why the Many are smarter than the Few.' James Sorowiecki [11]

♦ ♦ ♦

Where the average chance of a member of a voting group making a correct decision is greater than fifty percent the chance of the group as a whole making the correct decision will increase with the addition of more members to the group. The Condercet Jury Theorem

In his best selling book, 'The Wisdom of Crowds', James Sorowiecki explains a simple yet counter-intuitive idea that has profound implications - that aggregating information from a large number of sources is likely to yield a better decision than asking an expert or a small group of experts. He writes: 'With most things, the average is mediocrity. With decision making, it's often excellence. You could say it's as if we've been programmed to be collectively smart.' [11] Sorowiecki provides examples from price markets, TV game shows and other anecdotes to show how this process works, and to reveal its limitations so that we understand when it won't work. According to Sorowiecki, good results are likely when the group has sufficiently diverse opinions so that errors will tend to cancel out, members of the group are independent and not swayed by opinion leaders, there is no centralising hierarchy, and where a mechanism exists for aggregating individual judgements into a collective decision.

The fact that in certain conditions groups can be smarter that even the smartest people in them can be proved using a simple statistical formula, which leads to the Condercet Jury Theorem. For example, in a group of three people, where the average person has a 67 per cent probability of having the correct answer, the probability of the group being right is 74 per cent; if the group is larger than three and the individual average

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probability remains, the probability of the group having the correct answer is even higher than 74 per cent, and will eventually approach 100 per cent. But the Theorem also works the other way – when the average individual probability of being correct is less than 50 per cent, the cumulative probability of the group being correct tends to zero as more misinformed people join the group.

The Condercet Jury Theorem applies strictly to statistical voting groups, where the decisions of individuals in the group are independent of the rest of the group, and where the decision is a simple choice; for example, deciding whether or not a person is guilty or guessing the weight of a cake. However, the judgement of statistical groups can be poor if there is a systemic bias in the group towards a particular choice, or if the individuals in the group lack the necessary information and can only make a random choice. In such cases the group may not perform as well as an expert. The question then is whether deliberative groups (i.e. groups which debate together) can regularly outperform individual experts.

In a deliberative group, the aggregation of information is a more complex process than the situation described by Sorowiecki or the Condercet Jury Theorem because it is shaped by social pressures. Deliberative groups can fail spectacularly when these forces lead to polarised positions or 'groupthink' – the title of Surowiecki's book is actually a play on an earlier history by Charles Mackay: 'Extraordinary Popular Delusions and the Madness of Crowds'. But a positive aspect of deliberative groups is the ability of their members to learn from each other. According to Cass Sunstein: 'The most general point in favour of deliberation is that a deliberating group will converge on the truth … *if* the truth has some initial social support within the group *and* when the task has a demonstrably correct answer according to a framework that group members share.' [12]

Therefore:

The issues within this pattern fall into two categories: simple aggregation of information (as in a voting system) and the more social context of collaborative working: when writing collaborative documents on the wik, provide a for deliberative debate attached to the text; consider the use of a scoring mechanism for collectively rating articles published on the wiki – e.g. Amazon's system of customer reviews.

♦ ♦ ♦

The pattern *Peer Production* relies upon the *The Wisdom of Crowds*, but working against this relationship is the pattern *Unequal Participation*.

Edit this!

17 The Cult of the Amateur

Context:

The infinite monkey theorem states that: ' a monkey hitting keys at random on a typewriter keyboard for an infinite amount of time will almost surely type a particular chosen text, such as the complete works of William Shakespeare'.

♦ ♦ ♦

'The Cult of the Amateur' is the title of a book written by Andrew Keen with the subtitle 'How Today's Internet is Killing our Culture and Assaulting our Economy.' [13]

Keen defines an amateur as: 'a hobbyist, knowledgeable or otherwise, someone who does not make a living from his or her field of interest, a layperson, lacking credentials, a dabbler.' By contrast, the mark of a professional is: 'a significant investment of one's life in education and training, countless auditions or entrance and certifying exams, and commitment to a career of hard work and long hours.' Keen argues that professional expertise is needed 'to help us sift through what's important and what's not, what is credible from what is unreliable, what is worth spending our time on as opposed to the white noise that can be safely ignored.' This expertise is traditionally provided by a hierarchy of paid editors, publishers, agents, scholars, critics, and others who act as cultural 'gatekeepers' to knowledge. Keen's message is that Web 2.0 technology is flattening this hierarchy, throwing such people out of work, 'corrupting and confusing popular opinion', and creating an 'endless digital forest of mediocrity.' Citing Huxley's Infinite Monkey Theorem (above), he laments the popularity of Wikipedia as: 'the blind leading the blind - infinite monkeys providing infinite information for infinite readers, perpetuating the cycle of misinformation and ignorance.' [13]

Edit this!

There is need for serious debate about whether the creation and infusion of knowledge in society is best done through an institutional or an open, democratic approach. The Cult of the Amateur is an important topic, but Keen's book doesn't give the subject the serious attention it deserves. Past the title, the book loses any focus on the amateur; it is more a rant about the Internet as a sewer of pornography, on-line gambling, theft and triviality; its 200 pages could be compressed into a one-page blog; there is no compelling vision about what the Internet might be. Like a medieval bishop, lashing out at the printing press and longing for the restoration of centralised control, he shows that his anti-Web 2.0 stance is actually about preserving the power and privileges of professional experts, mixed in with authoritarian moralism: 'we need rules and regulations to help control our behaviour online … it takes government regulation to protect us from our worst instincts and most self-destructive behaviour.'

The problem with this debate is that the level of hype surrounding Web 2.0 and the Internet often drowns out legitimate fears and scepticism about the changes this technology is bringing, so that people like Keen are almost automatically elevated by the media as heroes when they give these fears a voice, whatever the quality of their message. But there is a need to pause and think - this debate is highly relevant to the issues surrounding the wiki; for instance, is it possible that an open, democratic public forum facilitated by the wiki could substitute for stringent, academic peer review, and will the content on the wiki have the same legitimacy as similar work sold by an academic publishing house? Within the RIBA and the academic community there will definitely be some strong views on this subject; these should be canvassed and addressed.

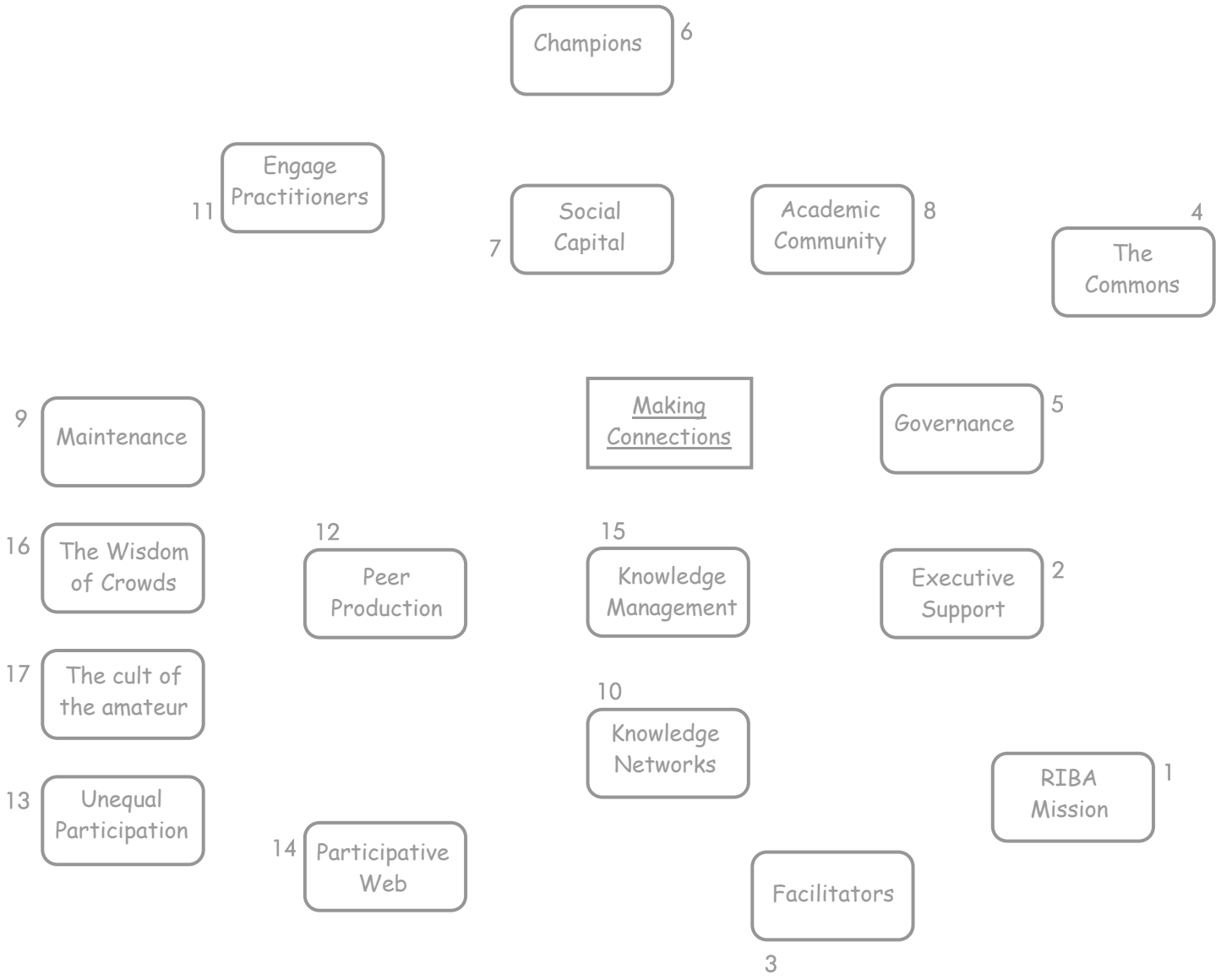
Therefore:

Don't expect everybody to agree with all of the democratic ideals of wikis in general. Be prepared to respond to criticism that wikis encourage amateurism. Develop a mechanism for verifying the content of the wiki, ensuring that it is accurate and its sources are reliable.

♦ ♦ ♦

In his classic guide to court politics which was published four hundred years ago, Machiavelli, an Italian nobleman wrote: 'Innovation makes enemies of all those who prospered under the old regime, and only lukewarm support is forthcoming from those who would prosper under the new. Their support is indifferent partly from fear and partly because they are generally incredulous, never really trusting new things unless they have tested them by experience.' Keen's attack on innovation is not a new phenomenon – refer to the pattern *The Participative Web*.

Edit this!



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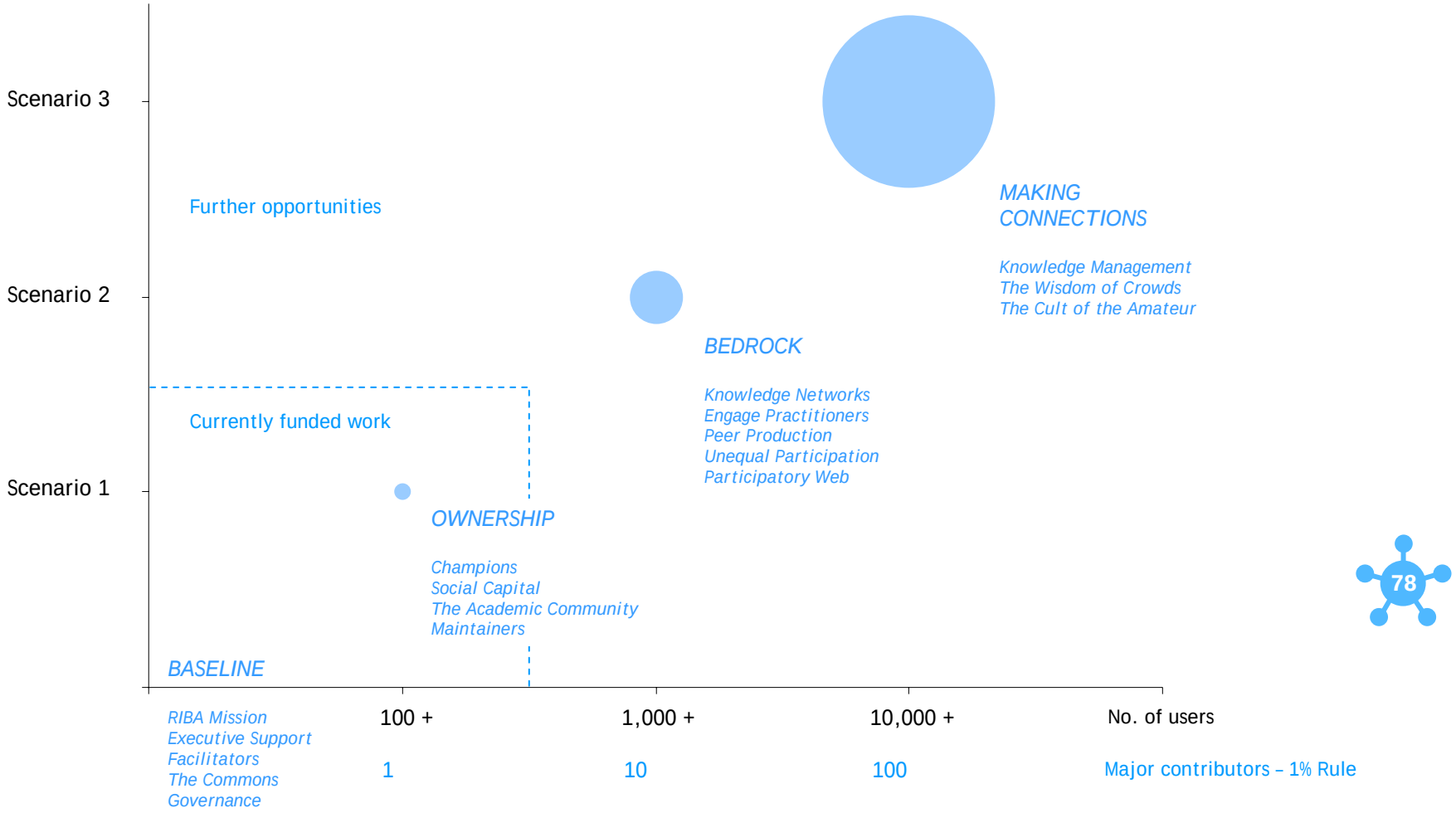
Scenario 3: Making Connections

Write a pattern language to describe the components and inter-relationships of your scenario:

1. Use the network you have created on the opposite page and the patterns in this report.
2. Add new patterns if necessary.
3. Start by stating the overall problem which you wish to resolve; then introduce the patterns which deal with this problem.
4. Continue adding subsidiary patterns until the solution is complete.


Scenario 3
Scenario 2
Scenario 1
Further opportunities
Currently funded work
MAKING CONNECTIONS
Knowledge Management
The Wisdom of Crowds
The Cult of the Amateur
BEDROCK
Knowledge Networks
Engage Practitioners
Peer Production
Unequal Participation
Participatory Web
OWNERSHIP
Champions
Social Capital
The Academic Community
Maintainers
BASELINE
RIBA Mission
Executive Support
Facilitators
The Commons
Governance
100 +
1,000 +
10,000 +
No. of users
1
10
100
Major contributors – 1% Rule

Summary of Scenarios

The baseline *Test Wiki* uses the following five patterns: *RIBA Mission*, *Executive Support*, *Facilitators*, *The Commons* and *Governance*. Analysis of this network confirms the findings of a quick poll carried out within one architectural practice, which is that the wiki doesn't yet have a sufficiently high profile, and is currently being driven primarily by the pattern *Executive Support*, rather than by grass-roots participation. One of the priorities of this scenario is to put in place a mechanism for licensing IPR to comply with the recommendations of the pattern *Governance*.

- **RIBA Mission**

  This project is one of a number of RIBA initiatives which are designed to position the Institute as 'the knowledge management, market intelligence and research focus for the architectural profession.' The lessons learned by this project could be applied to other initiatives.

- **Executive Support**

  Determine what resources should be given to the wiki community by the RIBA. Monitor the work of the wiki community and provide encouragement, but allow the community to set its own objectives and manage its own processes.

- **Facilitators**

  The current arrangements for the administration of the wiki are working well; however, these arrangements should be kept under review.

- **The Commons**

  Establish the wiki as a collaborative commons for academics and practitioners to share knowledge and ideas – create policies and legal contracts which encourage sharing and reuse of information, and provide technology that makes knowledge easy to access and share.

- **Governance**

  Document the normative requirements for using the wiki and post this document in a prominent position on the site. These requirements may need to be checked with the legal department of the RIBA. The use of a Creative Commons licensing arrangement is recommended.

The first scenario *Ownership* adds four more patterns: *Champions*, *Social Capital*, *The Academic Community*, and *Maintainers*. The goal of the RIBA at this stage of the project is to transfer responsibility for the content of the wiki to grass roots participants by using the patterns *Champions* and *Social Capital*. To realise this objective, it is recommended that the RIBA creates an informal arrangement of online publication, sharing and open peer review of academic research papers – a Commons for Architectural Research - which will complement traditional systems found in academic institutions. Ongoing support from the centre will be needed through the pattern *Facilitators*, supported by the pattern *Maintainers*.

- **Champions**

  Find one or more volunteer members who have a good network of connections and who would be prepared to encourage people to support the wiki. This role does not necessarily require ITC expertise – technical skills are useful but leadership skills are more important.

- **Social Capital**

  The informal processes which support this pattern are of equal importance to the more formal processes provided by other patterns such as *Governance* and Executive *Support* – the accumulation of social capital is crucial in the process of transferring ownership of the wiki to users.

- **The Academic Community**

  The wiki could be developed in ways which allow the academic community to take advantage of the benefits of new web technologies – what might be called Research 2.0 – whilst maintaining the rigour of the traditional academic process.

- **Maintainers**

  Don't overload the wiki facilitator; avoid bottlenecks by delegating the task of performing minor edits and tidying up the wiki to volunteers who will maintain a page, section or space on the wiki.

The second scenario *Bedrock* adds a further five patterns: *Engage Practitioners, Knowledge Networks*, *Peer Production*, *Participatory Web,* and *Unequal Participation*. This scenario aims to generate a large-scale process of commons based peer production, which will expand the wiki community and add more content to the wiki. This scenario is designed to close the loop between the patterns *Practitioners* and *Academic Community*, which is a principal objective of the project. Continued support for the *Knowledge Networks* will be required via *Facilitator*, and *Executive Support* will also be needed to supply the required ITC resources.

- **Knowledge Networks**

  Identify and engage the relevant 'communities of practice' inside and outside the RIBA; provide then with the resources the need – particularly tools that will encourage them to connect more closely with the project; don't attempt to tie them into the formal organisation.

- **Engage Practitioners**

  Establish the wiki as a business network for end users and suppliers who wish to share knowledge and ideas – enabling collaboration at all levels of the industry supply chain and acting as a market place for larger firms and clients looking for external services.

- **Peer Production**

  Reduce the cost and effort needed to contribute to the wiki and raise the potential benefits of participation. Organise tasks into small, modular parts and provide a mechanism for integrating these parts into a whole. Provide a governing framework of rules for using the wiki.

- **Unequal Participation**

  There is nothing the RIBA can do to alter the fact that only a very small percentage of people are likely to participate in a wiki; however, consider differentiating the web site to cater for both the 10 per cent or fewer contributors and the 90 per cent or more viewers.

- **Participatory Web**

  Make the wiki an open platform for collaboration, where users can freely build new ideas, develop new features, add new applications, and create new partnerships and purposes. Keep content on the wiki as open as possible, consistent with governing rules of the RIBA.

The third scenario *Making Connections* completes the series by adding the final three patterns: *Knowledge Management*, *The Wisdom of Crowds*, and *The Cult of the Amateur*. This scenario aims to ensure the long-term viability of the wiki by connecting it to other RIBA projects. The pattern *Knowledge Management* enables the wiki to close the loop between the patterns *Engage Practitioners* and *Academic Community* as in the scenario *Ownership*, but here the connections are much stronger due to the contribution of other RIBA initiatives, such as its proposed knowledge communities and the planned redesign and upgrade of RIBAnet. The patterns *RIBA Mission*, *Executive Support*, and *Facilitators* bring additional resources to the project and economies of scale and synergies, whilst avoiding duplication of effort and reinventing the wheel.

- **Knowledge Management**

  Consider using a social networking service to create an electronic knowledge network, which would support the RIBA research wiki.

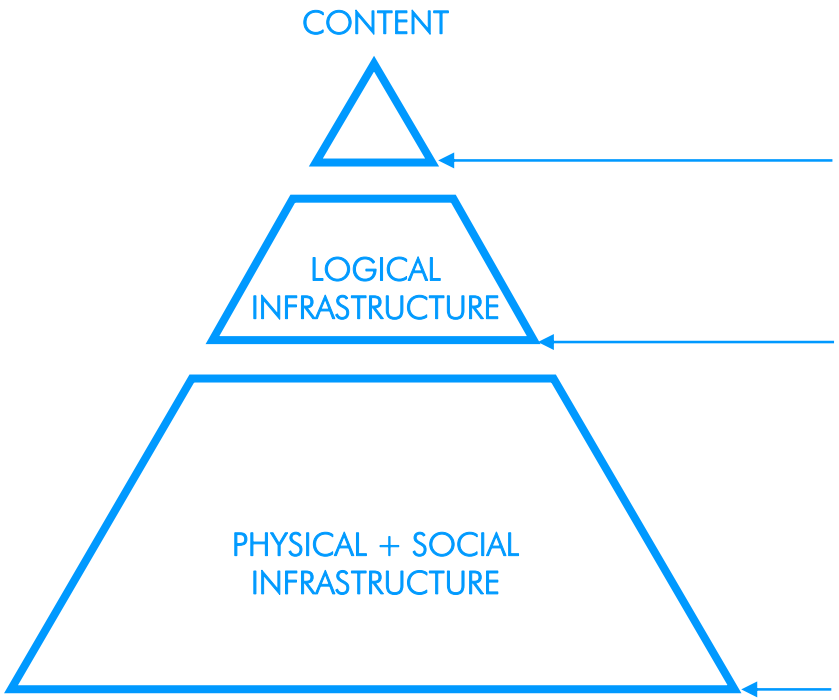
- **The Wisdom of Crowds**

  The issues within this pattern fall into two categories: simple aggregation of information (as in a voting system) and the more social context of collaborative working: when writing collaborative documents on the wik, provide a for deliberative debate attached to the text; consider the use of a scoring mechanism for collectively rating articles published on the wiki – e.g. Amazon's system of customer reviews.

- **The Cult of the Amateur**

  Don't expect everybody to agree with all of the democratic ideals of wikis in general. Be prepared to respond to criticism that wikis encourage amateurism. Develop a mechanism for verifying the content of the wiki, ensuring that it is accurate and its sources are reliable.

RECOMMENDATIONS & CONCLUSIONS



The actual stuff that gets transmitted across the physical and social network - knowledge, ideas, text, images etc.

Software, Internet protocols, code etc. which mediate between the content layer and the physical + social infrastructure layer.

In Web 2.0 applications, the logical infrastructure is 'open source' or 'open content'

Layer across which communication travels - electronic and social networks.

The World Wide Web was designed at the start to be an open network, freely accessible to all users – this ideal is being eroded by vested commercial interests and increasingly stringent copyright legislation.

Generally, the social infrastructure of Knowledge Networks applies a similar ethos of open participation and sharing of knowledge and ideas.

A Framework for Analysis

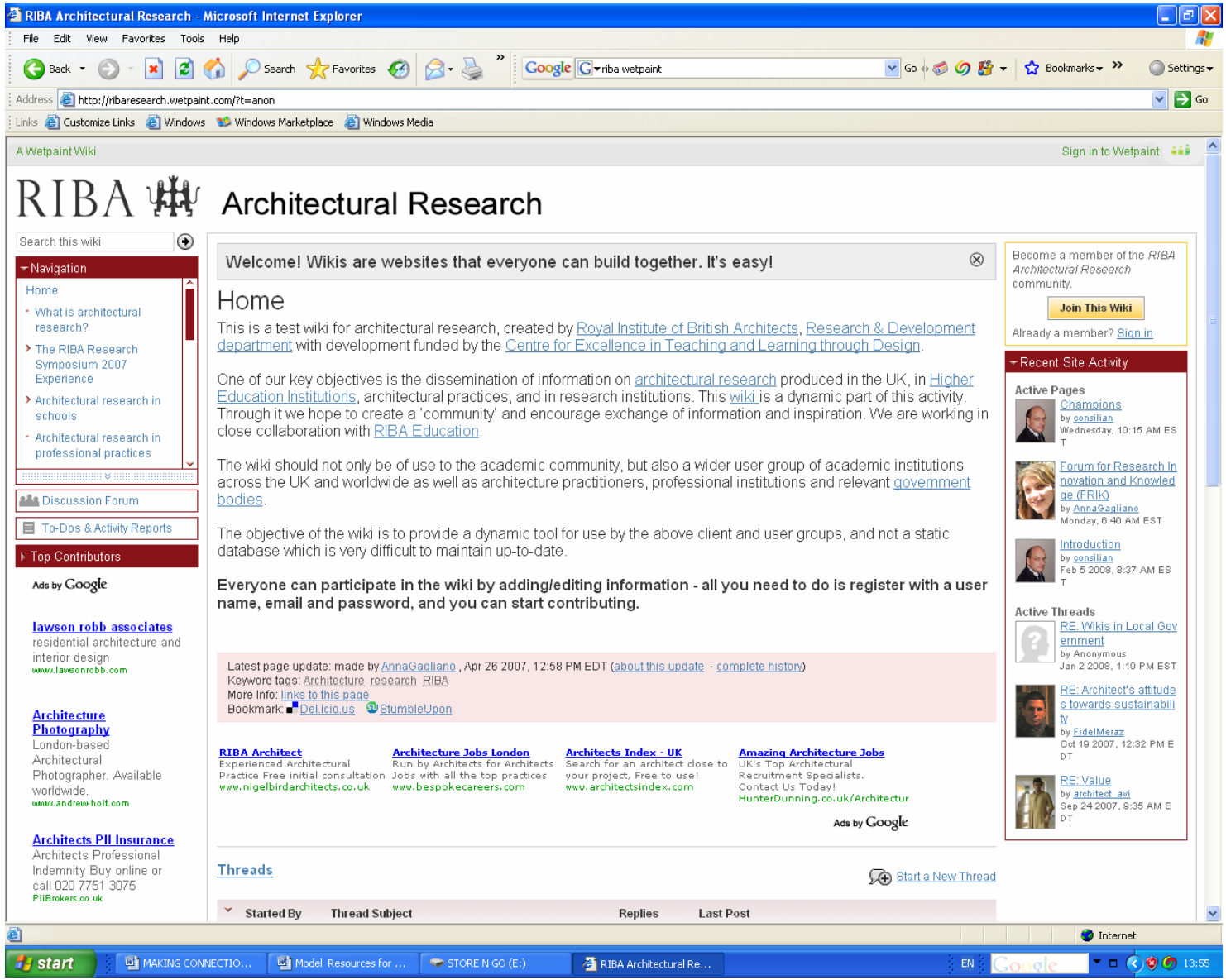
The diagram on the opposite page shows the relationship between content and connections in an ITC network as a framework with a series of three layers. At the top of the framework is the content layer, consisting of the information transmitted along the wires or cables of the electronic network, which is illustrated as the bottom layer. However, social networks also play a vital role in this project, so the bottom layer includes not only physical infrastructure but also social infrastructure. Between these layers is the logical infrastructure, which determines how the physical infrastructure is configured and the type of services and level of performance this configuration will deliver.

The content of the wiki consists of information in the form of databases, discussions forums, documents, templates, images, tags, and much more. The difference between a wiki and a conventional web site is that users can upload and edit information on a wiki themselves using only a normal web browser. For this reason, the structure of wiki content tends to emerge over time as a result of the cumulative actions of its users - a balance between free-form editing and moderation is needed, but the final structure is likely to be reached through a process of trial and error.

The design and configuration of the wiki software sits at the level of the logical infrastructure layer in this arrangement, so that the way in which the wiki is set up (including its various permissions and controls) and the design and appearance of the user interface will affect the content which is produced. This layer contains the current wiki application (Wet Paint), but it could be expanded by adding functionality to the wiki, such as a web counter or an RSS feed, or by adding new applications to work with the wiki, such as embedding the wiki in a social networking service.

In this framework the wiki is supported by a layer of physical and social infrastructure. This layer forms the bedrock of the project, and the diagram points to the fact that the underlying electronic and social networks must be in place before the wiki can operate at its full potential. The technical aspects of this infrastructure are relatively straightforward - more important are the human or social factors. However, as with most IT projects, the real issues relate to people rather than technology; the softer issues tend to be the hardest to put in place and to get right.

In any situation, communication depends upon both content and connection; for example, the outcome of a conversation depends not only on what is said, but also how it is said. The framework provides a useful method for structuring the human and technical aspects of the project as a series of recommendations and conclusions, which are made in the remainder of this final section of the report.


RIBA Architectural Research - Microsoft Internet Explorer
http://ribaresearch.wetpaint.com/?t=anon
A Wetpaint Wiki
Sign in to Wetpaint
RIBA Architectural Research
Search this wiki
Navigation
Home
What is architectural research?
The RIBA Research Symposium 2007 Experience
Architectural research in schools
Architectural research in professional practices
Discussion Forum
To-Dos & Activity Reports
Top Contributors
Ads by Google
lawson robb associates
residential architecture and interior design
www.lawsonrobb.com
Architecture Photography
London-based Architectural Photographer. Available worldwide.
www.andrew-holt.com
Architects PII Insurance
Architects Professional Indemnity Buy online or call 020 7751 3075
PiiBrokers.co.uk
Welcome! Wikis are websites that everyone can build together. It's easy!
Home
This is a test wiki for architectural research, created by Royal Institute of British Architects, Research & Development department with development funded by the Centre for Excellence in Teaching and Learning through Design.
One of our key objectives is the dissemination of information on architectural research produced in the UK, in Higher Education Institutions, architectural practices, and in research institutions. This wiki is a dynamic part of this activity. Through it we hope to create a 'community' and encourage exchange of information and inspiration. We are working in close collaboration with RIBA Education.
The wiki should not only be of use to the academic community, but also a wider user group of academic institutions across the UK and worldwide as well as architecture practitioners, professional institutions and relevant government bodies.
The objective of the wiki is to provide a dynamic tool for use by the above client and user groups, and not a static database which is very difficult to maintain up-to-date.
Everyone can participate in the wiki by adding/editing information - all you need to do is register with a user name, email and password, and you can start contributing.
Latest page update: made by AnnaGagliano , Apr 26 2007, 12:58 PM EDT (about this update - complete history)
Keyword tags: Architecture research RIBA
More Info: links to this page
Bookmark: Del.icio.us StumbleUpon
RIBA Architect
Experienced Architectural Practice Free initial consultation
www.nigelbirdarchitects.co.uk
Architecture Jobs London
Run by Architects for Architects Jobs with all the top practices
www.bespokecareers.com
Architects Index - UK
Search for an architect close to your project, Free to use!
www.architectsindex.com
Amazing Architecture Jobs
UK's Top Architectural Recruitment Specialists. Contact Us Today!
HunterDunning.co.uk/Architectur
Ads by Google
Threads
Start a New Thread
Started By
Thread Subject
Replies
Last Post
Become a member of the RIBA Architectural Research community.
Join This Wiki
Already a member? Sign in
Recent Site Activity
Active Pages
Champions
by consilian
Wednesday, 10:15 AM EST
Forum for Research Innovation and Knowledge (FRIK)
by AnnaGagliano
Monday, 6:40 AM EST
Introduction
by consilian
Feb 5 2008, 8:37 AM EST
Active Threads
RE: Wikis in Local Government
by Anonymous
Jan 2 2008, 1:19 PM EST
RE: Architect's attitudes towards sustainability
by FidelMeraz
Oct 19 2007, 12:32 PM EDT
RE: Value
by architect_avi
Sep 24 2007, 9:35 AM EDT
Internet
start
MAKING CONNECTIO...
Model Resources for ...
STORE N GO (E:)
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EN
13:55

Baseline: Test Wiki

The RIBA architectural research wiki has been operating for about 18 months as a 'proof of concept' site with no capital outlay, limited content, and a small number of users. The RIBA's proposal for this scenario - including a description of the project, its criteria for success, and an outline plan of work - are reproduced on pages 10 to 15 of this report. The recommendations listed below are short-term measures which could be quickly implemented in order to place the wiki on a stronger footing before adopting the recommendations made under subsequent scenarios.

Content

The RIBA's goal for the wiki is that is should become: 'a shared, yet very active, repository of knowledge, with the knowledge base and user group growing over time … It will be a "community space" where people can deposit and share research, thoughts, ideas and articles, etc.'

- Most of the content on the site has been published by the RIBA in order to 'seed' the wiki – this means that a number of pages are created (either completely or partially completed) in order to make the site look active and thereby encourage people to participate.
  - Seeding will not work if the wrong type of content is used, and although there doesn't appear to be much interaction by users with the RIBA content, it is difficult to know the reason for this – the seeded content might not be what is actually needed or there may not be enough people who are aware of the wiki. A quick poll in one architectural firm (shown on page 14) suggests that the second explanation is most likely, but it would be very useful to carry out a larger survey to determine the best content for continuing to seed the wiki.
  - It is important not to leave too many blank pages when seeding the wiki; for example, there is no content on the page 'Research Papers', and it is strongly recommended that the RIBA actively targets potential contributors to develop this page as a prime space on the wiki.
- The content on the wiki should be relevant to users.
  - Information on the wiki should be kept current. Some of the content is out of date and should be taken down or archived in a separate section of the wiki; for example, the news about 'Research Awards' is dated December 2006. The page 'Current Themes' hasn't been updated since August 2006 – it is suggested that current should be defined as no more than six months old.

- Publishing information exclusively on the wiki is a useful way to attract people to the wiki – this technique is similar to seeding but it can be more effective if the content cannot be found elsewhere, particularly when links from other sites point to this material. The article by Jeremy Till, *What is Architectural Research?* is a good example of this technique.

- The content of the wiki is arranged in a logical structure, but it is not so easy to navigate around the site.
  - After the switch to the new software the menu could be made larger and clearer.
  - A page showing a site map should be added.
  - Add navigation bars to all pages using a consistent pattern where they can be easily seen on all types of web browser - usually best positioned on the top, left hand side of a page.
  - Add links wherever possible; for example, the page 'Architectural Research in Schools' would be improved if there were a list of all schools on the 'parent' page with links to the 'child' pages.

Logical Infrastructure

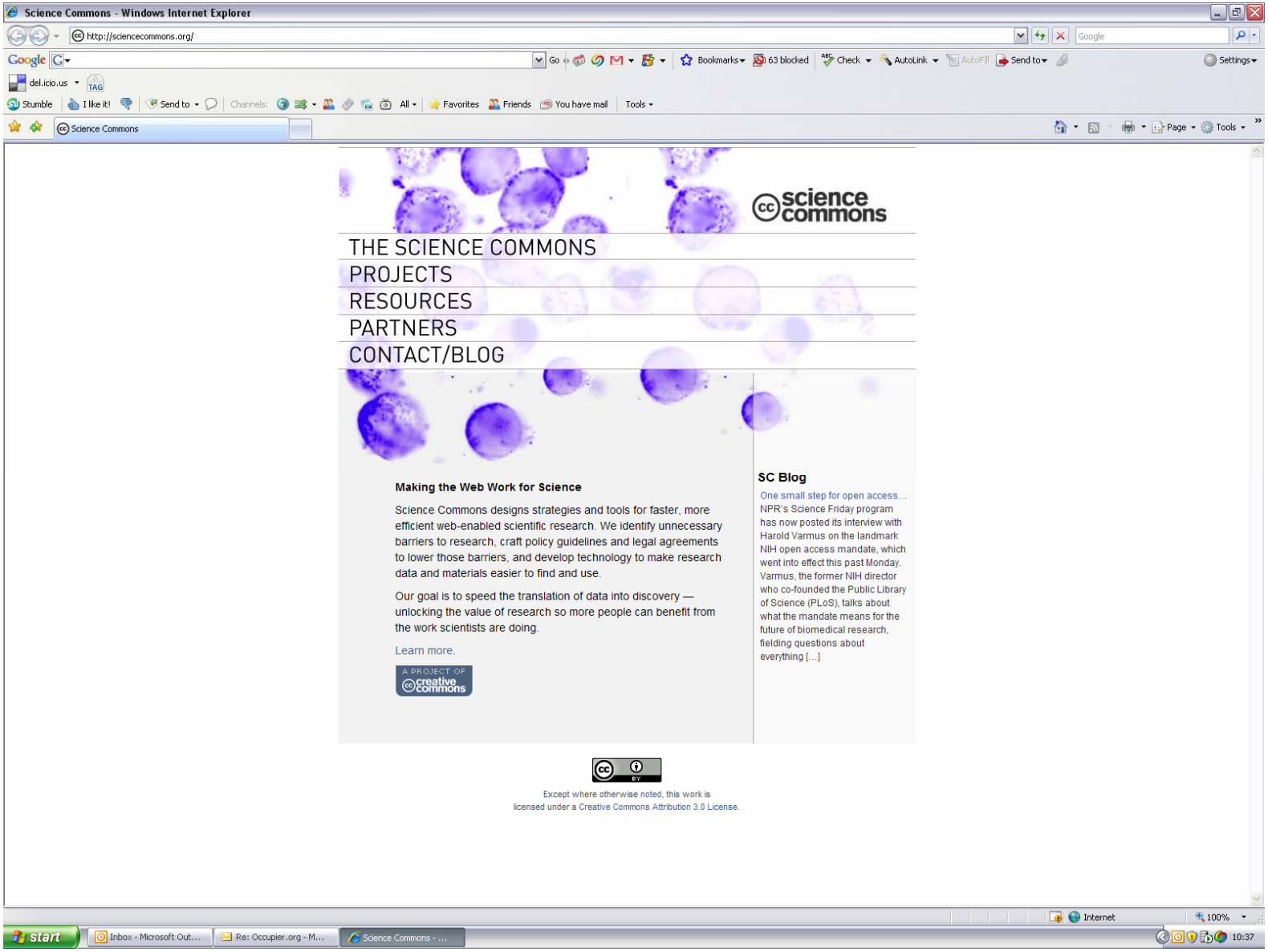
- The RIBA is proposing to change the wiki software from WetPaint to MediaWiki – www.mediawiki.org
  - MediaWiki is an ideal application for an institutional wiki with high traffic used for academic research. There is a vast range of wikis to choose from, but a useful site for comparing wikis is Wikimatrix. A search for installable software with WYSIWYG editing, a page history which uses a database for comparison between all versions and which is Free and Open Source produced 11 types of wiki, including MediaWiki; however, only MediaWiki is classified for educational use. MediaWiki has an unbeatable range of features – it is the software used for Wikipedia, which means that many of its features (such as conflict handling) were developed specifically for this purpose.
  - It is recommended that the following non-standard plug-ins should be installed with MediaWiki: CAPTCAH, e-mail notification, statistics for recent visitors, analysis of statistics, PDF exporting, WYSIWYG editing.
  - Apart from MediaWiki, other suitable applications are PhpWiki and TikiWiki.

- Wikis can be embedded within conventional read-only web designs or they can stand behind a purpose-designed home page – it is not necessary to design the entire site as a wiki. Hybrid approaches provide greater flexibility and a more appealing overall layout and design.
  - an example of a site which places a wiki (MediaWiki) behind a conventional home page is: http://www.cognitive-edge.com/.
- A priority at this stage is to put in place a mechanism for licensing IPR – the use of an open source Creative Commons Licence is strongly recommended, using a combination of the following variants – note that different combinations can be applied to different pages on the wiki:
  - *Attribution* – others can copy and distribute work – and derivative works where allowed – provided credit is given to the original author
  - *Non-commercial* – others can copy and distribute work – and derivative works where allowed – but only for non-commercial purposes
  - *No derivative works* – others can copy and distribute only verbatim copies of work and not derivative works based upon it
  - *Share alike* – others can distribute derivative works under identical conditions to the original licence – alternative to *No derivative works*

Physical and Social Infrastructure

The goal of the RIBA at this stage of the project is 'to lay the foundation for building the wiki community.'

- The RIBA plans to move the wiki from a hosted site to its own server.
- The wiki currently has 84 registered users. It is possible to gauge how much the site is being used by checking when they last visited the site; however, there is no way of monitoring how many other people have visited the site, how many pages were viewed and when, which are the most popular pages, or tracking similar activities.
  - Measure site statistics using a web counter – this tool provides useful information about visitors, such as geographical location, search entries, pages visited, return visits and browser settings.
- It is recommended that more people are trained by the RIBA to administer the wiki and given permission to moderate the site before the wiki community is expanded.



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Scenario 1: Ownership

The principal objective of the RIBA during this stage is to transfer responsibility for the content of the wiki from the centre to grass roots participants. The quickest way to achieve this is to involve the academic community. This approach would be consistent with one of the stages in the RIBA outline plan of work for the project: 'To lay the foundation for building the wiki community. We expect to start small, focus on one or two teams initially (R&D and Education committees, some Heads of Schools, one or two groups at Brighton and elsewhere). We would nominate someone within each group as a champion to promote involvement and guide new members on how to get the best from the wiki environment.'

Content

The number of participants in this scenario is likely to be small, probably no more than 100. However, it is not essential to attract very large numbers of people at this stage of the project – quality and focus are essential during the process of transferring ownership of the wiki.

- It is recommended that the best use of limited resources during this phase is to publish academic research papers and dissertations; this is because academic authors are often keen to achieve peer recognition of their work and rarely demand payment. Research papers could be published after they have undergone a formal peer-review or they could be published on the wiki for informal review by the wiki community.
- It is recommended that the RIBA creates an informal arrangement of online publication, sharing and open peer review of academic research papers – a Commons for Architectural Research - which will complement traditional systems found in academic institutions –
  - An example of this approach is the Science Commons project shown on the opposite page - http://sciencecommons.org/about/
- A section of the wiki could host a debate about the relative advantages and disadvantages of traditional versus online peer review

Logical Infrastructure

- Authors of academic research papers must be clear about the copyright conditions for publishing and the RIBA should ensure that these are consistent with the wiki policies for governance; therefore, the IPR arrangements recommended in the baseline scenario must be in place.
  - Note that the Creative Commons licences can be applied using either a Share alike or a No-derivatives version.

- It is recommended that the discussion pages which are attached to each page of the wiki using the MediaWiki application are adequate at this stage to allow review of the research papers in a transparent way whilst maintaining the rigour of traditional academic peer review process.
- A mechanism which encourages citation of papers published on the wiki should be put in place – e.g. Google's page ranking algorithm
- On-line peer review of research papers could be carried out using a scoring / voting mechanism, which could be extended to score and rank the review themselves – e.g. Amazon's customer reviews
- People who contribute to the wiki should identify themselves, using either their real name or a community pseudonym or an online avatar

Physical and Social Infrastructure

- No changes to the physical infrastructure which were recommended in the previous scenario are envisaged at this stage of the project.
- The RIBA must find one or more volunteer members who are passionate about the wiki's success and have the ability to enthuse support and participation in the project. This role does not necessarily require ITC experience – leadership skills are more important.
- Make use of existing relationships between the RIBA and schools of architecture and other research institutions – these organisations already possess the social infrastructure and necessary social capital which could help the wiki to yield quick results:
  - Peer recognition is a powerful motivator for contributing academic research papers to the wiki community – this approach could be encouraged after the switch to the new software application by attaching profiles of authors to their papers.
  - The wiki could be developed as a valuable resource for architectural students carrying out research for their dissertations.
  - The wiki could be developed as a resource for lecturers who are creating course management systems for students
- It is recommended that responsibility for publishing, maintaining, editing and enhancing particular pages, spaces or sections of the wiki is delegated to volunteer members. It would be possible to add the name of this person to the relevant pages in the wiki.
- It is recommended that an assessment is made after the site has been operating for a short while about whether a moderator is necessary
  - In a pure form, an information commons will rely on the community itself to regulate content and ensure that publication meet academic standards of originality significance and rigour; however, some form of expert moderation may be necessary in practice.

Scenario 2: Bedrock

The aim of this scenario is to encourage RIBA members to participate in the wiki community. Architects are able to provide much of the raw data needed for academic research, but as Jeremy Till states on the RIBA wiki: 'much of this (data) remains tacit either for commercial reasons or is not disseminated in a rigorous fashion by the press' [7] - closing this feedback loop between practitioners and the academic community is a key goal of the project. A process of commons-based peer production is proposed to add more content to the wiki and expand the wiki community.

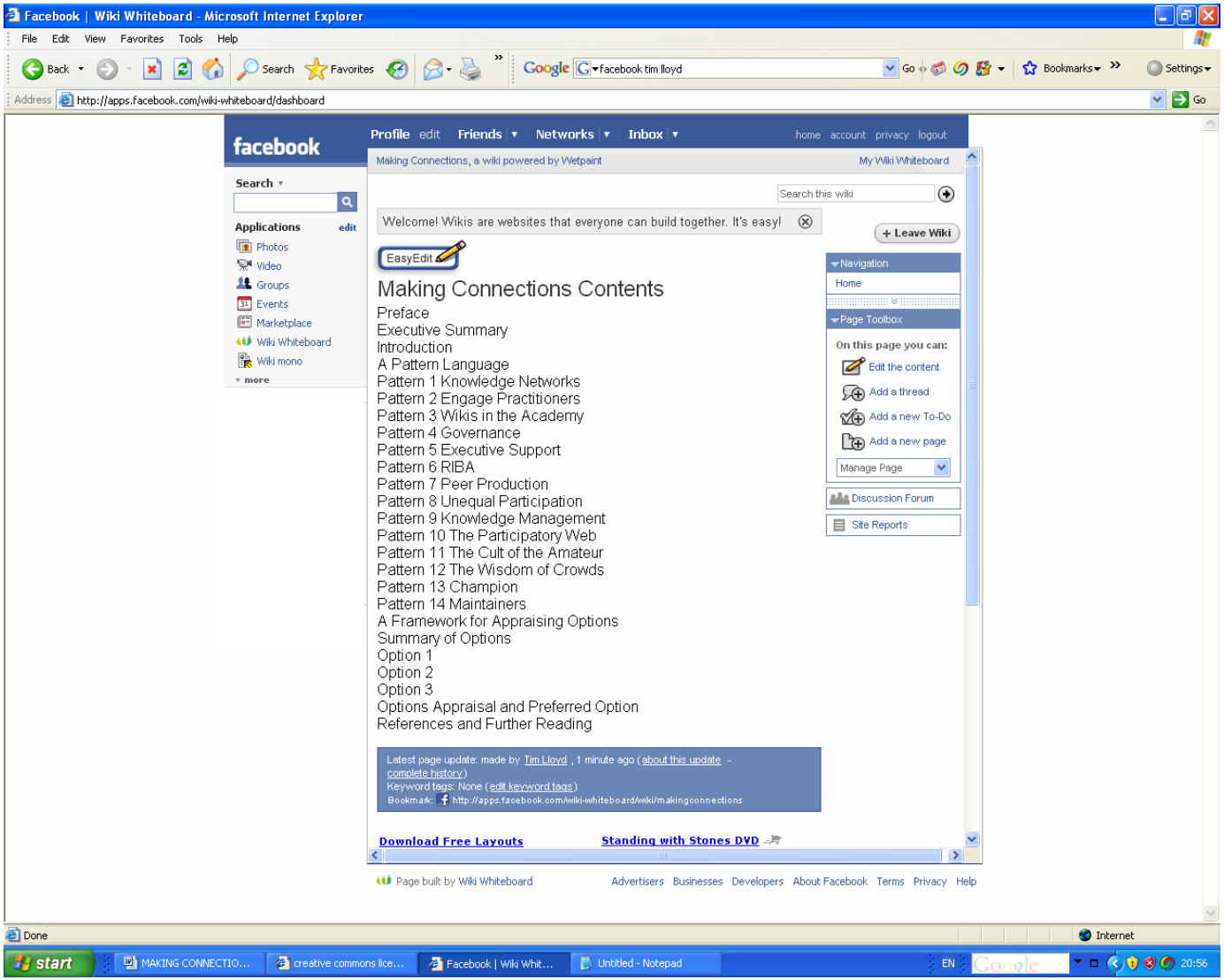
Whereas the first scenario is designed to connect *people with information* through online databases and knowledge banks - this scenario takes the next step: connecting *people with people* by creating a series of online platform for informal dialogue and the open exchange of information and ideas. The proposals made below are preliminary concepts - it is recommended that they are explored further as a separate scope of work.

This scenario adopts three distinct types of *Knowledge Networks*:

- Communities of Practice (CoP) – networks of practitioners who work together online over an extended period of time to develop a specific area of applied knowledge – open to people who have registered with the network, but outputs are accessible to the wider community.
- Knowledge Studio – an online discussion forum for members who want to swap ideas and experiences online – open to the whole community.
- Innovation Exchange – an online market or 'dating agency' which matches 'solution seekers' with 'problem solvers' – participation work on a self-selecting basis, but with a possible brokering role performed by the RIBA Research & Development Department.

Content

- The knowledge assets of a CoP are shared ideas, practices, experience, beliefs and cultural norms.
  - In most organisations, CoP's tend not to work to any formal agenda and are seldom recognised by managers; however, in the context of this project, the knowledge of such networks could be converted in a more structured way into a series of published outputs representing a 'body of knowledge' about a particular area of practice – possibly in the form of case studies or guidance on best practice.
- The content of the Knowledge Studio would consist of informal conversations between practitioners



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- The Innovation Exchange will operate as an online marketplace which trades applied information and creative ideas between buyers and sellers – on the one hand there will be 'problem solvers' (people with solutions in search of unanswered questions) and on the other hand, 'solution seekers' (people with questions in search of solutions). The attraction for firms using the exchange is access to a network of talent and information which can find ideas and solutions faster and more efficiently than internal R&D resources and a process of trial and error.

Logical Infrastructure

It is recommended that the wiki is augmented by other applications to build a series of informal, virtual networks. The research wiki will be positioned as a public-facing domain of academic quality whilst the network will be designed as a members' forum for debate and interaction.

- The market for social networking services is evolving extremely rapidly. Various services were examined including: *Facebook*; *Ning*; a more business-oriented platform called *LinkedIn*; and a proprietary knowledge sharing application called *Share*.
  - The code for Facebook was released as free open source at the end of last year, which means that it could readily be developed as a prototype social networking platform for architectural research.
  - Users would be able to import their own wikis for specialised purposes into the social networking application. Facebook provides two wikis as standard embedded applications: WetPaint and Wikimono, which would be suitable for private collaboration.
- The Knowledge Studio would operate as a conventional threaded discussion forum
- The Innovation Exchange could operate as a wiki or as a conventional published web site – it would require a different system of governance and licensing of IPR from the other models

Physical and Social Infrastructure

- A critical mass of around 1,000+ participants is needed to ensure that the peer production process is successful
- The Innovation Exchange could be outsourced by the RIBA to a supplier. The RIBA should be indemnified against any financial risk.

RIBA knowledge communities

academic networks

ARCHITECTURAL RESEARCH WIKI

discussion forums

e-bulletins

practitioner networks

RSS feeds

podcasts

social bookmarking

weblogs

Scenario 3: Making Connections

This scenario aims to ensure the long-term viability of the wiki by connecting it to other RIBA projects, such as the proposed creation of a series of knowledge communities and the planned upgrade and redesign of RIBAnet; it brings additional resources to the project, allowing lessons learned by the RIBA research wiki to be adopted by other initiatives within the organisation.

The proposals made in this scenario will involve reorganisation within the RIBA and require additional resources; these matters are outside the scope of this report. For this reason, these proposals are not intended to be detailed or comprehensive recommendations – they are initial suggestions, and it is recommended that the ideas outlined in this scenario are explored further as part of a separate study. An integrated approach, as recommended here, would bring economies of scale and synergies, whilst avoiding duplication of effort and reinventing the wheel.

Content

Towards the end of last year, the RIBA approved a proposal to re-organise existing special interest groups and committees into knowledge communities, which would engage members in a virtual network around a series of specialist domains or topics.

- It is recommended that content is structured in a way which supports the themes of the proposed knowledge communities: sustainability and combating climate change; planning; ITC; healthcare; education; housing; conservation and existing buildings.

Logical Infrastructure

Current proposals within the RIBA could share and re-use the software and systems of governance proposed in previous scenarios

- Ensure that RIBA members of the architectural research network can log onto the knowledge community network and RIBAnet using the same usernames and passwords.

- If the wiki is freely accessible to the public, insist that users identify themselves, but only block editing rights as a last resort.

Physical and Social Infrastructure

The suggested size of the community in this scenario is 10,000+ users.

- Using a simple 80:20 rule, it is likely that 80 per cent of the community (8,000 users) would be RIBA members, which represents 20 per cent of the 40,000-strong RIBA membership base - the remaining 20 per cent of the community (2,000 users) would be non-RIBA members.
- Applying the 90-9-1 ratio to 10,000 users, the likely levels of participation would be 9,000 readers, 900 synthesisers, and 100 writers.
- A key finding of this report (described in the pattern *Social Capital*) is that understanding the informal processes which determine the operation of the wiki is of equal importance to the more formal processes provided other patterns such as *Governance* and *Executive Support*.
  - Wiki networks are good at disseminating information to members, but their loose structure means that their processes and outputs can be less effective in terms of direction, activism and voice than traditional modes which engage people through face-to-face relationships.
  - Close, personal ties in real space communities often produce types of knowledge which are exclusive (private) to individuals or the group, whereas knowledge in a distributed, on-line community more closely resembles a public good.
- Study the RSA Networks Projects which was recently released to its 27,000 fellows - http://www.rsa.org.uk/fellows/get_involved.asp
- Encourage participation in the network from other professional institutions, government departments and other interested parties

Conclusions and Next Steps

This report recommends that after consolidating the project (*Ownership*) the RIBA should consider two further scenarios to ensure its long-term viability. The first of these (*Bedrock*) focuses on the use of new Internet technologies to underpin knowledge networks. Despite some of the exaggerated claims for Web 2.0, it is certain that this technology is increasingly affecting the way people create and share knowledge, particularly younger people. Wikis are part of this trend, but they are already more than a decade old and just one of a range of similar tools, broadly labelled 'social software', which have been developed to allow users to control knowledge and ideas, not merely to access information.

Coupled to this approach is a new order which supplements formal, vertical organisational structures with ad-hoc, dynamic networks designed to exchange ideas and information. Megan Griffith writes in the Guardian: *'The connections that ICT facilitates suggest that some organisations increasingly may be bypassed, and that power may shift away from top-down hierarchical organisations and towards more fluid and participative networks where there is less need for a centralised "bricks and mortar" coordinating organisation.'* It is evident that the RIBA is aware of these challenges and is putting in place the connections which Griffith commends; this observation leads to the third scenario in the report (*Making Connections*), which integrates the RIBA's research wiki with its current plans for knowledge communities and the planned redesign and upgrade of RIBAnet. In this way, the R&D Department could close the loop between practitioners and the academy, and guarantee the project's success.

The proposals made in the scenarios *Bedrock* and *Making Connections* will involve reorganisation within the RIBA and require additional resources; these matters are outside the scope of this report, and it is recommended that the ideas outlined in these scenarios are explored further as part of a separate study. An integrated approach would bring economies of scale whilst avoiding duplication of effort and reinventing the wheel.

Finally, the RIBA's proposal for the wiki states: *there do remain some open ended questions to be asked and answered and decisions to be made* - this report has attempted to structure these question in such a way that the debate about the wiki can move forward. It is not intended to be what one might call an 'AHA!' report with an Eureka-style conclusion and a list of prescriptive recommendations. Rather, the report uses the patterns to structure these issues in a flexible way which will allow consensus to be built around shared objectives and enable the debate about the wiki to move forward. The network diagrams are best understood as a map for a strategy yet to be realised, and the way to think about this is by using the analogy of options trading in financial markets: the purpose of the pattern language is to identify valuable options for the future of the project, whilst the scenarios help to provide a vision and a means for structuring and maintaining these choices so as to realise that vision.

References and Further Reading

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17	Albert-Laszlo Barabasi	2003	Linked – How Everything is Connected to Everything Else and What it Means etc
18	Mark Buchanan	2003	Small World – Uncovering Nature's Hidden Networks
19	Thomas Friedman	2005	The World is Flat – The Globalized World in the Twenty-First Century
20	Charles Leadbeater	2008	http://www.charlesleadbeater.net/home.aspx

After you have read this report, please take a moment to reply to the following questions:

Does the report adequately set out and explain the patterns and scenarios for building a viable research network?

Yes ☐ Partly ☐ No ☐

Are the conclusions and recommendations of the report relevant to the RIBA?

Very relevant ☐ Some relevance ☐ Not relevant ☐

Is the length of the document:

Too long ☐ About right ☐ Too short ☐

Is the technical content:

Too high ☐ About right ☐ Too low ☐

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