11. Environmental education in a world of networks

Ismael Peña-López
Lecturer in Law and Political Science and researcher at the Internet Interdisciplinary Institute and the eLearn Center at the Open University of Catalonia

Albert Padró-Solanet i Grau
Lecturer in Political Science and Public Administration and researcher at the Open University of Catalonia

11.1. A digital revolution?

The world we know today is largely heir to the profound changes wrought by the Industrial Revolution which began in the mid-17th century. It implemented the discoveries and inventions resulting from the scientific revolution of the 16th and 17th centuries and gained impetus with the political and social transformations of the 18th century Enlightenment.

The progress of this revolution was based on the struggle against two fundamental restrictions presented by the modern economy:

- Scarcity of resources, which are mostly material and therefore finite.
- Production and transaction costs, often connected to production, information and communications logistics.

The way society addresses these restrictions using the new tools drawn from the distinct waves of industrialisation is growing intermediation from all walks of society. While intermediation itself is nothing new, what is novel is the enormous growth in the concentration of processes within the same organisation (businesses, associations, parties, trade unions, parliaments, schools, etc.) that seeks to be more efficient (doing more things with fewer resources) and effective (achieving more objectives).

Due to the increasing complexity of organisations and often also the growing need for investment to enable them to perform their work, better planning, coordination and, in short, organisation in decision-making is required. While it is also not new in society, hierarchy is the fundamental architecture when allocating resources (material, financial, human) to the tasks that are carried out in an organisation. In an industrial context, hierarchy is efficient and effective.

Of course, this also happens in the field of public decision-making from governments to parliaments. In addition, all the organisations that come together to form what we call "politics" (parties, unions, power groups, civil society organisations, etc.) also become "industries" that are governed by the same principles.

Broadly speaking, the digital revolution entails the digitisation of information and communication. For everything that is knowledge-intensive - a growing proportion of our lives and economies - this will mean a radical redefinition of the two restrictions mentioned above:

- Resources will become infinite (it costs virtually nothing to replicate digital information) and it will not be necessary to physically access them in order to use them.
- The cost of communicating (talking, negotiating, exchanging digital goods and services, etc.) will become derisory (at least in the technical field).

All of this has had profound consequences for the way we organise ourselves as a society. Thus in terms of technology we have become increasingly dependent on the internet or mobile apps as a platform. We have systematically migrated our data and communications from paper to computers and from computers to the cloud. In this migration we leave behind us a trail of data that are increasingly becoming the fuel that moves the digital economy and, with it, the world. It is a digital economy that is no longer just driven by organisations but also by users, by people, by citizens. Citizens can now extract information from any source, edit it, enrich it and share it with the rest of the world. Participation has become the main pillar of the technological architecture of the new digital age

What we have just described is both a cause and consequence of a change in philosophy, in which the fact of creating and sharing turns any digital medium into a medium not only for communication but also for socialisation. It is socialisation without intermediaries (albeit with new technological intermediaries, of course), without filters, in which there are no time lags; things happen here and now. In this world without intermediaries (or with intermediaries with greatly changed functions), popular meritocracy is the currency for attributing reputation to transmitters and recognition to what they say. Virtual communities are set up around any topic that are only structured on the basis of this reputation and recognition and create critical mass where once it had seemed impossible. Everything becomes a conversation, an open conversation that has no beginning or end: it is no longer necessary to have "finished products" because creating, modifying and evolving has practically no cost. In some areas a gift economy featuring free and open contents where compensation is often not financial is beginning to become dominant.

These changes are accompanied - or structured - by powerful communicational and organisational changes. The network and the fact of belonging to it become a priority. Hierarchy and centralisation in decision-making become less efficient and effective compared with cooperation and facilitation. The role of intermediaries is called into question, especially those that intermediated when it comes to giving a voice, to putting topics on the public agenda.

11.2. Tools and types of tools

The digital revolution and the technological, philosophical and communicative paradigm shift would not be visible if they did not have an app in our daily lives.

Web 2.0 tools have often been the way in which we have noticed through the back door as it were the great changes that affect our daily lives. Below is a brief outline that will help us to establish an initial elementary classification of the many tools and apps that we have at our fingertips. It will also help us to understand the possible uses of these tools and apps from the point of view of the objectives and tasks to be carried out, rather than what often happens when we simply use them because they are there.

We have simplified our categorisation into just four areas:[1]

- Quantitative directionality refers to the number of players that can be part of a conversation.
- Qualitative directionality is about who has greatest control over this conversation. If it is one-way, only one speaks while the others listen. When it is two-way, one of the players may have greater power than the others. For example, the owner of a blog can add posts to it while the others, although they can speak, do so through comments which in addition the owner may moderate or delete. It is therefore asymmetric bi-directionality.
- The cost of the apps is what we have to pay to use them. We think it is a relevant factor since it can level - or democratise - access to these tools (unlike what would happen with a printing press which requires very high investment).
- Competencies measure the personal cost, the effort that a person has to make to be able to use these tools. As in the case of financial cost, they may also be levelling or unbalancing.

As will have been seen, the location of some tools and apps is at least debatable. Our intention is not to analyse the tools in detail but only to suggest an understandable and

1. There is a more extensive explanation in Barreda et al. (2010) from which we have extracted a simplified and updated version for our students.

useful way of approaching them, although in some cases it is not entirely accurate.[2]

The approach we suggest is as follows. Instead of letting ourselves be dragged along by fashions and adopting certain tools or apps on no other grounds than adopting them or knowing about them (necessary, but not sufficient), we believe that it is more useful to look at the objectives of the communication, awareness or participation project and choose the tool based on them and the context. This stance is not new but often can be when the popularity of a tool pushes us to adopt it on impulse.

So say we want to establish quick communication which provides flexible feedback from the public with few resources and lasting only a short while. A microblog (Twitter) would probably be very useful since most people already know how to use it and do use it, which means we do not have to invest much time, personal effort or money and we will without doubt capture the pulse of the situation. By contrast, if we want to work long term with a large number of organisations in a very complex information environment, it may be worth investing in a more complete tool even if we have to allocate time, training and money, as we will better control information management and communication and it will provide us with a number of features which we will surely need at some point.

11.3. The communication plan

Any communication campaign on social media has to take into account a number of key factors that help it reach its target audience and at least perform at the highest possible level. What are these factors? How should we arrange our communication?

11.3.1. Set objectives

The first point to keep in mind is that you have to set the campaign's objectives. What does the campaign seek to achieve? Perhaps the goal is to increase the number of views of a video or add to the addresses we have on our mailing list. Specifying clear objectives will be a guide as to whether the campaign has been a success or not.

To help us set these objectives we need to make sure that they are SMART. Acronyms like this are constantly used in marketing to remember the pieces that are part of a process, and in this case the letters in SMART stand for Specific, Measurable, Achievable, Realistic and Time-bound.

- **Specific**. The objectives must be clear about the need to be achieved.
- **Measurable**. The objectives should be quantifiable in some way. It is better to say that you want to get over a thousand views of a video or "likes" on a Facebook page rather than wanting the video "to be popular".
- **Achievable**. Although the objective must be a challenge, we need to make sure that an improvement in what has been done to date is actually achievable given the resources we have available. It is important to keep in mind that the objectives must be consistent with our funding possibilities, our staff, our technical capabilities, etc. to avoid frustration. What we want to do is precisely to maximise or optimise the use of these resources.
- **Realistic**. This point somewhat overlaps with the previous one - we cannot set objectives that are not achievable - but adds the nuance of going beyond the simple availability of resources. Can the objective be achieved even though we have the resources given the other objectives at work? Is it realistic to assume that we can allocate all our resources to the campaign?
- **Time-bound**. Finally, a point in time must be specified by which the objectives should be achieved.

2. Facebook, for example, plans to charge for some features. However, we have preferred to consider it free (not freemium) since we are talking about very specific functionalities for specific uses and groups.

An example SMART objective would be "with our campaign we want to reach fifty more subscriptions to our newsletter before the end of the year".

11.3.2. Decide on the target audience of our communication

When we are dealing with an issue such as environmental education, it may seem strange or contradictory to take a marketing approach. At the end of the day, marketing is the tool that industry uses to turn people into consumers to make greater profits.

However, the marketing mindset, approach and methodology are useful not only to sell products and services but also when planning social marketing, i.e. the idea of convincing society in general or some of its segments of the desirability of adopting certain behaviours that are necessary for the good of society as a whole.

Social marketing focuses on areas such as health, safety and, of course, environmental education and sustainability. It meets the need of contemporary developed societies to tackle a kind of problems that are not the same as the typical problems that government is supposed to solve and was indeed set up for that purpose.

a) Wicked problems

Rittel and Webber (1973) called these problems 'wicked problems' and they are much more difficult to resolve than 'tamed problems' because they are not linear.

In wicked problems it is not very clear what the problem is because not all the groups of people involved have the same idea of the problem. Nor is it clear how to resolve it, because when you want to fix part of the problem it is probable that you will produce another one somewhere else. In other words, with wicked problems there is no consensus about what the problem is which means that solutions tend to produce unwanted effects. However, with tamed problems like mass transport or water distribution it is relatively easy for everyone who is involved (users, technicians, government, private companies, etc.) to agree on the approach and means needed to solve the problem.

Wicked problems typically require a change in the behaviour of a group of people or the public as a whole. Solutions to wicked problems cannot be enclosed within the limits of the administrative organisation. Hence one of the current dogmas in the development of public policies is the need to get the general public and all the groups affected by each policy involved in specifying the policy, drawing it up and implementing it. The paradigm of citizen participation is now accepted by all political schools of thought on both the right and the left. Naturally there are differences of nuance and debate on concrete ways of how this participation should be carried out, but everyone agrees that the typical government programmes to resolve these problems are inadequate.

Social marketing is the most useful way of getting people involved in politics. Marketing takes a special approach to organisations' problems: it puts the customer, their needs and features at the centre of its attention and then it adjusts the whole organisation around them. In the case of social marketing, the question is how to get a group of people or the public as a whole to "buy" our product, i.e. to achieve a change in their behaviour. This means that we need to study how this "product" can solve problems or meet the needs of the public or these groups of people and how this behaviour has to "compete" with other behaviours.

b) Audience segmentation

In marketing, the main consequence of putting customers at the centre is that we can group them according to their needs and characteristics related to the product or service. This has enormous consequences because this grouping or segmentation is the basis for the adjustments we have to make to our products - and therefore the features of our organisations - in order to successfully cope with competition from other products and services offered by other organisations. Audience segmentation also gives us clues about the most appropriate way to communicate with them and helps us to understand our competitive environment and design effective communication strategies.

Segmentation should be the result of paying attention to the features of our audience and studying them. Only if we know their needs and their problems from their point of view - putting ourselves in their shoes and seeing the world through their "glasses" - can we segment properly. In the marketing approach, the audience is not a passive or inert entity that we have to hit with our messages as if it were a bulls-eye; rather it is active in choosing what it does because it has habits, customs, viewpoints, tastes and aspirations together with resources and is affected by contexts that limit or enhance it.

Hence finding out which of these characteristics affect our audience when buying or using our product is what determines our segmentation.

Consequently it should be clear that audience segmentation cannot consist simply of listing a set of socio-demographic data about people: there is a certain percentage of women and men, a certain percentage who have completed secondary education or a certain percentage of old people.

In social marketing people are segmented by how they will react or respond to the behaviour change we are proposing. When segmenting we should ask questions such as: Which people are most at risk (or have the most impact on the problem)? Who are most open to change? What is the key to the success of our programme? Is it possible that identifying influential people or organisations, for example, will enable us to reach population groups that are inaccessible to us or enhance our message?

There may be segmentations with different levels of generality depending on the programme's scope.

One example of segmentation that is useful for a national level programme about global warming is in the studies by Maibach, Roser-Renouf and Leiserowitz (2009). In later studies it was found that the sizes of the groups remained the same (Leiserowitz, Maibach, Roser-Renouf and Smith, 2011).

The information they used to group people was based on the differences they reported in their degree of certainty about global warming, their degree of engagement with the topic, their knowledge and beliefs, the expected effectiveness of actions and the potential results of national efforts to reduce global warming, personal involvement and actions in reducing it, interpersonal communication and social influence, research activity in the media, socio-demographic features and their values.

Using all this information the study distinguished six segments that represented different proportions of the American public. The *dismissive* segment, which accounts for 10% of the US population, does not believe there is any warming. They have thought and been informed about it, but do not consider that all scientists agree or that it will affect human activities. They do not think about a negative impact either on people or on the environment. The *doubtful* segment (15%) does not believe that the issue affects them personally or is a major threat; it is divided equally between those who believe there is global warming, those who do not believe there is and those who do not know. They tend to think that the causes of global warming are natural. By contrast, the *disengaged* (10%) segment lacks knowledge or opinions about the issue. They have not thought about it or paid any attention to it. They do not know whether it is happening or whether it may affect them. A larger group (25%), the *cautious*, mostly do not consider that global warming is happening, but they are not convinced and can change their minds easily. They have not thought much about it and do not know much about it, but a large number of them are concerned. 50% of the group believes that global warming is due to human causes and a third consider that there is a consensus among scientists. They do not think that it represents a danger to themselves or to humans today, but does for future generations. The largest group is people who are *concerned* (27%), who believe that global warming is indeed happening, there is a scientific consensus that it is caused by human activity and they are concerned about it, but their degree of conviction and engagement is lower than that of the *alarmed*; equally they tend not to see global warming as a personal threat. Finally, the *alarmed* (12%) segment is the one which is most convinced that global warming is really happening. They are the most engaged and concerned, and consistent with this are the most convinced that global warming is due to human activity and an individual and collective threat.

This example shows how to take into account people's attitudes to and knowledge about a particular problem in order to build segmentation that is relevant when designing appropriate communication, persuasion and engagement strategies. For example, messages for the *doubtful* segment will have to be different from ones for the *dismissive* segment. The content and format of these messages have to be tailored to each segment and the way of reaching the various groups will also be different. While some groups have information and attention habits that make them easily reachable (they follow the news about the topic, undoubtedly read specialised publications and belong to groups working in ecological issues), there are other groups that will not access our communication so easily because they are not interested in the subject (traditionally the most likely way of reaching these groups is through the mass media). Segmentation also enables us to identify groups that may be allies of our policies and become co-producers and disseminators of our messages.

An important issue in segmentation is to identify the groups we consider to be a priority, either because they are crucial to the success of our campaign or because they may have an impact on what the other groups do. Thus teachers, educators, traders and local associations, such as ones for people who go out looking for mushrooms in the autumn, can be very useful when contacting individuals belonging to groups that we find hard to reach.

The requirement to identify the segments and treat them differently goes against the reluctance of government to allow special or discriminatory treatment of people. However, this objection is not very strong when you consider that the objective of segmentation is to ensure that public policies mapped out by the political community as a whole are more effective.

In a nutshell, when segmenting it is essential to know what each group really does in relation to the behaviour we want to change. Social media can be very useful in this respect by enabling group members to explain their attitudes and share their behaviours (e.g. through photographs). The greatest hazard when trying to learn about the groups is falling into stereotypes or clichés as they may confuse rather than help with finding out the truth.

c) Analysing the competition: thematic networks and public policy

In the marketing approach, segmentation leads to analysis of the competition. Of course, in the case of social marketing our competitors are not the manufacturers or suppliers of the same type of product or service that we provide ourselves. The competition for the conduct or behaviour that we want to promote among our audience comes from the other behaviour or habits they have already acquired or may acquire and which prevent them from following ours. We will use this idea of competing behaviour later on in the example of segmentation of urban market gardens. In the case of campaigns to reduce obesity in children and teenagers, the competition is soft drinks or television. In the case of waste selection, we have to compete with the ease of not having to think about it or with the space that homes need to set aside for the various types of bins. In all these cases understanding this competition allows us to better understand what we are offering and consequently segment our target audience.

Knowing the preferences and habits of our users helps us to learn how we can solve the problems they may be facing to the point that we may be able to improve our offering. For example, the distribution of ashtrays in the shape of ice-cream cones on beaches meets smokers' need to have somewhere to dispose of their cigarette ash and stubs. If the reason for not complying with the rule was not misinformation but rather relative impunity and the inconvenience caused by the lack of places to properly dispose of the ash and stubs, then the best response is to make compliance easier and give the offender no moral excuse. In addition, the gift of the ashtray could be used to enhance communication about the importance of the social problem of pollution or other related environmental issues.

The topic of competition also makes **thematic networks and public policies** into the normal way of producing public policies in developed societies. Indeed, public policies are not normally the responsibility of a single organisation that develops them from start to finish. On the contrary, there is a host of organisations, public and private associations, social groups and stakeholders that have to be coordinated in some way to carry out public policies (Heclo and Wildavsky, 1974, and Heclo, 1978, were the founders of this standpoint). This means that when doing social marketing we always need to keep the existence of these other organisations in mind which insofar as they are in contact with the audience we want to reach will help us to better understand it. They can become allies when carrying out our campaigns. While some of these organisations and agencies may have goals that might be in part at odds with our own (for example, agencies or departments that draw on the same budget as we do or aspire to the same kind of funding), there is usually much more to gain than the recognition of areas where interests coincide, and cooperation can bring gains and visibility for all. In general terms the thematic networks perspective leads to the advisability of opening out the focus of our attention when resolving our problems and moving from potential short-term threats to the reciprocal gains of long-term cooperation.

11.3.3. Identify the places where we will address our audience

Segmentation forces us to investigate our audience which means that in order to learn about it we have to look for the places where it is located. Normally we will use all social networks and all search and diagnosis media to try to find our online audiences. The great interest of new technology is not that it has created the social networks that allow people to meet; in reality, social networks have always existed. However, as a result of new technology we can now access them to learn about the various audiences in a way that has not been possible previously. The basis of all this work is active listening: What are these people saying? How are they saying it? What do they think? Why?

These meeting places are also prime candidates for learning where we have to target our audience. However, we also need to recognise that the virtual world is not a parallel world separate from the offline world. There is only one social reality, but the virtual world has provided dimensions and potentials that were not possible before its invention and distribution. Our media campaign should also bear in mind the interaction of both dimensions and try to mutually enhance them.

11.3.4. Think about the core message we want to convey

Using the knowledge gained about our target audience and its environment we can design our core message, the idea that we want to convey. In a traditional marketing approach that used the mass media, when considering the message we would need to carefully choose words in order to reach our audience as completely as possible and avoid misunderstandings and boomerang effects. We can minimise the risks through having thorough knowledge of our audience. Naturally, a communication plan that uses social media and where the main feature is interaction between users must be prepared to build messages that can be reused by the audience we want to reach. Indeed, co-production is one of the key factors for the involvement of social network users.

11.3.5. Decide on the resources to be used in the campaign

When designing the communication campaign we need to make provision for all the resources it will require. Campaigns using social media tend to have a low cost in terms of the software they need as they usually use free platforms. However, they also call for a lot of time and effort in terms of personnel. Hence we need to foresee the staff numbers we will need and for how long and what their qualifications or skills should be. As for material resources, we will have to decide whether the equipment we have available is sufficient and appropriate for the type of campaign we want to implement. If we want greater control over the campaign's content we will need to have enough material to host our website or blog. Finally, we also need to provide for the financial resources required.

11.3.6. Select the appropriate media and tools and frequency of use

Choosing the appropriate media and tools will also be based on our audience segmentation, and we should opt for the ones used by the various segments. In a study of young Americans' use of social media, Danah Boyd (2007) pointed out that while Facebook's audience was young people in the school system and from well-off families, young people using MySpace tended to be marginalised and members of all kinds of minorities (immigrants, sexual minorities, etc.). Obviously this information would be relevant when designing communication plans to address youth issues.

Furthermore, there are numerous social media platforms which are linked to each other such as Facebook, Twitter, Instagram and LinkedIn. If we want our campaign to be successful, we need to ensure that the campaign carried out in each medium enhances the ones run on other platforms.

When doing so, we have to ensure we follow the **four C's** of any campaign. Thus we have to use different media and keep the message **consistent** over time; we need to **coordinate** actions between media and between online and offline actions; we have to deliver **continuity** between the different platforms used; and finally we should make sure that the messages broadcast on different platforms are **complementary**. Since we know that the platforms are different from each other, we should tailor our messages to get the most out of them. Likewise, what can best be said in one medium should complement what you cannot say or at least not so efficiently in another. If you think of this complementarity as a mosaic where the pieces fit together, you can understand the advantage of this whole over the simple sum of its parts.

11.3.7. Measure the campaign's success

One feature that every communication plan needs is a system that allows us to evaluate the success of the campaign we carry out. As we have seen, the possibility of this measuring is connected with setting the communication plan's objectives. We now have many analytical tools available to measure the impact of our online communication. Often the danger is to confuse a measure of our communication's overall impact with a measure of the actual impact we were trying to achieve; for example, confusing the number of page views with the popularity of this page in our target audience. Hence it is a good idea to design our communication in a way that allows the exchange of information with users.

Of course, the features of social media and networks have meant a radical change in the way information is exchanged with the audience, which becomes an information transmitter and co-producer. Thus success measurements should try to include these features if they do not want to go awry.

11.4. The project's PLE; provide tools, forge ties, build a network/community

When we work in the field of open social innovation (see Peña-López, 2014), and especially if we consider institutions as platforms for citizen participation, it is almost inevitable to think of the Personal Learning Environment (PLE)[3] as a useful tool for conceptualising or even managing a project, especially a knowledge-intensive one.

We will use as a definition of a PLE the "set of conscious strategies to use technological tools to access knowledge contained in objects and people and by doing so achieve specific learning goals" (Peña-López, 2013). We will further assume that the purpose of a knowledge-intensive project is to achieve a higher knowledge threshold, i.e. learning, knowing what is going on, how, why, in whose hands and where it is headed.

The common - and traditional - approach in these types of projects can in our view be simplified as follows:

- Extracting information and knowledge from the environment.
- Managing and processing the information and knowledge to add value.
- Distributing, disseminating and transmitting the knowledge.

3. See Castañeda and Adell, 2013.

In general these stages occur sequentially and are quite independent of each other. They often even have different departments behind them.

This is perfectly valid in a world where the tasks associated with information and communication are costly and call for time and physical space. However, many of these things are no longer like this and nor will they ever be again. Costs have fallen, the issue of physical space is virtually irrelevant and many of the barriers associated with time have simply disappeared. What was once a straight line - extract, manage, distribute - is now a circle, or a long sequence of iterations around the same circle and variations of it.

Hence it would be worthwhile to ask whether it would make sense to treat knowledge-intensive projects as another node within a network of actors and objects working in the same field. As a node, the project can be either an object - including information or knowledge that can be (re)used - or the reification of the actors whose work or knowledge it is incorporating; therefore, the actors can come into contact through the project.

A good representation of a project as a node in a network is to think in terms of a personal learning environment, i.e. as a project-centred personal learning environment. We thus move away from the project as something self-contained in itself, linear, with a beginning and an end, and disconnected from other projects or the environment in which it is located.

A simple outline of a personal learning environment focused on the project might have three main areas:

- The institutional part of the project which includes all the data collected, the references used, the "products" (documents, presentations, etc.), a blog with news and updates, collaborative workspaces (e.g. shared documents) and everything that takes place on social media platforms.

- The flow of information made up of data sources, collections of references and other works housed in general content repositories.
- The exchange of communications with the community of interest, whether individual specialists, learning or practice communities or face-to-face events.

However, unlike in traditional project management these areas interact intensely with each other, sharing information, feedback and sometimes converging on specific points and ideas. Under this paradigm, the project itself is redefined by these interactions along with the adjacent nodes in the network.

We can think of at least three types of knowledge-intensive projects where a project-centred personal learning environment approach can make a lot of sense:

- Raising awareness.
- Research.
- Open social innovation (including political participation and civic engagement).

Knowledge is fundamental in all three types of projects, as is dialogue between the project and the actors and resources in the environment. Thinking about knowledge-intensive projects not in terms of extraction-management-distribution but rather in terms of personal learning environments, and taking into account the generalised permeability of knowledge to be found in a well-connected network, is most likely considerable progress. It also helps to better design the project, the input of the information and the return that will surely end up feeding back into the project itself.

There is one last idea worth mentioning. Sometimes it is difficult to sketch or even recognise one's personal learning environment: we are too used to working on projects to see our own ecosystem; we are so project-based that we forget about the environment. Thinking about projects as personal learning environments helps to do the following exercise: aggregating all of them should help us to realise the following:

- Which data sources, bibliographies and repositories we use globally to support and build our projects.
- Which specialists, practice and learning communities and main events we normally interact with, most of the time also contributing the results of our own projects.

In short, viewing projects as personal learning environments, raising awareness, research and open innovation can help both in a broader design of these projects and also in a better recognition of our own personal learning environment. And, with all of this, help in mapping out a better work strategy, better objective setting and better identification of people and objects (resources) and an improvement of the toolbox that we will use throughout the process.

11.5. Cases and FAQs

Below we present an outline of concrete examples of how social media tools can work in social marketing campaigns. The first three cases are developments of potential campaigns at the local level, while the last two are real success stories that illustrate the diversity of forms that campaigns can take and the aspects they have to consider.

11.5.1. A community market garden project

a) Objectives: the rationale for the project

It is a facilitation project with two aspects: environmental and social. The objective is to use environmental education as an opportunity to socially integrate groups at risk of exclusion, groups with disabilities and the elderly.

The mandate is complex. The priority objective is to resolve the integration of social groups. The community market garden project is the concrete task, but ICT tools mean coordination and internal communication problems can be flexibly solved and at the same time the activities conducted in the community market garden can be displayed to the outside world, to other groups outside the priority groups.

b) Identification of audiences and adaptation of the "product"

The three types of priority group will most likely have different forms of contact with the "product" offered (creation and maintenance of urban market gardens) and ICT. The first phase of the project should be to thoroughly study the characteristics of these groups in order to adapt the supply of urban market gardens in a way that integrates ICT tools.

The municipal services that are responsible for priority groups are the means to obtain information and establish contact. It is advisable to set up a collaborative relationship with social services, employment services and other departments of the local council that can help us. We can avoid potential problems by being aware of the political context in which the relationship is built and the interdepartmental rivalries that can arise in any complex organisation. To encourage collaboration we would ideally devise formulas that allow all the actors that we rely on to obtain critical resources (such as information or the programme's participants) to take part in the rewards of the project's success, even if only symbolically. This "diplomatic" wisdom may make the difference between the success and failure of many projects.

In addition to the technicians and specialists in the various audiences, it is advisable to meet and talk with the members of the groups, ask them about their preferences, their conditions and their interest in the activity of the market garden. We need to learn as much as we can about these audiences to identify audience segments: Are there any that are more likely to be favourable to the project? Any that may influence the others? Or any that need it more or can get more out of it?

Familiarity with new technology is an important aspect. If they use it, it may be a good place to find them, listen to them, get to know them and recruit them. If they do not use it, as part of the marketing mix our communication plan can offer them the product mix we intend to deliver: it provides training in digital competence.

c) Tools

ICT tools can be an ideal way of making possible the internal organisation of users' activities (WhatsApp). Users can register activities themselves (text, audio, photos, video) and make them known to the rest of the people concerned through blogs, photoblogs and wikis and promote them through Facebook, Instagram and Twitter pages. The condition for getting the plot is to document and disseminate all the activities that have been carried out there. The idea is that online activity will enhance what is programmed offline. Together these activities should increase the interest of other audiences that are keen on the topic of sustainability and make it possible to recruit new people.

Problems

Of course, we need to make sure that dissemination does not conflict with the social integration goal. The potential of dissemination should respect the comfort of the priority groups targeted by the plan. However, it is clear that the best way to dovetail dissemination and comfort is to hand the initiative over to the activity's participants.

11.5.2. Co-creation strategy for environmental education in primary and secondary schools and municipal facilities

a) Objective: assessment and campaign co-creation

If the idea is to change the behaviour of a social group, its members are the people who can best identify the barriers to adopting it and design action plans to help change it. Asking students in the municipal school system to take part in identifying problems and opportunities in bringing environmental education to schoolchildren is the best way to involve them, learn what their specific problems are and also ensure that there is more awareness of environmental issues.

The plan for assessment and preparation of environmental education in schools needs to take into account the various audiences which can be targeted. At the very least it should be borne in mind that primary school pupils are quite different from high school students. The type of integration in the school system and the relationship with teachers is very different. Hence co-creation plans have to be different for each group if we want to take these differences into account.

For example, participation in assessment and planning is a mark of respect for the ability and maturity of high school students. This potential motivation can be offered to high school teachers as an additional tool for dealing with the problems they usually face. Participation in the programme can be encouraged by suggesting that it counts as an activity in the evaluation of a foundation subject (multimedia or a technology or science subject).

b) Tools

Social media are the perfect basis for carrying out many of the interactions required in the co-creation project by combining the various tools available. Wikis and blogs can be used to organise and conduct the assessment phase while Doodle can be used to let people vote to choose which activities should be implemented.

One way to quickly boost student participation is to create an ad hoc app for taking pictures of good and bad environmental practices. We can create a very powerful tool for compiling and distributing the activities of the primary or high school students by using an app combined with social media that allow us to share photos and videos (Twitter, Instagram, Photoblog, Vine and YouTube) with the help of Hootsuite or IFTTT and Dropbox storage space.

One way to involve the participants is to "gamify" the interaction. Besides showing that the programme has students at its centre, it will also promote use of the tools and based on the level of this use we will learn how much interest it triggers.

One way of displaying the contributions and "gamifying" them would be geotagging them on maps. This information can then be used to perform finer-grained analysis to relate the behaviours of the people concerned with other information available in the maps and identify black spots or priority areas for campaigning.

Finally, we can use the tools (blogs, Facebook, etc.) to display the students' initiatives. The information gathered can be stored and used as a reference for future initiatives.

11.5.3. Designing a campaign through social media to promote energy savings during European Energy Week

a) Objective

The campaign to promote energy saving is aimed at the general public, but we should differentiate between the different audiences and find the ones that are the priority for our campaign.

b) Segmentation

We want to use social media, and a good way of doing that is to find the audience that is already using social media platforms such as Facebook, Twitter and Instagram in our town to identify their interests and views in relation to energy saving.

c) Tools

A basic way to promote the campaign is to offer content through our website or blog. Various aspects of the campaign can be "gamified". Thus we can use infographics to encourage the participants themselves to get information and spread it. In the same way we can make images or videos with practical energy saving tips in order to get them to go viral. We can also run a contest with the slogan, for example, "How much do you save?", check last year's electricity or gas meter readings and give prizes to the people with the largest savings percentage, or a contest for energy saving ideas that can be presented in person as well as online.

11.5.4. Creating a map of cycling routes in Kuala Lumpur[4]

a) Objective: identify the problem

Kuala Lumpur is a city where 93% of homeowners have a car and it is built for travelling by car to the point that according to market research agency Nielsen, Malaysia has the third highest rate of car ownership in the world. The problem was how to turn the city into a more bike-friendly one.

The proposed solution was to draw up a map of roads suitable for cycling with the collaboration of users and also the city's mayor. The person at the forefront of the initiative was Jeffrey Lim who for several years had been organising bike rides through the city at night or early in the morning. He first got the idea for a bicycle map in early 2012. He wanted to show how the city could work for cycling "not for leisure, but for transportation, for utility." Knowing that most people thought cycling was impossible, he envisioned the map as a tool for advocates. The map was aspirational "because the map would have to come before the infrastructure."

As Kuala Lumpur had no dedicated cycle lanes, the volunteers explored the routes that it was at least possible to cycle, from major roads to unmarked paths, and the routes were marked by their accessibility for cyclists.

4. Based on an article in *The Guardian* (18 September 2015) about crowd-sourcing a cycling map (http://www.theguardian.com/cities/2015/sep/18/how-crowd-sourced-map-kuala-lumpurs-ideas-cycling).

b) Tools

When he had a large group of volunteers, Lim started a Facebook group for the project where volunteers began sending sketches and photographs that started to shape the map. Because he knew that there were English-speaking cyclists in some areas of the city, he recruited bilingual volunteers to contact them (audience segmentation). After two years and three drafts, the map was completed in September 2014 and published and distributed in printed form in three languages: Malay, Chinese and English.

With the success of this grassroots campaign, some local councils became interested and Lim now had the challenge to turn the map into real infrastructure. While the government had talked up cycling in the past, there was no real interest in taking the project forward. Finally, he got a lucky break in that the new mayor of Kuala Lumpur, an avid cyclist, became interested in the project and approved the first bike lane. The City Council is now considering building two more.

"The map connected all these like-minded people and created a strong community," says Lim. "It started the ball rolling. No matter how small the move, it's still a stepping stone for the next move – by whoever."

11.5.5. The worst best paid job in the world: street sweeper in Linköping

a) Objective: motivate

This is a relatively old case (2009) but one which cleverly used the possibilities of social media to achieve its objectives and reach its audience.[5]

This project was inspired by the competition run in Australia for the best job in the world as 'caretaker' on an idyllic island in the Great Barrier Reef. The City Council of the Swedish university city of Linköping together with the Ungdomsombuden (the citizens' council of youth representatives) offered a

5. See: http://www.tes.co.uk/article.aspx?storycode=6020980.

very well paid job in the municipal cleaning service (*the worst best paid job in the world*). The objective was to sensitise young people about civic behaviour and respect for the environment. Young people were the priority audience for the campaign because young Swedes are in the habit of holding drinking sessions in the city's parks in the summer months which had become the main problem in conservation of public spaces in built-up areas. The opportunity was based on the fact that during the summer months young people often apply for any job that doesn't require qualifications. The campaign was designed to attract the attention of these young people and involve them in improving the city.

b) Tools

The offer was made through a small ad in the press and also on the City Council's website. It was open to young people aged 16 to 22 in the city. The winner would have free public transport, food, a laptop, a digital camera and a salary of €3,000 per month. The job was to collect rubbish during the summer months, write about the issue on their blog, Twitter or Facebook, post pictures and emphasise the problems of cleanliness and sustainability caused by antisocial behaviour. Obviously Linköping's super street sweeper could attract young audiences and communicate with them in their own language. Their activity and their comments during the summer months would be a continuous campaign among the priority audience which represents a maintenance problem for public spaces.

In order to be eligible for the job candidates had to answer a questionnaire about it which they could do with materials available on the City Council website. If the answers were incorrect you could not go on to the next stage. A local committee selected the ten best candidates for the job who had to submit a project on the website in which they had to describe and explain the reasons why they had applied for it. To promote their candidacy they had to use Facebook. Finally, an online vote was held to select the winner that lasted a week. This procedure captured the attention of the priority audience and people who were capable (knowledge test) and popular within their segment (able to win the vote) were chosen.

c) Outcomes

There were 1,500 applications for the job which represented 20% of the campaign's target population (high school students in the city). The blog had more than 200 unique visitors on an average day of the campaign. The objective of raising awareness, taking responsibility and giving a sense of ownership to a group that typically feels marginalised in cities went beyond simply picking up litter and it seems that it was achieved.

11.6. Conclusions? Points to keep in mind

The industrial age is about to come to its end and we are approaching a new digital era. It will be a new era in which it appears that institutions, characterised by hierarchical structures geared towards decision-making and intermediation, will have to coexist and often turn themselves into other organisational structures which are more flexible and allow the entry of many new actors.

Below are some key points about where we are, why we are where we are and therefore what we have to do.

- We have to know how to manage the network in which we are just a node. As important as this node may be, it will always - let's not forget that it is a network - be possible that someone may disregard it (or us) to achieve their objectives. If we are not useful to the network we cease to exist, as it will become increasingly difficult to force things to come through ours.
- Although institutions are not essential (remember that they are just one more node in the network), they do have assets that other nodes do not. Knowing the context is probably the most important

of them. While individuals have, by construction, visions centred on themselves, institutions have a panoramic view. It is essential that institutions rethink their tasks and that they build on this ability to contextualise the public's needs, problems and yearnings.

- By contrast, institutions cease to be meeting places, or rather they are no longer necessarily the only meeting place. If we believe that we are a network, that latter will find the best way to structure itself. We need to identify the agorae where the community of interest in which an institution wants to participate meets. If there isn't one we can help create it, although most likely there will be one. We would say it again: one more node in the network.
- Once the agora is found, the goal of an institution is to foster interaction. However, fostering is not leading but instead facilitating, enabling and structuring. The public often knows what they need and want more than institutions do. With the help of their panoramic vision institutions can help to better specify these needs or yearnings. Yet it is above all by contributing resources that institutions can implement debate, deliberation and change. But with which resources? We shun the economistic bias of thinking that everything is money. Data, information, knowledge, intermediation, initiative, identification, recruitment and involvement of actors and so on are issues in which institutions can play a very important role, provided they have the humility to recognise (lest we forget) that they are just one more node in the network.
- Networks work well not only when they have lots of resources but also when they are well organised and accessible to as many nodes as possible, and especially when what we know how to do is easily replicable so that knowledge can be spread across the network. The success of many initiatives is based on the fact that they have focused on working on processes and protocols rather than content. In other words, the old saw about the rod and not the fish, the how and not the what. It is true that teaching processes or the way to do them makes us expendable as opposed to retaining some control over contents or resources. Yet this was already the case when we became one more node in the network.

Having come this far, we can conclude with what is perhaps a logical consequence of everything we have said up to now: **we must really be in networks, not just use them because they are there**. Another way of formulating this statement, which encompasses everything, is that in networks you should not work in the style of a campaign but rather as a presence. If we think about campaigning, we are already too late. This does not mean it will not have an impact, but it will most likely be media-based and disappear as soon as there is another campaign. If we think about presence, the work logic will be to form part of a community, i.e. **to actively listen to and share with** the rest of the community. Was not this the exercise of citizenship?

References and other recommended reading

Barreda Díez, M.; Batlle, A.; Cerrillo i Martínez, A.; Padró-Solanet, A.; Peña-López, I.; Serrano Balaguer, I. (2010): *Noves Tecnologies i participació ciutadana. Quines eines per a quins usos?* [mimeo]. Barcelona: Diputació de Barcelona.

Boyd, D. M.; Ellison, N. B. (2007): 'Social network sites: definition, history, and scholarship'. *Journal of Computer-Mediated Communication*, no. 13(1); p. 210-230.

Castañeda, L.; Adell, J. (ed.) (2013): *Entornos personales de aprendizaje: claves para el ecosistema educativo en red*. Alcoi: Marfil.

Córcoles Briongos, C. (2008): *Web 2.0. La web como plataforma*. Barcelona: UOC.

Heclo, H. (1978): 'Issue networks and the executive establishment'. In: *The political system*. Washington: The American Enterprise Institute for Public Policy Research.

Heclo, H.; Wildavsky, A. (1974): *The private government of public money: community and policy inside British politics*. London: Macmillan.

Lefebvre, R. C. (2013): *Social marketing and social change: strategies and tools for improving health, well-being, and the environment*. John Wiley & Sons.

Leiserowitz, A., Maibach, E.; Roser-Renouf, C.; Smith, N. (2011): *Global Warming's Six Americas in May 2011*. New Haven (CT): Yale University - George Mason University.

Maibach, E.; Roser-Renouf, C.; Leiserowitz, A. (2009): *Global Warming's Six Americas 2009: an audience segmentation analysis*. New Haven (CT): Yale Project on Climate Change - George Mason University Center for Climate Change Communication.

Mergel, I. (2012): *Social Media in the public sector: a guide to participation, collaboration and transparency in the networked world*. Indianapolis: John Wiley & Sons.

Peña-López, I.; Córcoles Briongos, C.; Casado Martínez, C. (2006): 'El Profesor 2.0: docencia e investigación desde la Red' [online]. In: *UOC Papers*, 3. Barcelona: UOC.

Peña-López, I. (2013): 'El PLE de investigación-docencia: el aprendizaje como enseñanza'. In: Castañeda, L.; Adell, J. (ed.): *Entornos Personales de Aprendizaje: claves para el ecosistema educativo en red*. Alcoi: Marfil, p. 93-110.

Peña-López, I. (2014): 'Innovació social oberta: l'organització política com a plataforma'. In: Costa i Fernández, L.; Puntí Brun, M. (ed.): *Comunicació pel canvi social. Reflexions i experiències per una comunicació participativa, emancipadora i transparent*. Girona: Documenta Universitaria, p. 59-75.

Rittel, H. W. J.; Webber, M. (1973): 'Dilemmas in a general theory of planning'. *Policy Sciences*, no. 4; p. 155-169.