A participatory, immersive exhibition experience for exploring the complex relationships between technology and democracy.
PROJECT SUMMARY

The Ting (Ding or Thing) has for many centuries meant the issue that brings people together because it divides them. … If the Ting designates both those who assemble because they are concerned as well as what causes their concern and divisions, it should become the center of our attention: Back to things!
Bruno Latour, 2004

On the occasion of the Norsk Teknisk Museum’s 100th anniversary and also the 200th anniversary of the Norwegian Constitution of 1814 the museum has – in collaboration with Ralph Appelbaum Associates and Tamschick Media + Space – developed a ground-breaking, participatory exhibition that invites the Museum’s visitors to participate in a dialog concerning historic and future relationships between technology and democracy.

The TING is a celebration of the museum’s foundation, showcasing the depth of the museum’s collections and relevance to address historic and future technological and social issues. TING is also an occasion to highlight the museum’s role as a space for public discourse and an advocate for democratic values by hosting an open debate on the exhibit floor.

Ting in its ancient form is a governing assembly and a court – a place where things (Tings) are put up for discussion. In each TING session visitors evaluate technologies for their positive and negative impacts on the establishment, fostering and practice of democracy in society. Visitors then collectively formulate an outcome by voting on a series of questions posed by a moderator.

The physical design of the TING is based on the ancient form of a circular gathering space but is implemented with modern exhibition techniques that combine dramatic, object-based displays, bold graphics, large-scale interactive media and film and facilitated programming. Visitors participating in the TING experience realize that any one technology has many possible uses and meanings and can have profound impacts on the well being of our society on the whole. But through thoughtful debate and collective choice making we can shape the world we live in. The entire experience thus reflects on the democratic process itself, and seeks to inspire in visitors a commitment to participate in ongoing debates concerning the relationship of technology to democracy.
THE EXHIBITION EXPERIENCE

THE EXHIBITION INTRO
Upon approaching the exhibition, visitors encounter five large wood graphic panels with bold quotes reflecting on the relationship between democracy and technology. Illustrations of the eight objects representing the technologies to be discussed in the TING are juxtaposed with interpretive statements. These statements are deliberately contradictory and reveal the inherent subjectivity of any single interpretation. This atmosphere of opinion and provocation sets the stage for a lively deliberation in the TING.

THE CLOCK
At the end of the row of panels, visitors approach a giant clock, which indicates which TING session is up next. Sessions last on average 30 minutes and explore nanotechnology, a DNA-sequencer, an internet-server, a smartphone, a therapeutic robot seal, a solar panel, a 3D-printer and a flying drone.

THE VOTING BLOCKS
A curious pile of thousands of palm sized wooden blocks is heaped near the clock. Visitors are instructed to take a block with them. Throughout the exhibition the voting block is used as a tool for exploring and gathering information about the relationships between technology and democracy. Then in the TING, the block is used as a ballot and represents the visitor’s power and voice as a voting member of society.
THE UNPACKING OF TECHNOLOGY
Moving further into the exhibition space, the visitor encounters four small exhibition sections that serve as an introduction to specific technologies and their relations to democracy historically. Four case studies demonstrate that the value and impact of these technologies can be interpreted in many different and sometimes concurrent ways, both for the benefit and to the detriment of a democratic society. Each section features at its center an iconic object: a Krag-Jørgensen rifle, a television transmitter, a Hollerith counting machine and an industrial robot.

The sections are constructed as an unfolding landscape of wooden pedestals, boxes, showcases, text panels and photographs. With the wood block that visitors picked up at the beginning he or she can trigger interactive spotlights that reveal hidden texts that provide for each object, three different perspectives: how it functions, its political history and its culture impacts. It is thus made clear to the visitor that when considering the relationship between technology to democracy there is not one meaning or truth, but many possible uses and impacts.
THE TING
As visitors reach the center of the exhibition they enter a grand amphitheater-like space of the TING. Just like in an ancient ting – characterized by a ring of stones defining a gathering space with a stone table at its center – the TING is defined by its circular shape and has at its center a large four-meter diameter table whose surface is animated with interactive media projected from above. Two arcing benches with integrated touchscreen provide seating for spectators and an interface for more passive participation.

THE GIANT SHELF OF 100 OBJECTS
Partially encircling the TING area, a five-meter high by twenty-five-meter long curving shelf dramatically displays 100 objects from the museum’s collection. These objects represent technologies that played important roles in the development of Norwegian society. Covering the front surface of the shelf is a translucent scrim that serves as the projection surface for the TING media program. During breaks between TING sessions, lights behind the scrim and synchronized with the media program turn on to reveal the objects. While all 100 objects on the shelf are relevant for the topic of technology and democracy, eight of the objects are specifically highlighted and discussed during TING sessions.

A series of interactive tablets integrated into the benches feature a touchscreen interface that corresponds to the visual arrangement of 100 objects on the shelf. Touching each object on the screen reveals information about that particular object and its history.
THE TING SESSION

While the TING itself is the heart of the exhibition, the TING sessions are the pulse and the event to remember and tell your friends about. "You got to check out this TING! It’s a new kind of exhibition. I joined in an exciting discussion with people I did not previously know and we collectively decided an outcome!"

Every TING session starts with a 2-minute long linear film or ‘trailer’ that introduces the technology that will be up for debate. The trailers are informational as well as entertaining. They create a dramatic atmosphere for open discussion by engaging visitors in the stories behind each technology, pointing out different interesting facets and facts, while at the same time deliberately leaving room for visitors’ own interpretations.

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**THE TING SESSION Flowchart**

1. **Question Asked**
   - Question visualised on Table and Shelf
2. **Answer**
   - Yes / No / Undecided
3. **Result Announced**
   - Result visualised on Table & Shelf
4. **Final Result**
   - Final Result (after 5 Questions)
5. **Live Stream Results**
   - Live Stream Results
6. **Past Results shown on Table and Shelf**

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6. NORSK TEKNISK MUSEUM + RAA + TMS PRESS 15.03.2014
THE DEBATE AND RESPONSE
After the trailers, the interactive table and the projection scrim on the giant shelf switch into a Debate Mode and a live moderator opens the session. The moderator’s role is to engage the audience with questions and to ensure that a lively discussion evolves. There is also an Auto Play mode where a pre-recorded moderator takes the place of live facilitation. The Debate Mode itself consists of a sequence of five questions followed by moderated discussions and votes. Each question is formulated to build upon the previous question. The five questions are at first simple and become more complex. For instance; questions might begin as a personal question and grow more social in nature, or they might initially consider local impacts before expanding to global impacts. Visitors are asked to respond to the questions by placing their blocks down on spots on the table designated by the media projection for answers – yes, no or undecided. A camera mounted on the ceiling recognizes the blocks positions and a computer tallies the results.
THE OUTCOME
After the last vote the moderator sums up the debate and the media program generates a visual output in the form of a large-scale immersive video projection of a mountain landscape across the entire shelf. This landscape is a statistic-based, three dimensional, data-graphic generated by the visitors’ votes. This ever-changing landscape – a visual metaphor for a democratic world – is cumulatively built by individual choices, reflecting the political and social space that we collectively build and inhabit as result of our participation in democratic processes.

Following this dramatic display a Comment Mode allows visitors to enter their opinions and remarks on the discussion to be read by subsequent audiences. Visitors can add their comments on tablets in the exhibition or via their own web interface.

A FINAL QUESTION
A final question is posed as visitors leave the exhibition. The visitor is asked to answer this question by placing the wood block in one of three chutes labeled yes, no, and undecided. The chutes lead to three collection bins on the lobby level where results are displayed cumulatively over the duration of the exhibition as wood blocks pile up in the corresponding bins.

DO YOU THINK IT IS POSSIBLE IN A DEMOCRACY TO CONTROL TECHNOLOGICAL DEVELOPMENT?
RAALPH APPELBAUM ASSOCIATES, INC

Ralph Appelbaum Associates (RAA) are planners, designers, and producers of award-winning museum exhibitions, visitor centers, and educational environments. Subject areas range from natural history and the physical sciences, to cultural, social, and corporate history, sports, and the fine arts.

Founded in 1978 and currently the largest interpretive museum design firm in the world, RAA has an interdisciplinary staff of more than 160 specialists in different aspects of design and communications. The firm with offices in New York, London, Berlin, Moscow and Beijing has completed over 550 commissions to date worldwide.

RAA is best known for large-scale, permanent museum projects as well as temporary exhibitions requiring a marriage of complex educational content with physical environments that are at once compelling and smoothly operational. The firm specializes in projects that integrate complex themes and ideas in socially relevant and engaging exhibition installations.

RAA’s Berlin office was established in Spring 2012 and consists of an experienced team of architects, exhibition designers, graphic designers and content developers.

TAMSCHICK MEDIA+SPACE GMBH

Tamschick Media+Space (TMS) is specialized in medial scenography for almost 20 years. As one of Europe’s leading specialists in large format media productions TMS conceives, designs and produces immersive, multisensory installations for major international projects in museums at expos, fairs and in the context of theatre, opera and dance.

The goal of TMS is to orchestrate traditional and new media tools such as film, interaction, kinetics, graphic design, sound and space together in order to transform meaning, contents, objects into three-dimensional, accessible, holistic spatial experiences. All forms of media production – from computer-animated content to innovative film formats with specially developed technologies – elaborate visual design, programmed interaction and specially designed architecture are composed into intensive experiential and dramatic experiences.

The interdisciplinary team consists of experienced professionals in the fields of design, direction, scenography, interior design, product design, interaction design, communication, graphic and motion design, as well as project managers and is supplemented by a network of freelance writers, artists, designers and programmers. With it’s award-winning productions TMS mesmerizes large audiences in Arabia, Asia and Europe.

NORSK TEKNISK MUSEUM

The Norwegian Museum of Science and Technology is Norway’s largest museum of contemporary history. It is responsible, on a national level, for the fields of Engineering, Science and Medicine. The Science Centre and the National Museum of Medicine are integrated parts of the Norwegian Museum of Science and Technology. Our vision is to be the most visible, daring and dialog focused museum.

The museum manages one of Norway’s largest museum collections with more than 2 million individual artifacts. The exhibitions interactively convey how Engineering, Science, Medicine and Industry have evolved over the past 150 years. The museum aims to shed light on the interaction between technology on one side and society on the other. The total exhibition area covers around 12,000 m².

The museum is mainly funded by the Ministry of Culture, Ministry of Health and the Ministry of Education. This comes in addition to the museums own income and private sponsors. The museum actively documents and conducts research within the fields of Technology, Science and Medicine and is responsible for coordinating and developing national networks within these fields.