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MANY MORE WAYS TO GO

Various Strategies to Make People Aware of Space Research

Not only is space infinite, the topic itself also offers an immense amount of information, approaches and questions to be asked. Our research has shown that the range of associations with space is broad. According to our interviewees, the spectrum spans from Benjamin Blümchen, who explains the moon as a ball of cheese, to Felix Baumgärtner, the Austrian who jumped from lower earth orbit, through to space research being the gateway to the future and new energy resources. For all these fields of interest, there are various ways to communicate them. For us, as the interdisciplinary team of BRENNEREI, it is our asset to find innovative methods to communicate and interact in different ways and to visualize this variety of possibilities.

We are convinced that whatever the strategy may look like, the main goal is always to make people aware of space research or space science in the end. It is about getting the idea across that space affects each and every one of us and to highlight that we all benefit from this research in the long run. While *Humanities in Space* focuses on a broad subject area and *Public Space* on a methodical approach, this collection is meant to open new fields of communication strategies for DLR. As the other ideas have already shown, information doesn't always have to be provided in a direct and absolute way. Another strategy is also to focus on curiosity because the mission is to get people interested enough to do research on their own. An easy task to accomplish in times where information is available on the go, thanks to smartphones.

The following ideas show different communication strategies; the focus varies from attracting people's attention with a low level of information to actually educating them about special topics. However, what they all have in common is that they are meant to start a conversation about space. The ideas in this booklet can be grouped in three categories.

Product Design: Make an Appearance

NASA and Kennedy Space Centre offer a variety of merchandise products. Some of them even have a collector's value, others are souvenirs or just funny gadgets. Browsing through their offerings you find an inflatable space shuttle, T-shirts, stuffed animals and many more things.

The DLR also has an online shop to promote merchandise products, but this page is graphically outdated and has a very complicated user interface. On top of that, it is not well-known. Due to these circumstances, the user misses the very important notice that the merchandise products are not meant to make a profit. The income of the shop is being donated to social projects. The sales revenue of the online and real shop is used for the *Sozialwerk beim DLR e.V.*, a non-profit association to help people in need. Merchandise with a social benefit!

Unfortunately, this mission is not widely known and the merchandise products don't have the same value as NASA products. Merchandise is usually a tool for sales promotion¹, but it can also help to create awareness and make the DLR more visible. Products can be more than a pen, a cup or a cappuccino stencil – they can be something completely different and they can even be set up as part of a co-operation project.

The *Space Fruit Basket* can serve as an example how such a co-operation could be set up. It is a merchandise product that aims to educate people, not just promote a product or brand. The same applies to the *Space Agenda*, which simply groups together the important mission dates of the year. The *Universe in a Star Globe* is a visual fun gadget with the purpose of being a reminder to the owner.

Guerilla Education: Inform and Educate in Unconventional Ways

Guerilla marketing is already a thing. It uses guerilla elements such as unconventional tactics and elements of surprise to achieve a high level of attention. Using a low-cost strategy, it aims to get a maximum of results.

“It relies heavily on unconventional marketing strategy, high energy and imagination. Guerilla Marketing is about taking the consumer by surprise, making an indelible impression and creating copious amounts of social buzz. Guerilla Marketing is said to make a far more valuable impression with consumers in comparison to more traditional forms of advertising and marketing. This is due to the fact that most guerrilla marketing campaigns aim to strike the consumer at a more personal and memorable level.”²

Imagination, making an impression and reaching people on a personal level, these basic keywords of Guerilla Marketing are not difficult to achieve with a topic as emotional as space. But we want to bring it to the next level: let’s think of Guerilla Education! People can learn on the go, while pointing out the obvious or making it fun to look at or interactive.

The *Space Inside Sticker* is an example for such a campaign. Let’s put a label on products which are based on space research. It is important to show that not just high technology devices profit from space research, but also products that everybody uses on a regular basis. It can also become an interactive activity, where pupils have to stick the label on the products by themselves. It’s fun and they learn something by doing it. Moreover, an exhibition can shift from merely informing to a more artistic and playful way of displaying. *Things you can’t do in Space* and *The World without Space Exploration* are examples of where information about everyday life in space and space research are presented in a different way. Already the name *Fun Fact Collections* shows that information can be humorous. It is a tool that we have tested ourselves:

the more funny things you tell people about space the more they become interested and the more they want to know. It’s sometimes surprisingly easy how a conversation can shift from “How do you wash your hair in space?” to discussing water treatment facilities.

Interactive Infotainment: Surprise and Engage People in Activities

Some of the ideas proposed here may at first seem a bit childish or irrelevant for space research, but they are thought on one hand to be amusing and on the other to evoke emotions. The more strange and unusual something is, the more people talk about it. In June 2015, a Porn Agency set up a crowdfunding campaign to make the first porn movie in space. This means they tried to get money through small investments from private persons. It was worldwide in the news, showing how it is possible to attract people’s attention. It also encourages you to think about what you are doing, because everybody had the possibility to act and to support the project even with only a small amount of money. The project wasn’t realized by the crowdfunding society but it generated a lot of traffic and interest. The fact that it didn’t get enough money shows that many people who checked out the project made a conscious decision not to support the project for various reasons.

These examples show that the moment you leave the joke behind, you wonder and maybe start your own research. With the idea of *The Ultimate Question* or *Cat and Buttered Bread Experiment* we also want people to be amused first and then start asking questions. The second goal is to encourage people to do something on their own, therefore it is important to have a low barrier that enables people to get active – in this case they can bet or vote. The same applies to the *Cooking Class for Space Food* and *Mission Patch Design* that might seem strange at first, but nevertheless you learn some real facts about space in an interactive way. Furthermore, as a participant you generate an outcome by yourself. The *DLR Incubation Centre (DIC)* is meant to involve business people in the New Space economy who usually don’t deal with this topic and elaborate on more specific outcomes for space research.

1 Das Wirtschaftslexikon (2015): Merchandising.
<http://www.daswirtschaftslexikon.com/d/merchandising/merchandising.htm>, 31.08.2015

2 CREATIVE GUERRILLA MARKETING (2015): What is Guerrilla Marketing
<http://www.creativeguerrillamarketing.com/what-is-guerrilla-marketing/>, 31.08.2015

Planet Fruit Basket

A healthy way to learn about the dimensions of the planets



The idea behind the space kit in form of a *Planet Fruit Basket* is to inform people about the realistic dimensions of the planets in relation to one another. This should happen in a funny, playful way. For this reason, the planets are symbolized by fruits.

The *Planet Fruit Basket* consists of a selection of different fruits in a variety of sizes which resemble the planets of our solar system. There are labels attached to each fruit stating the planet's name and its basic characteristics. There could also be a map which shows the relative distance of the planets from one another.

Imagine your child approaches you with questions like: "How big is the sun? How big is the earth? How far is Pluto from Mars?" If you had something like the fruit basket, you could easily explain to your child how small the earth is compared to the sun, for example.

From our research, we know that people don't care too much about space in their everyday life. This is also due to the fact that space is hard to imagine. With the space kit, the DLR has the chance to fill this gap partly by informing and educating people in a funny and uncommon way and even by taking care of healthy nutrition.

For its implementation, the DLR could collaborate with big supermarket chains like REWE or Edeka to offer the *Planet Fruit Baskets* as a special offer, including a nice basket. This could even be more environmentally friendly, as shoppers could take the basket instead of plastic bags to the supermarket the next time they go shopping.

Alternatives

If there is no opportunity for collaboration with supermarkets, the DLR could also set up a start-up company to develop the *Planet Fruit Basket* or an other space kit and distribute it via an online shop.

Topic/Content

- Make dimensions of planets tangible

Reference

Lagrange Point Book

Questionnaires

- *Worüber würden Sie gerne mehr wissen?* p. 48

Interviews

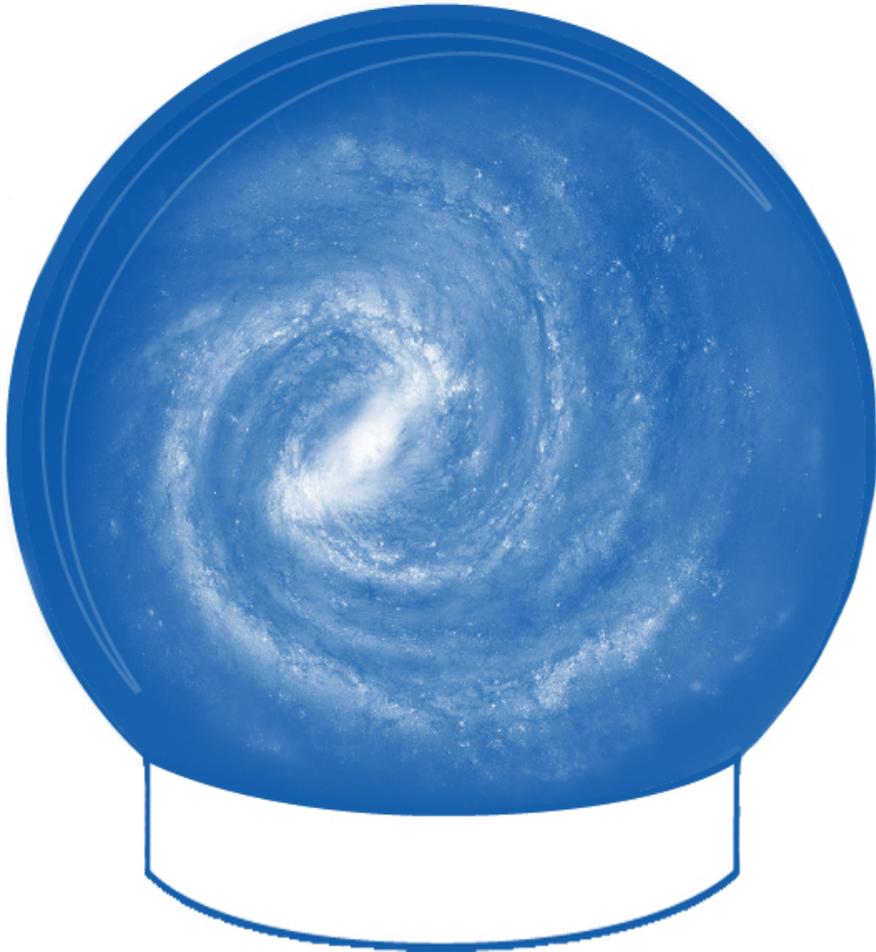
- *Faszination* p. 67

Considerations

- In this case, Jupiter as the Water Melon is the biggest and Mercury the smallest as a single grain of pomegranate, but the sizes could also be varied in other ways
- The sun is much too big to fit in any basket

Universe in a Star Globe

Fantastic DLR merchandise to transport
the fascination of space



The unimaginably huge universe contained in a tiny glass globe. This small piece of merchandise represents the work of the DLR and all space efforts worldwide: It embraces all we know and represents all the things we still want to find out at the same time.

A star globe that reinterprets the idea of the classic snow globe as the all-time classic souvenir item with the scientific star constellation globe of astronomy. It can sit nicely on the desk or find a good place on the window sill to remind the owner of the irreplaceable work carried out for a good cause and the benefit of all humankind.

The globe can either work like a classic snow globe with the snow replaced by stars that swirl around when you shake it. It could also work with a light projection that illuminates the glass from a socket. Paired with nice light effects, it can really be an eye catcher. Of course, the content can also be varied, either filled with the solar system, the universe, a conglomerate of galaxies or it could be linked to actual DLR missions, e.g. the comet Churimov Gerasimenko that *Philae* of the *Rosetta* Mission landed on.

Of course, this is just one example of fantastic and mystical merchandise that portrays the message of fascination for space research in a different way. The important aspect is that the fascination of DLR's everyday efforts and scientific progress is transported to potential partners and a broader public.

However, apart from the content, it is important that the materials used to produce the merchandise don't look cheap because this image would be directly projected onto the agency. On the other hand, it should not look too esoteric to keep up the professional image. The money earned by selling the merchandise can be donated to *Sozialwerk beim DLR e.V.*

Topic/Content

- A little star globe that carries the universe inside
- Provide unusual DLR merchandise

Reference

Lagrange Point Book

Questionnaires

- *Welche realen und fiktiven Raumfahrt-einrichtungen kennen Sie?* p. 46

Interviews

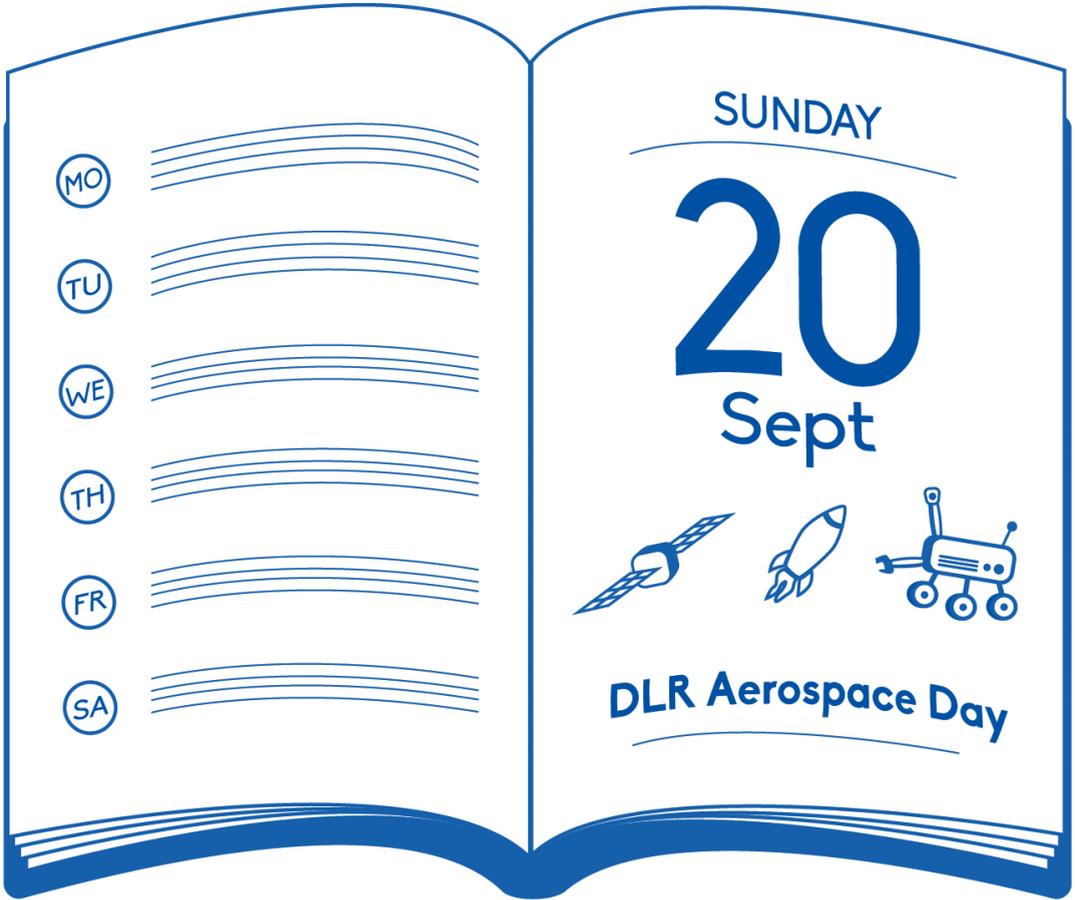
- *Faszination* p. 67

Considerations

- Merchandise always has a better impact, it is advertising passed from its owners to their friends, colleagues, families and everyone who sees the item

Space Agenda

Plan your future and learn about what happened in the past in relation to space exploration



Do you want to know what happened on each day of the year in space history? Are you interested in the important days of upcoming missions and projects that will someday be seen as the milestones of human Spaceflight? The *Space Agenda* will remind you of the first moon landing, the launching of Hubble to space, birthdays of astronauts and many other historical and future events regarding space.

Many things could be included in the agenda based on each date of the year:

- Human achievements regarding space
- Technologies that were invented during space research
- List of missions and what they were or will be about
- The successes and failures of space exploration
- Space pictures and art

It can be a printed product that can be used by DLR to reach more people and inspire them about all the attempts to explore space that have been carried out during the last century. Or it can be a website that gathers all the information and fascinating dates and facts in one place.

The *Space Agenda* can be developed together with the web community on the crowd-sourced calendar website www.forekast.com.

Topic/Content

- Overview of important space dates

Reference

Lagrange Point Book

Questionnaires

- *Worüber würden Sie gerne mehr wissen?* p. 48

Interviews

- *Kritik und Rechtfertigung* p. 74
- *Aktuelles* p. 81

Considerations

- It would be important to include all the important dates of the whole space community, not just national agencies but also companies of the New Space economy in order to cover all activities

Alternatives

It can also be an app that combines a calendar function with space content.

Space Inside Sticker

Point out the obvious by highlighting products based on inventions from space technology



Many consumers want to know more than just the name of the product they buy. To quickly see the background of a product, it is helpful to brand it with a recognizable badge or sticker just like the organic, fairtrade or quality logos. With the *Space Inside Sticker* the customer can immediately see that a product is the result of space research and will relate to it differently.

Currently, many technological and modern products involve some kind of material or fundamental research conducted by the DLR. However, all the scientific effort and tax money that goes into enhancing and perfecting space-related technologies or products is mostly invisible to the normal shopper.

If all the products that are based on space research and technology of some kind were transparently and visibly branded as such with the *Space Inside Sticker*, people would become much more aware of the benefit and improvement to their own life. A carpenter using a portable electric drill, a senior citizen using varifocals, or people with velcro on their shoes would learn to appreciate the fact that these things actually involved space research. Our research shows that people like to know more about these things. They asked for more and more examples. They were surprised by the fact that they actually use space technology in their everyday life. Making this information visible would already raise the acceptance and approval of costly space programs in general, because people can see a positive impact on their life and a definite use of taxpayers' money.

Taxpayers have a right to know how their money is spent. That's why government institutions must communicate transparently which programs are funded and how. Raising awareness of space research through a well-placed sticker on products and consumer goods is a simple and easy way to make people aware that they are positively affected by the work of DLR.

The idea is simple: a sticker or printed badge on the package that quickly and clearly shows that a product has involved space research. It might be the materials, technological or engineered solutions that went into the final product, this doesn't matter as long as the main idea came from a space related project.

The message is clear: we need space research to get to this point of advancement, to improve our way of life, every day.

Alternative

The sticker will be put on products for a limited period of time. This could happen one week before and after *Tag der Deutschen Luft- und Raumfahrt*. People can order the stickers and place them on products themselves.

Topic/Content

- Brand space products with a sticker
- Make space research visible in daily life
- Make people aware that they are affected by space research
- Show people the benefit of space at their decision point to buy a product

Reference

Lagrange Point Book

Questionnaires

- *Haben Sie das Gefühl, im Alltag von Weltraumtechnologien beeinflusst zu sein?* p. 44

Interviews

- *Aktuelles* p. 81

Considerations

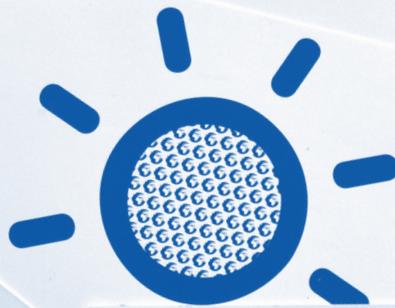
- Cooperation with the product manufacturers
- To be more eye-catching, the sticker could also be shinier, glittery
- Branding non-typical products like velcro or solar cells will be much more surprising
- The sticker could be combined with a smartphone app – just scan the code and you can get more information about the space technology used on your phone
- Who is responsible for putting the stickers on?

Space Fun Facts Collection

Because humour is a great way to approach serious topics

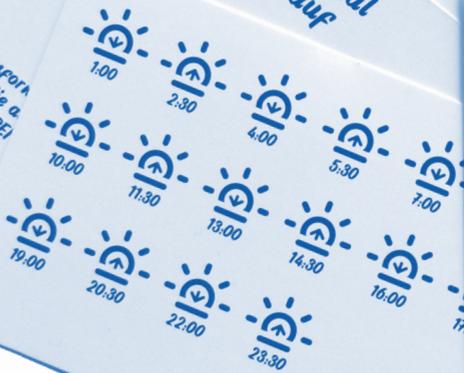


Die Erde würde eine Million mal in die Sonne passen.

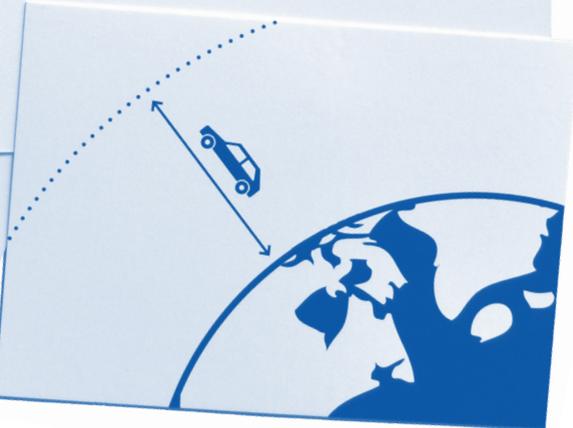


Auf der ISS geht 16 mal am Tag die Sonne auf und unter.

Mehr Infos findet Sie a BRENNEREI



Wenn man mit dem Auto senkrecht nach oben fahren könnte, würde man bei einer Geschwindigkeit von 100 km/h in weniger als einer Stunde im Weltall sein.



Because space is such a different environment compared to the one we know and are used to, we ask ourselves and the few people that have actually experienced it what it is like. We are anxious to find out about space as a habitat, a place to be and to stay for a longer period of time. All of the questions concerning the space topic are very existential in themselves, so there is a huge audience and interest for this information. How do you sleep, eat, go to the toilet or have sex in micro gravity? The answers can be collected in a book.

There are very popular examples of fun-fact collections. The *Stern NEON* magazine has a category called *Unnützes Wissen*. Once in a while, *Stern* publishes also a book with the collection of facts together with *HEYE* Verlag. This is a possible experienced cooperation partner to help create the *Space Fun Facts Collection*. Facts you once read and you never forget, because they are somehow curious and weird or interesting in other ways.

During our research we were amazed by all the great information we came across through the questions people have: Does it smell in space? What does astronaut food taste like? Are there nations in space? What do astronauts do with their time? How long does it take to go to Mars and so on.

Collecting knowledge that is there just because you deal with it every day can be very entertaining to other people. Basically, DLR could ask their employees to state a favourite fun fact about their field of work and research. Once collected, one could vote for the top 200 fun facts in an online survey to assure the quality and noteworthiness of the information. It could be a printed book or a series of weekly fun facts in the media, which should always be paired with “brought to you by DLR.”

Topic/Content

- Fun facts and information about space

Reference

Lagrange Point Book

Questionnaires

- *Worüber würden Sie gerne mehr wissen?* p. 48

Interviews

- *Geisteswissenschaften und Kultur* p. 84
- *Aktuelles* p. 81

Considerations

- The design and look of the collection is totally open
- It could be fun to state the source of the information
- It would also be interesting to find out who discovered this information

Things You Can't Do in Space

Because there is a lot to be considered while doing everyday things in microgravity.



Imagine a collection or exhibition of all the things you can't do in space. This can be very entertaining because many things have to be overthought if you want to do them in microgravity.

For the first missions, all effort in space research went into ideas to make basic actions here on earth work in space. There is a lot to be considered: first of all, things don't fall down, they just float. Then there is no friction or slowing down of things once they accelerate, so movements of the body or interaction with the interior must be rethought. Fluids don't spill but form droplet balls according to their depth. Muscles have to be trained constantly, otherwise they degenerate very quickly because of the lower force on the body. The senses of smell and taste decrease to almost zero. These challenging phenomena are just a few basic examples that make everyday actions a challenge when in space.

The exhibition could provide a lot of interaction and information regarding specific life situations. While stating everything that you can't do, you also say what is possible; what are the advantages and effects of movement in microgravity. The comparison of both encourages the spectators to ask new questions themselves.

In 70 years of space research history there must be a lot of entertaining and interesting stories to tell about the development of how things are done today. Also there are always new challenges regarding new missions, e.g. for a human space flight to Mars, the biggest task will be to maintain a safe and sound journey during years of travel. This information and the insight into the scientific progress regarding this matter are worth sharing.

Topic/Content

- Exhibition of impossible everyday actions in space

Reference

Lagrange Point Book

Questionnaires

- *Interessieren Sie sich für das Thema Weltraum?* p. 24

Interviews

- *Aktuelles* p. 81
- *Faszination* p. 67

Considerations

- Adequate methods have to be worked out to show a space environment on earth
- Outdated space equipment could be used in the exhibition

The World Without Space Exploration

An exhibition that visualizes the huge benefit of space research



Have you ever wondered what the world would be like without space research? Have you started a serious discussion about the benefits of exploring outer space? Many people argue about space exploration and consider it a waste of tax money. Confronting them with a comparison of the disadvantages, advantages, return on investment and advancement of society is crucial. The solution is an exhibition which allows people recognize the great importance of space research. Just by taking a step back and removing all the improvement of our way of life through space technologies one can change their minds.

This exhibition could be divided into two worlds: on the one hand is our world as we know it with space technologies (e.g. satellites, earth observation, spin-off technologies in many fields, job creation, art inspiration) and on the other is the exact same exhibition in a same sized room but without all the items that required space research and technologies in order to come into existence. This comparison will help the visitor realize the progress and the great impact that space research has had on society and the way we do things, communicate and manage our lives.

One part of the exhibition would be totally analogue, without any of the materials or media that have been invented, improved or perfected by the work of space agencies and their partners. The other half would contain all the latest technology and presentation methods we know today and show the missions and projects being conducted at this very moment and in near future.

Topic/Content

- Exhibition about the benefits of space research
- Inform critics of the great improvement to everyday life

Reference

Lagrange Point Book

Questionnaires

- *Kennen Sie Welt-raumtechnologien, die auf der Erde angewendet werden?* p. 44

Interviews

- *Kritik und Rechtfertigung* p. 74
- *Aktuelles* p. 81
- *Faszination* p. 67

Considerations

- *ALL.TÄGLICH!* already shows the wide range of earth-related applications, it would be important to focus more on the invisible and unknown aspects and contributions of space research

The Ultimate Question

Learn about space by voting on the origin of life

The image shows a browser window with the URL ultimategoal.com. The main content is a poll titled "What was first?". On the left is a simple line drawing of a chicken, with the text "Chicken, of course!" below it. On the right is a simple line drawing of an egg, with the text "Egg, you silly!" below it. A vertical dashed line separates the two options. At the bottom of the page, there is a logo for "Mission Philae: looking for the origin of life" and the DLR logo. The footer contains several small links: "Wissenschaftsprogramme", "Unternehmen", "Über Google", "Datenschutzbestimmung", "Nutzungsbedingungen", and "Einstellungen".

The *Ultimate Question* is the question about life: Where are we from and what has been there in the beginning. 42 is the answer to the Ultimate Question of Life, the Universe, and Everything – at least it is if you believe Douglas Adam, the author of *The Hitchhiker's Guide to the Galaxy*. It has become a short, but popular quote and reference. A joke that evokes curiosity. But what most people don't know is that DLR Missions and other space research projects try to find a real answer to this question. To make this fact and the mission results more popular, the public will take part in the process of finding the answer to the question by voting on the final result.

It can be narrowed down to the easiest question there is: Which was first, the chicken or the egg? On a website, people have the possibility to vote or even bet one euro on the outcome. Maybe in a few years they will make a profit due to their bet for *chicken* on the *Ultimate Question*. If the answer can't be given in our life time, the wager can be passed on to the following generations. The question will be answered by scientists working on the *Philae* project. There will supposedly be no direct answer to the question, but the email addresses can be used to send out newsletters about the ongoing research. This mail must be short, informative but also fun to read.

This project idea isn't meant to be serious in the first place. It is a humorous and funny way of informing people about DLR projects. The Internet is full of weird things and it has shown that people buy the most useless machine in the world or help crowdfunding a potato salad. So there will also be people that are willing to invest one euro in the result of the *Ultimate Question*. The homepage has a simple interface where you first see the question and then the answer possibilities (chicken or egg), while on the following pages you can learn more about the real mysteries of life and the attempts of DLR to find an answer.

Alternatives

Betting is part of gambling, so if the legal framework situation is too complicated, it can also just remain as a voting platform.

A digital pinwall to collect not the answer, but the question about life. In the *Hitchhiker's Guide to the Galaxy*, the protagonists weren't happy with this answer 42 and the Computer answered: "You didn't ask the right question." So the public can write their questions and the crowd can vote on them.

Topic/Content

- Space science and the origin of life
- Transporting information about previous missions or future missions in a funny and interactive way

Reference

Lagrange Point Book

Questionnaires

- *Wörterbücher würden Sie gerne mehr wissen?* p. 48

Interviews

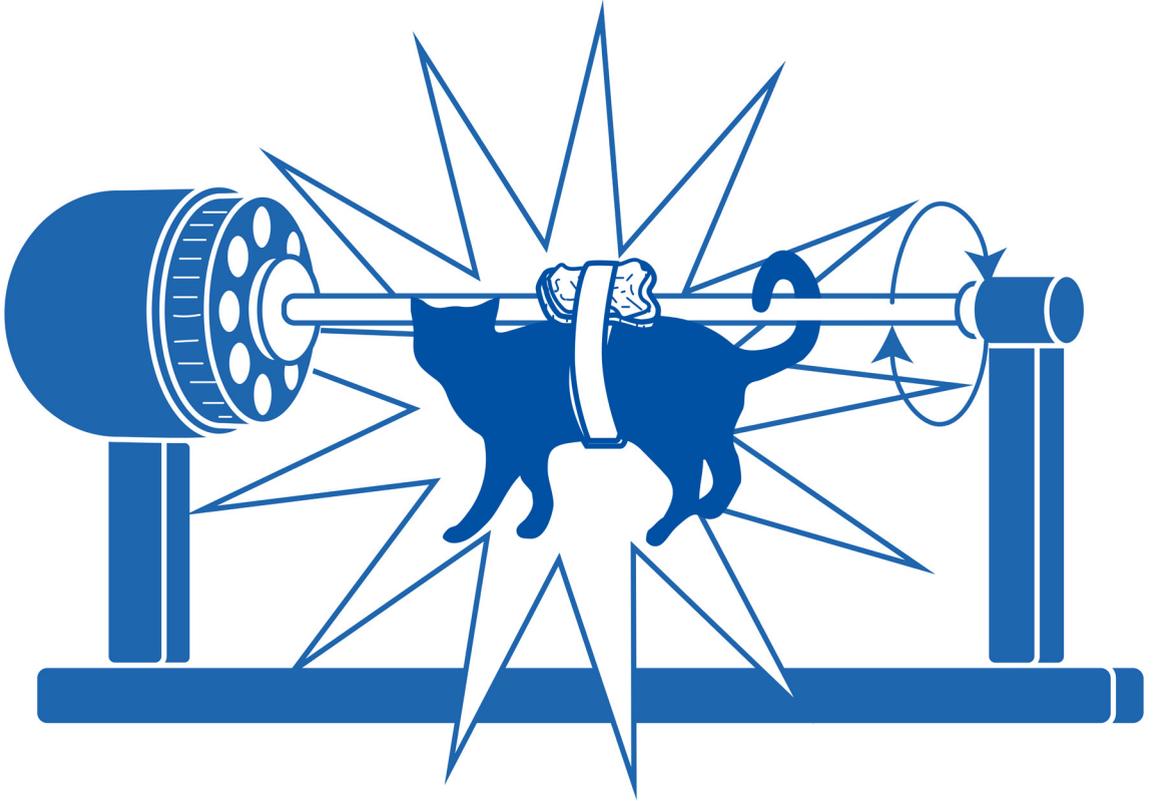
- *Geisteswissenschaften und Kultur* p. 84
- *Kritik und*
- *Rechtfertigung* p. 74
- *Faszination* p. 67

Considerations

- The legal framework on gambling must be checked
- Can a wager be passed on to following generations

Cat and Buttered Bread Experiment

A marketing coup with absurd theories to attract attention to the scientific approach



A cat always lands on its feet. A buttered slice of bread always falls on the buttered side. Derived from this assumption there is a very popular theory on the internet: If you strap the buttered bread onto the back of a cat and let it fall, it will start to rotate and turn forever. If it is then attached to a generator, this set up can produce endless energy because of its rotation.

DLR could jump on that train to catch the crowd's attention for scientific experiments, e.g. regarding the conservation of energy. By pretending to have found the ultimate renewable energy source – for example at the ZARM drop tower – a big public discussion would be started in the media, which the DLR could benefit from in a very special way if the campaign is done right.

A lot of strong emotions will be involved in the discussion: interest, protest because of animal protection, anger, doubt, laughter, satire, etc. It could be just a fake announcement like an April fool's joke on the news. Of course DLR would never harm cats or buttered bread but by proving a sense of humour, they can initiate a discussion about all aspects of the scientific spectrum which refer to their physical experiments in space research.

The campaign could also be conducted as a kind of mockumentary: TV shows could invite DLR space researchers to interview them about this uncommon experiment. There could be conferences or school projects on the cat experiment as a starting point. It is a humoristic approach to the whole science and physics topic.

In this way, a lot of information about DLR's work and its benefits could be spread to a broad public.

Topic/Content

- Shock the public with an uncommon experiment
- Let people make up their mind about physics and their own opinion

Reference

Lagrange Point Book

Questionnaires

- *Worüber würden Sie gerne mehr wissen?* p. 48
- *Was muss noch erforscht werden?* p. 48

Interviews

- *Geisteswissenschaften und Kultur* p. 84
- *Aktuelles* p. 81
- *Faszination* p. 67

Considerations

- Has to be planned well
- Figure out how to make it clear to the public that it is just a joke and how to provide other relevant information

Cooking Class for Space Food

A professional cook teaches you to cook space food



Cooking classes are becoming more and more popular and a lot of hobby cooks are searching for new input and new challenges, e.g. molecular cuisine. When it comes to the everyday life of astronauts, most people know that having a nice dinner looks quite different in space than on earth. In a *Space Food Cooking Class*, you get the opportunity to learn more about the challenges of this kind of food, be inspired for your everyday cooking and attend interesting talks with people you don't know yet about this interesting topic and the big questions that come with it.

Imagine you and your best friend are going to the cooking class on a Friday evening: You will arrive in the training kitchen and have a surprising welcome drink out of a package with a straw. Afterwards, the professional cook will introduce you and the other participants to the special guest of the evening who works in the space industry and gives you an introduction to the topic. This person will stay all night and answer your questions about space. Meanwhile you learn how to cook space food and how to pack it and you will suddenly remember the lunch boxes you give your children for school every morning. At the end of the evening, you will have an unusual dinner with new people and talk about the philosophical questions surrounding Spaceflight. When the evening is over, you will receive a nice recipe book to help you prepare your next space party on your roof terrace, where you can show off and entertain with your new space knowledge.

For these kind of cooking classes, DLR could cooperate with existing providers. But it is also possible to cooperate with start-ups like *cookasa* (www.cookasa.com) or innovation workshops like *BRENNEREI next generation lab*. To encourage professional cooks, DLR could offer them a visit to departments that are researching nutrition. This could be paid for by part of the price the participants have to pay for the class. By using the relaxed atmosphere and the interesting topic of space food, it is possible to provide people with a lot of important facts about DLR's work and the benefits on earth. People who are attending these classes are often perfect multipliers because they often have a lot of guests and enjoy sophisticated conversations during dinner parties. They will share their new knowledge with their friends in this way.

Alternatives

A children's special on lunch boxes with easy explanations and a lot of possibilities for them to do something on their own.

Use this format in schools as a part of an interdisciplinary project week together with chemistry and physics teachers.

Topic/Content

- Show the inspiring and challenging aspects of astronaut food
- Let the people talk and think about space

Reference

Lagrange Point Book

Questionnaires

- *Was glauben Sie, wie sieht der Arbeitsalltag von Astronauten aus?* p. 34

Interviews

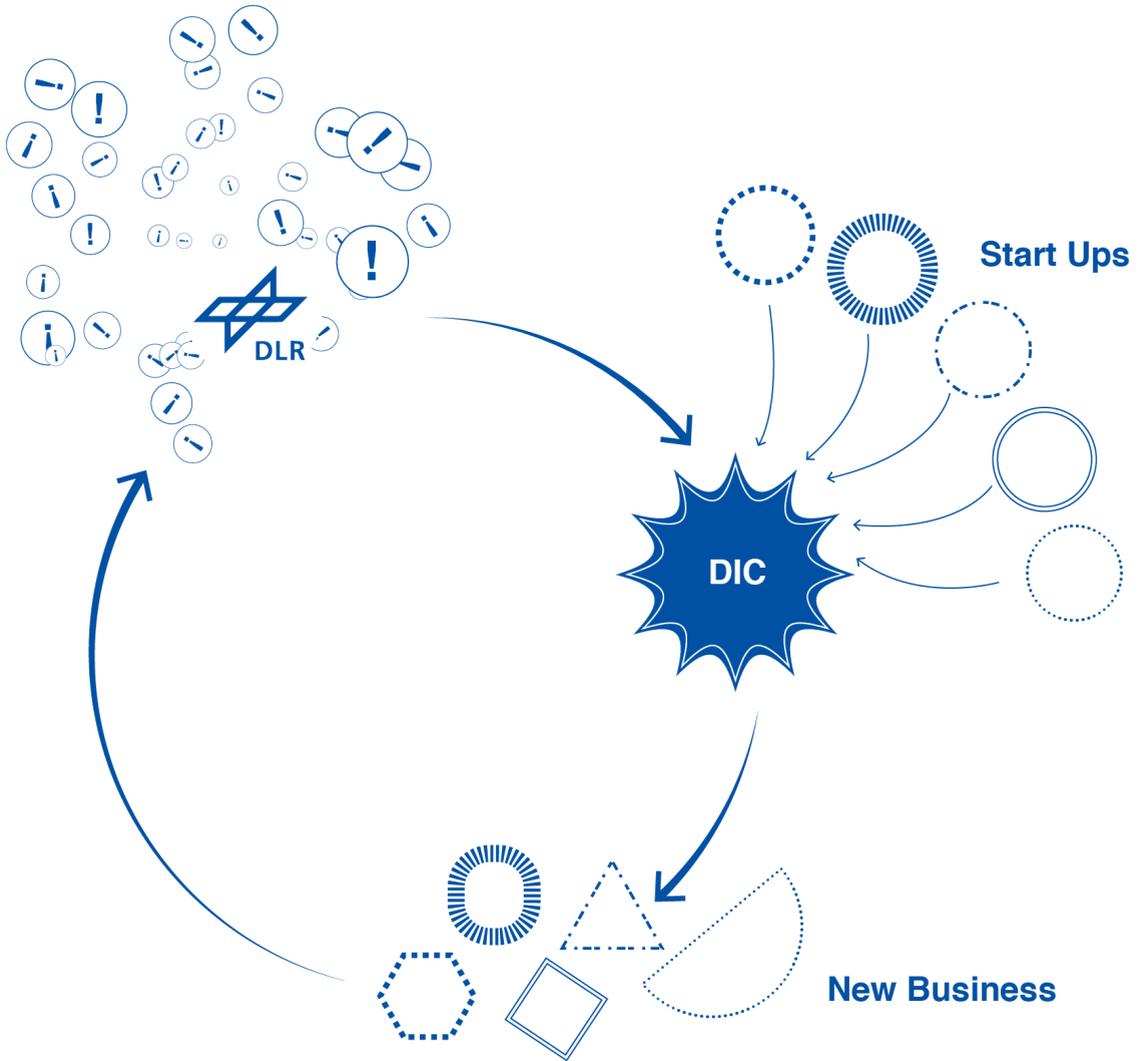
- *Aktuelles* p. 81
- *Faszination* p. 67

Considerations

- What kind of space food would be suitable for a cooking class on earth?
- What needs to be changed in the recipe?
- How can you inform professional cooks in an easy way?
- Is it possible to use the same packaging in a cooking class as you do in space?

DLR Incubation Centre (DIC)

A centre for start-ups and spin-off technologies



The idea is to support start-ups; in return DLR will have an equity in the business using the option pool method. Forming partnerships with entrepreneurial companies will result in DLR's findings being transferred to benefit society. The challenges that DLR faces during its missions and the problem-solving techniques used can also provide solutions for challenges in many fields and create new industries. Opening up the door to young people to turn these findings into useful services and products can generate a huge impact on society.

ESA has a similar project, they spent 1% of their balance to support start-up ideas related to space and the results of their initiative are worth noting. The ESA's start-up program brings real benefits to enhance the life and well-being of citizens, including health products, improved waste management, water recovery and others.

The idea of *DLR's Business Incubation Centre* should also support manufacturers and current businesses to create new products and improve existing products and services. This could strengthen German industry by creating new business opportunities.

The implementation could be through adapting strategy. The strategy can start with planning and networking with incubators around the world. Then, deploying *DLR Space Incubation Centres* around Germany. Following that, idea creation labs can be established to further support talent and challenging entrepreneurial ideas. Having a strategy to take further steps toward transforming DLR's technologies into start-up companies would be essential in order to realise maximum benefit.

Some people do not believe in the benefit of space exploration. This could be changed by providing a centre to turn valuable space knowledge into solutions that can save lives, create jobs and launch new companies. This will help DLR justify their activities to the public and get their support. Also, the return on investment (ROI) could be used to fund DLR's future missions. ROI could be used as an argument to those who do not believe in the benefit of space. All start-ups will have to agree to declare that their technologies were inspired by DLR research outcomes. In this way, DLR will attract more attention from the public and decision-makers.

Topic/Content

- To turn research outcomes into an economic powerhouse with benefit to society

Reference

Lagrange Point Book

Questionnaires

- *Welche Aspekte sind Ihnen wichtig in der Raumfahrt?* p. 43

Interviews

- *Geisteswissenschaften und Kultur* p. 84
- *Aktuelles* p. 81

Considerations

- Possible co-operation partners can be found throughout the start-up community
- Remember: the ideas of today are the reality of tomorrow

Mission Patch Design

An app to design your own Mission Patch



For every space flight, a mission patch is designed that represents not only its purpose, but also the members of the crew. It is also used for team building measures. Various elements describe the overall mission and also its particularities. By studying the mission patches, you learn a lot about the underlying symbolism and of course about the actual mission goals. Even if not everybody can go to space, each of us can have a mission, maybe just for a day or for a longer time period. By using the symbolism of space flight mission patches, you can create your own mission patch. The DLR could offer a homepage or an app that helps you design your mission patch and at the end you can buy an embroidered one. Be a team, create a patch together and wear it!

A mission patch is represented by its shape, font, images and words. It is often the first thing that a crew does when they start working together. It is their symbol. If you want to design a mission patch, you really need to think about the purpose of your upcoming mission. You have to consider what is important to you and to the others and how to represent this. It is in a way a psychological and artistic approach to a task.

The idea is that the DLR offers the possibility to create a personal mission patch. By creating your own patch you can even learn about past and ongoing missions and explain the meaning of space flight. For example there is a patch that has the shape of a hexagon, it thereby refers to the cupola in the ISS – that information can be easily added when you choose the shape of your mission patch as a first step. A triangle patch was used to show the three parts of the framework of a mission. In a next step, a variety of pre-set elements are provided that you can choose from to create your mission patch. And again, those elements can refer to already used elements from real missions and their meaning can be explained. At the end you have a personal mission patch with a great design which you can even get embroidered and carry on your next adventure. It can also be your secret patch for job interviews or a great gift for the next wedding.

There is a website by Disney where you can design your mission patch with predefined elements, however the overall design, the elements provided and the overall results are very limited. Other homepages help you to easily design your own logo (www.graphicsprings.com). The user interface is quite easy and guides you through the design process step by step. The basics of the *Mission Patch Design* homepage could be a homepage like this. A cooperation with a logo embroidery company is possible in order to print the result at the end.

Alternatives

Instead of creating a homepage with the goal of creating real objects, it could remain a virtual patch. The Traphold Museum in Koldingen, Denmark invites the visitor to create “Your Exhibition”. You learn about the life of a curator by being one. At the end, the results are also published on the homepage www.dinudstilling.trapholt.dk. The DLR could inform you about the next mission and your task is it to create a mission patch for it.

Instead of a homepage, it could be added as a game to the *ALL.TÄGLICH! Exhibition*. Every visitor can therefore be a part of the exhibition and display their individually designed mission patch.

The next mission patch for a German Mission could be chosen in a nationwide competition open to only pupils, or design students or professionals, etc.

Topic/Content

- Learn about space flight missions and the symbolism behind it
- Make space emotional by learning about the artistic thoughts
- Space flight is not only about technical goals, but also about greater goals

Reference

Lagrange Point Book

Questionnaires

- *Was bedeutet Weltraum für Sie?* p. 18

Considerations

- You need a good designer to build the graphic elements as well as a well-designed homepage that is fun to use
- It takes some time to research the mission patch design process, or you need to look for somebody within the DLR who knows a lot about the missions and their symbols

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Lukas Adolphi
Simon Denecke
Charlotte Herbst
Sabine Hirsch
Ahmed Mahmoud
Chiara Paola Ratti
Marthe Trottnow

Management

Andrea Kuhfuß

Mentor

Dennis Paul

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Contact

lukasadolphi@gmail.com
simon.denecke@gmx.de
charlotteherbst@gmx.de
sabine.hirsch@gmx.net
a.mostfa@uni-bremen.de
chiarapaola.ratti@gmail.com
info@marthe-trottnow.de



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