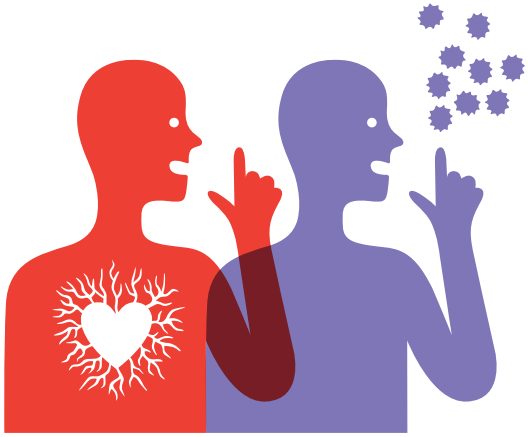

PILOTS

# *Pilots Resource Pack*

## Resources for the professional development of explainers in science centres and museums

Edited by Camilla Rossi-Linnemann and Michael Creek / **JUNE 2010**



Education and Culture DG
Lifelong Learning Programme

EACEA
Education, Audiovisual & Culture Executive Agency

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# Foreword

Who are explainers, and how is their role evolving? There are different names for the people working in a science centre or museum who come into face-to-face contact with the public – animators, mediators, facilitators and pilots, among others. Between 2008 and 2010, the Pilots project, coordinated by Ecsite, worked towards the professionalisation of the role of explainers in science centres and museums through developing European training courses and materials, through community-building and through research on the role of explainers, with a focus on adult learning. Science centres and museums are changing. As a result, the role of the explainer is changing too. The Pilots project deepened our understanding of this new profile across Europe, and raised awareness of the importance of the explainer across the European network of science centres and museums. The project built on work carried out in the previous FP6 European project Dotik and the Ecsite thematic group for human interface and explainers, THE Group, with a particular focus on their importance for lifelong learning.

The work of Pilots focused around five key areas:

1 - AWARENESS

With its results and findings, Pilots worked to raise awareness of the explainer's profile among science centres and museums and beyond our field, to reflect on this and collectively make groundwork towards a European definition of this profile and the relevant training needs for adult engagement in science.

2 - RESEARCH

The Pilots project research began by collecting scientific literature, good practices, and results of other projects about the professional profile of explainers. The quantitative and qualitative data produced within the project gave a unique insight into explainers and training practices in Europe.

3 - TRAINING

The Pilots training courses enhanced adults' engagement with science in science centres and museums, through the training of the explainers involved in the project, and in the long term, through dissemination to the Ecsite members, as well as other stakeholders. The four training courses organised within the project lifespan were at once a way to test training methodologies and a way to disseminate best practice, at local and European level. The multiplying Co-Pilots events allowed this best practice to spread throughout institutions.

4 - MATERIALS

The training materials developed within the project, a selection of which are contained in this document, were compiled to form a resource centre, available to explainers all over Europe.

5 - COMMUNITY

Lastly, a true community was established and is being developed, of individuals interested in the role of the explainer in science centres and museums, sustained on the Pilots Hub, http://pilots-hub.ning.com, our lively web platform that operates as a European community resource for explainers.

The pedagogical materials contained within this document were developed by science communication experts from the various European science centres and museums involved in Pilots, and have been thoroughly tested and reviewed throughout four international training courses and subsequent follow-up activities. Of course, these materials are just a part of the project results – I therefore invite you to join us on the Pilots Hub to learn more about the profile of explainers, to discuss the results and to share your own experiences.

**Catherine Franche, Executive Director**
Ecsite, the European Network of Science Centres and Museums

# Introduction by the editor

CAMILLA ROSSI-LINNEMANN
(NATIONAL MUSEUM OF SCIENCE AND TECHNOLOGY LEONARDO DA VINCI – MILAN, ITALY)

Explainers in science centres and museums are highly qualified professionals who constantly work to adapt to the current needs of new generations of visitors. Research conducted as part of the Pilots project shows that explainers are flexible communicators, who know how to listen to their various audiences and mediate between them and the world of science. In order to do this effectively explainers need to continually develop their skills by searching for new ways to communicate both basic scientific principles and the latest findings and perspectives of science research.

We believe that the best way to increase one's knowledge and abilities is to reflect on field-practice together with others. The activities propose new practical ideas, guided conversation and prompts for reflection that allow explainers to explore – together with their colleagues – issues that are pertinent to their professional development and practice. Activities and materials have been tested in four Pilots international training courses by explainers from over 25 counties, representing over 50 different institutions.

The resources are aimed at professional explainers and they are therefore intended mostly as practical activities that serve as "tools for thought". Rather than giving theoretical frameworks, they want to stimulate independent thinking and prepare for further personal, free learning. Activities are thus based on the idea of reflective practice, where participants are invited to experience some practical activities and use them to reflect on their own professional practice. All activities involve the sharing of personal reflections among participants and materials are thought of as triggers for thought and conversation.

These resources were written to support both expert and new explainers in their training, focusing on four areas of interest:

- The first cluster of activities is dedicated to reflections on the role of the explainer and it includes activities that help reflect on the specific skills and abilities that all explainers should have.
- The second cluster focuses on the idea of enquiry-based learning and on how to develop activities for visitors that take into consideration their pre-knowledge, interests and thinking patterns.
- The third cluster is dedicated to the development and conduction of debate activities which may be particularly interesting for those who want to involve adult visitors in controversial issues of current science.
- The last activity is dedicated to science shows as a means to engage visitors by creating emotionally charged experiences and environments.
- Resources include detailed descriptions on how to conduct the activities, printable handouts, supporting power point presentations and useful readings.

**TIPS ON HOW TO USE THE RESOURCES**

- Select and tailor these resources to suit the time and content needs of your institution. Finding the time for carrying out training sessions is – in fact – both essential and difficult. It is thus not necessary to carry out all the activities included in one cluster. Feel free to pick and choose!
- Think about how the activities you choose fit the needs of your institution. What do your colleagues already know? Can you create an introduction and conclusion that frame the workshops within their everyday practice? Be creative!
- Make sure you are confident with leading the activity and that you know what you want to come away with before you start. You might want to run through it first with your co-leader or another colleague.
- Make sure you have all the materials and handouts ready. You might want to translate them in your local language to make them more accessible to your colleagues.
- Lead the activity in a relaxed and informal way. Give people enough time to carry out the activities and keep them engaged and motivated by encouraging input from everyone. Remember you are there as a facilitator, to help your colleagues reflect on their practice.
- Think about how you are going to capture the reflections that emerge from the workshop. You can use flip charts, coloured post-its, photos and personal notes that you may want integrate in your conclusions. If you can devise an effective monitoring system it is useful to give feedback by sending participants a brief report of the workshop with findings and photographs.
- Spend a little time after the workshop to discuss the experience with your co-leader and colleagues. Self evaluation is precious: how did you feel the workshop went? What would you do differently the next time?
- Please note that activity descriptions refer to supporting materials and power point presentations that can be downloaded separately.

**To share your results with Europe's community of explainers, and keep in touch with other explainers and trainers around the world, sign up on the Pilots Hub:**

**http://pilots-hub.ning.com**

# 1. The role of explainers

PAOLA RODARI
(SISSA MEDIALAB – TRIESTE, ITALY)

Good explainers are an essential component of science centres and museums, yet they are too often neglected and their presence is frequently taken for granted. As a result, little effort is made to understand and raise awareness of their role. The activities included in this chapter aim to help explainers investigate the characteristics of their profession and their role within institutions.

Should explainers explain? Do explainers differ from teachers? What learning goals do they set for their visitors? Is it more important to amuse visitors or to help them in their investigation? Is it better to convey information or to stimulate questions? And are the answers to these questions valid for all the different kinds of activities offered by science centres and museums or should explainers behave differently in order to obtain different outcomes?

While reflecting on the role of explainers, participants will be thinking about what we mean by "informal learning". In fact, these training activities are a chance to experience informal settings, which may also suggest ways to lead and organise activities with visitors.

The activity on the fantasy animal offers an easy and fun way to start discussing the role and skills of science explainers. It can be very useful to include it in a beginners training, but it can also be used with senior staff and repeated through time to see if there are developments in the self-perception of explainers. It is also very useful to help explainers think about the existence of a wide, international community with a definite identity.

The activity that uses the priority game is a good example of how a discussion tool can be employed to reflect on one's own practice. Once again participants will be invited to explore and discuss the features that should characterise a "good" science explainer.

The activity "answers to my boss" was first conceived by Miha Kos, director of Hiša eksperimentov in Ljubljana, Slovenia. The workshop is based on the idea that explainers and CEOs can work together to solve problems within their institutions. Once again, explainers are involved in a reflection on their role, but this time the activity deals with existing problems that might emerge in the organisational structure of their own institution.

# SELF PORTRAIT: THE FANTASY ANIMAL

## EXPLAINERS REFLECT ON THE COMMON POINTS IN THEIR PRACTICE AND ON DIFFERENT WAYS OF DOING THEIR JOB.

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**AUTHOR**
Anne Lise Mathieu (Universcience | Cité des sciences et de l'industrie – Paris, France)

**AIMS**
This workshop aims to help explainers see beyond their differences (different roles within the same institution, different ways of working, etc) and build a common representation of the science explainer's profession.

**YOU CAN USE THIS WORKSHOP TO**
- Create a feeling of shared representation of the explainer's job.
- See how beginner explainers see their job and see how this image evolves after training and after they have worked in the field for some time.
- Start a discussion on the most important skills of a science explainer.

**TAKE HOME IDEAS**

EXPLAINERS HAVE MANY DIFFERENT SKILLS.

EXPLAINERS DOING DIFFERENT JOBS MAY NEED TO BE ABLE TO DO DIFFERENT THINGS.

WE CAN IDENTIFY SOME COMMON CHARACTERISTICS OF EXPLAINERS IN DIFFERENT INSTITUTIONS.

**SELF PORTRAIT: THE FANTASY ANIMAL - BEFORE YOU START**

Timing
1 or 1.5 hours (depending on the number of participants)

Workshop facilitators
This workshop can be conducted by one workshop facilitator, although it is useful to have a co-facilitator who can note down remarks, conduct observations, document the work with photos and recordings.

Number of participants
From 3 to 30

Space organisation
Participants will work in groups of 3 to 8. Each group sits around a table that has to be large enough to fit a poster. Make sure you have enough chairs and table space for them to work comfortably together.
You might want to consider having a large flip chart on which to note comments that can help you introduce the workshop, lead large-group discussion and draw conclusions.
Projector and screen are optional but recommended: you can introduce the activity with PPT1.1, talking about the different names of explainers and conclude by showing the drawings of others groups of explainers around the world.

Materials
- Flip chart and large A2-sized sheets of paper
- Different colour felt-pens (a range of different colours per each group)
- Projector with computer and screen (optional but recommended)

Available for download:
- Workshop leading presentation: PPT1.1
- Pilots qualitative survey : M1.1.1

The workshop at a glance

| | |
|---|---|
| 5 min | Greet participants, introduce yourself and explain why you are doing this training |
| 10 min | Introduction: the different names of explainers |
| 15 min | Activity: drawing the fantasy animal |
| 5 min per group | Each group presents its drawing to the other groups |
| 20 min | Large group discussion: the skills of explainers |
| 5 min | Presentation of other drawings (optional) |
| 5 min | Conclusions by workshop facilitator |

**SELF PORTRAIT: THE FANTASY ANIMAL - THE WORKSHOP STEP BY STEP**

Introduction: the different names of explainers

Time: 10 min
Setting: You can have the participants sit all together or sit at tables in smaller groups of 3 to 8.

What to do:
- Use the introductory PPT1.1 to begin a large group reflection on the differences and similarities of names and representations of the job in different countries. One first look shows that - under the general name of "science explainers" - there are a lot of different names that seem to indicate different jobs. But looking further you see that you can find similar names in many different countries and that these names revolve around four or five general ideas of the job. This is a good trigger to start thinking about the similarities and differences in the job of different explainers around the world.
- You can prompt a discussion on the name for science explainers used in your institution and think about the meanings of this name.

**Tips for discussion on your institutional name for "science explainer"**

- What are the skills and aims the name highlights the most?
- Do you feel it reflect the main characteristics of your practice?
- Do guides, entertainers and demonstrators do different jobs?
- Do different names reflect a different perception of the explainer's job?

Activity: drawing the fantasy animal

Time: 15 min
Setting: Participants sit at tables in small groups of 3 to 8.

What to do:
- Explain the game: the groups have 15 minutes to draw a fantasy animal that represents "the science explainer".
- Let participant do their drawings freely, without interfering, but go from one group to the other. Listen carefully to their conversations and note down their points of agreement or disagreement.

**Note on the assignment**

Note that – in the final discussion – there may be differences if participants interpret this assignment as "draw the ideal explainer" or if they think of drawing themselves and their everyday practice. You can try giving both tasks to the same group (one after the other) or with different groups, and see what happens.

Each group presents its drawing to the other groups

Time: 5 min per group
Setting: Each group to present takes turns in presenting their drawing to the other participants.

What to do:
- When they have finished drawing, each group presents its fantasy animal. Ask the presenters from each group to explain why they draw the animal as it is, what its characteristics are and why.
- Note down on the flip chart the described skills and characteristics for each drawing on the paperboard.

Large group discussion: the skills of explainers

Time: 20 min
Setting: Participants can stay where they are or re-gather in one big group.

What to do:
- This part is the most important. You can discuss the similarities between drawings and – if some characteristics are missing in some drawings – ask if the other groups agree or disagree with the skills/qualities that are not represented. As you facilitate the discussion, try to make sure that no important skills are forgotten and that all participants agree on some fundamental skills.
- The notes you have taken on the flip chart will help you sum up all the skills that were expressed by the different groups.

**Examples of questions for prompting large-group discussion**

- Are their many similarities or differences in the drawings of different groups? Does this surprise you?
- Was it difficult to reach an agreement within your group? Were there some points you were not able to agree with?
- When looking at the drawings of the other groups, did you agree and/or disagree with what the other groups put in their drawings?
- Would you add something to you drawing after looking at the other drawings?

Presentation of other drawings (optional)

Time: 5 min
Setting: As above.

What to do:
- Show drawings done by other explainers around the world (using PPT1.1 or visiting the Pilots Hub). It is always really interesting to see what other groups of science explainers have drawn. If you have several groups doing the activity this part may not be essential, but if there is only one group, drawings done by other explainers will stimulate the discussion. They will see common points between the drawings that express the specific characteristics of this profession (for ex. brain/s for ideas, tools for building scientific knowledge, mouth for talking, numerous arms for multi tasking, etc). This helps build a sense of belonging and sharing with other science explainers elsewhere in Europe.

Conclusions by workshop facilitator

Time: 5 min
Setting: As above.

What to do:
- You can end this activity by summarising the main skills that were represented through the drawings and identify those that are already acquired and those for which more training might be needed.
- This activity can lead to the next one. You can create a priority game that uses these identified skills as a starting point for sentences on the cards (see next workshop).
- You can use also PPT1.1 to make comparisons on who are science explainers in Europe, what are their skills and their training needs.
- You can write and photocopy the points that have emerged from the discussion and give them to participants after the end of the workshop. They can be distributed together with the results of the Pilots qualitative survey (M1.1.1) that was done for Pilots on the main skills of science explainers. These materials will serve as a reminder of what was discussed and of what other explainers around the world think about their profession.

**Notes**

# SELF-PORTRAIT: THE PRIORITY GAME

## EXPLAINERS REFLECT ON WHAT SHOULD BE THE CHARACTERISTICS OF A "GOOD" SCIENCE EXPLAINER.

**AUTHOR**
Paola Rodari (SISSA Medialab – Trieste, Italy)

**AIMS**
This group activity uses a discussion game (the priority game) to discuss some of the main abilities of a science explainer. A discussion game is a debate format that usually uses cards to stimulate dialogue on a certain topic. It aims to help participants shape a personal opinion about a particular issue, and to explore the differences of opinion among other participants. In a discussion game, nobody is wrong and nobody holds the truth – there are only differences of opinions. In fact, an added value of a good discussion is to discover new points of view and to understand the origins of the different opinions. Through a discussion game one can also learn facts and understand concepts, thanks to the materials provided and to the exchange of knowledge and experience among the group.

**What is a "priority game"?**

The priority game is based on a set of statements printed on different cards. Participants are asked to arrange the statements from the "most important" (highest priority) to the "less important" (lowest priority). In doing this, players will be encouraged to discuss the issue in depth. When all groups have ordered the cards, a general discussion facilitated by a mediator will help to understand the different points of view on the examined issue. The priority game format can be applied to any topic yet – in order to trigger conversation effectively – the statements on the cards must be carefully selected and expressed, making sure that all the opinions are equally acceptable, understandable and reasonable.

In this particular activity the statements on the cards (M1.2.1) proposed to promote discussion about "what should a good explainer do?" are:

- Show phenomena
- Help people express themselves
- Amuse people
- Help people experiment
- Provoke debate
- Explain concepts

These are clearly all "good" and reasonable statements, but by trying to arrange them by importance explainers are led to discuss the nature of informal learning, the possible differences among their publics, the goals of different types of activities (such as science shows, demonstrations, workshops, debates, etc.).

**YOU CAN USE THIS WORKSHOP TO**
- To promote debate among explainers on their mission in communicating with the public.
- To give an idea of what a discussion game is.
- To give a practical and simple example of an activity the explainers may use with the public based on other subjects.

**TAKE HOME IDEAS**

EXPLAINERS HAVE MANY DIFFERENT SKILLS.

EXPLAINERS DOING DIFFERENT JOBS MAY NEED TO BE ABLE TO DO DIFFERENT THINGS.

DEBATING HELPS TO UNDERSTAND A TOPIC.

**SELF PORTRAIT: THE PRIORITY GAME - BEFORE YOU START**

Timing
45 minutes

Workshop facilitators
This workshop can be conducted by one workshop facilitator, although it is useful to have a co-facilitator who can note down results, especially if you are using the projector to display the outcomes of the game.

Number of participants
Ideally the priority game can be played in groups of up to 7 people. In total you should try to have less than 35 people, in order to ensure that everyone can participate in the final discussion.

Space organisation
Participants will work in groups of up to 7, sated around tables. Make sure you have enough chairs and table space for them to work comfortably.
Projector and screen are optional but recommended for showing the results of the game. In alternative you can use a large flip chart (or any other device for hanging up cards so that all participants can see them clearly).

Materials
Projector with computer and screen (or, in alternative a flip chart or other wall space to display the results)
Available for download:
Workshop leading presentation: PPT1.2
Print a set of 7 different coloured cards for each group: M1.2.1

The workshop at a glance

| | |
|---|---|
| 5 min | Greet participants, introduce yourself and explain why you are doing this training |
| 20 min | Activity: play the priority game |
| 20 min | Large group discussion: the skills of explainers |

**SELF PORTRAIT: THE PRIORITY GAME - THE WORKSHOP STEP BY STEP**

Activity: play the priority game

Time: 20 min
Setting: Participants sit at tables in groups of up to 7.

What to do:
- Give each group the same set of 7 cards (M1.2.1). Six cards mention different actions of a good explainer and one card is blank so that participants can add their own ideas if they feel it is necessary.
- Remind participants that in the game there are no right or wrong positions, but only different opinions and points of view.
- Ask groups to discuss among themselves the relevance of each sentence.
- Ask them to try and reach an agreement on the importance of each feature and have them arrange the cards in a line from what they think has the highest priority to lowest. Which is the most important feature of a "good" explainer? Which gets the second place? And so on.
- Ask groups to keep a note if any of the members strongly disagreed with the rest of the group on the position of a card.
- As soon as they are ready, gather the cards in the defined order from all groups.

Large group discussion: the skills of explainers

Time: 20 min
Setting: See above.

What to do:
- Project the results of all groups on the screen (you can use the layout in PPT1.2) or stick the cards in parallel lines (one per each group) directly on the paperboard or on the wall.
- Compare results and try to identify recurrences and differences in the outcomes of each group.
- Ask participants to clarify their opinions and facilitate the sharing of different approaches.

**Tips for facilitating large-group discussion**

Lead the discussion so that everybody can express his/her own point of view. You, as facilitator should try and be careful not to express your opinion. You can start the discussion by pointing out the major differences. For example: group 1 thinks that "to show phenomena" is the most important mission for an explainer, but group 2 considers it as the least important feature: could someone from each group explain why they decided that?

**Notes**

# ANSWERS TO MY BOSS

## EXPLAINERS BECOME CEOS FOR TWO HOURS AND ARE ASKED TO DEAL WITH THEIR DILEMMAS AND PROBLEMS.

**AUTHOR**
Miha Kos (Ustanova Hiša eksperimentov – Ljubljana, Slovenia)
Walter Ginkels (Technopolis – Mechelen, Belgium).

**AIMS**
This workshop aims to help explainers understand the problems with which they are confronted daily in a much broader context. Explainers are also introduced to the dynamics and nature of solving problems.

**YOU CAN USE THIS WORKSHOP TO**
- Inform explainers on common problems concerning them that are bothering their bosses.
- Involve explainers in giving suggestions to their bosses.
- Reflect on the role of the explainer and its position within the institution.
- Listen, understand and accept others views.
- Have fun.

The session was inspired by the Ecsite Directors Forum held in Valencia, Spain in 2009. There the directors of various science centres and museums from across Europe met and discussed problems concerning human resources. On this occasion some of the discussed problems were collected, revised and grouped by authors into three categories (Communication, Motivation of staff and Recruitment of staff), who then developed the questions for group discussion. In this workshop participants are invited to play the role of the CEO (the Chief Executive Officer or Director) of their organisation. They have to think that they are "wearing the skin" of the CEO with the added value of having an experience as explainer.

In the explainers' everyday work one forgets about the similarities and differences of problems and dilemmas with which CEOs and explainers are confronted. By taking the other's role (even if just for the duration of the workshop), one contributes in opening new communication channels between the two groups.

**TAKE HOME IDEAS**

CEOS NEED THE HELP OF EXPLAINERS.

COMMUNICATION HELPS IN THE PROCESS OF SOLVING PROBLEMS.

IF YOU WANT TO UNDERSTAND OTHERS, LISTEN AND TRY TO GET "INTO THEIR SKIN".

**ANSWERS TO MY BOSS - BEFORE YOU START**

Timing
2 hours

Workshop facilitators
This workshop can be conducted by a single workshop facilitator although it runs much more smoothly with two. While one focuses on communication with the explainers the other distributes the questions, collects the posters, makes observations and documents the work through photos and recordings.

Number of participants
Between 10 and 40. Depending on the number of participants the workshop facilitator decides on the number of participants per group (3 to 6).

Space organisation
Participants will work in groups of 3 to 6. Each group sits around a table that has to be large enough to fit a poster. Make sure you have enough chairs and table space for them to work comfortably together.
For the discussion you might need a flip chart and/or LCD projector and computer.
The workshop facilitator should prepare the questions without being seen by participants.

Materials
Flip chart and large A2-sized sheets of paper
Large tip felt-pens
Projector with computer and screen (optional but recommended)
Available for download:
Workshop leading presentation: PPT1.2
One set of question cards divided in several themes: M1.3.1

The workshop at a glance

| | |
|---|---|
| 5 min | Greet participants and short introduction |
| 5 min | Metamorphosis from Explainer into CEO |
| 25 min | Activity: first set of posters (recruitment of explainers) |
| 25 min | Activity: second set of posters (communication) |
| 25 min | Activity: third set of posters (motivation of explainers) |
| 35 min | Large group discussion on material produced by participants |

**Notes**

**ANSWERS TO MY BOSS - THE WORKSHOP STEP BY STEP**

Greet participants and short introduction

Time: 5 min
Setting: Split participants into groups of 3 to 6. One group per table.

What to do:
Introduce the workshop by explaining how the activity was first devised and why.

Metamorphosis from Explainer into CEO

Time: 5 min
Setting: See above.

What to do:
- As a teaser you can show a magic trick (such as a card trick or similar) in order to explain that you can do magic.
- Explain that now the spell will be performed on participants. They have to close their eyes and listen to you telling them in a hypnotic voice that they are going to be transformed into their CEO. Count slowly from 1 to 10 and then greet all the participants again as if they were CEOs.
- Tell participants that they – as CEOs – are kindly invited to take part in a workshop to help other CEOs in discussing some questions concerning the community and explainers working in "our" centre.

Activity: first set of posters (recruitment of explainers)

Time: 25 minutes
Setting: Groups discuss and produce posters at their table.

What to do:
Stick a question card on the top of each blank poster on the table (one poster for each group).
Ask groups to discuss for 25 minutes and come up with the three top suggestions/solutions to the problem.
At the end of the activity collect all the posters.

Activity: second set of posters (communication)

Time: 25 minutes
Setting: See above.

What to do:
- Stick a question card on the top of each blank poster on the table (one poster for each group).
- Ask groups to discuss for 25 minutes and come up with the three top suggestions/solutions to the problem.
- At the end of the activity collect all the posters.

Activity: third set of posters (motivation of explainers)

Time: 25 minutes
Setting: See above.

What to do:
- Stick a question card on the top of each blank poster on the table (one poster for each group).
- Ask groups to discuss for 25 minutes and come up with the three top suggestions/solutions to the problem.
- At the end of the activity collect all the posters.

Large group discussion on material produced by participants

Time: 35 minutes
Setting: Posters are hung around the room so that all groups can see them clearly.

What to do:
- Invite participants to explain to the other groups the ideas presented on their posters.
- You can also ask participants to compose their own questions from the point of view of the boss so that you can use these questions in future training sessions and/or continue the discussion on a broader level on the Pilots Hub.
- Participants are then transformed back from CEOs into explainers again.

# Contributions and acknowledgments

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Miha Kos was born in 1962 in Slovenia. He defended his PhD thesis on MRI in the Earth's magnetic field in 1992. He worked as assistant professor in the Physics department of the University of Ljubljana, Slovenia, and as postdoc in Albuquerque, USA. After returning to Slovenia it was his idea to establish the first "hands-on" science centre in Slovenia. The centre was established in 1996 and the first permanent premises were gained in 2000. Since 1996 he is the director of the centre. He is also author of several science popularisation TV shows, four science on stage shows and several hands-on exhibits. For 14 years, he is also the chief editor and co-owner of the children's magazine for curious children.

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