COLLEGE OF INNOVATION
THAMMASAT UNIVERSITY

เอกสารคำสอน

จวอ.497

การออกแบบนิทรรศการ

เอกสารคำสอน

วิชา จวอ.497

การออกแบบนิทรรศการ

โดย

ผู้ช่วยศาสตราจารย์ ดร.อาษา ตั้งจิตสมคิด

หลักสูตรศิลปศาสตรบัณฑิต

สาขาวิชาการจัดการมรดกวัฒนธรรมและอุตสาหกรรมสร้างสรรค์

วิทยาลัยนวัตกรรม มหาวิทยาลัยธรรมศาสตร์

คำนำ

เอกสารคำสอนเล่มนี้เป็นการรวบรวมเนื้อหาที่มีความเกี่ยวข้องกับวิชา จวอ.497 การออกแบบนิทรรศการ โดยแบ่งออกเป็น 4 ส่วนสำคัญคือ (1) ทฤษฎีและหลักการของการออกแบบนิทรรศการ (2) การวิเคราะห์และออกแบบนิทรรศการ (3) ทฤษีของแสงและเงา และ (4) นวัตกรรมเทคโนโลยีกับนิทรรศการ ในแต่ละส่วนจะมีคำอธิบายให้เห็นถึงความรู้เพื่อสะท้อนให้ผู้เรียนได้ทราบถึงหลักการและทฤษฎีต่างๆที่สามารถนำไปประยุกต์ใช้กับงานด้านการออกแบบนิทรรศการได้จริง โดยในเนื้อหาจะมีรูปภาพประกอบข้อความ Infographics และภาพเลื่อนพร้อมแบบฝึกปฏิบัติรวมถึงมีบรรณานุกรมเพื่อให้ผู้เรียนสามารถขยายความเป็นมาของสาระและข้อมูลเพื่อความเกิดความทันสมัยและเพื่อให้สอดคล้องกับการเปลี่ยนแปลงของโลกในปัจจุบันผู้สอนได้จัดทำแพลทฟอร์มการเรียนรู้ผ่านระบบ Cloud โดยได้ทำการอัพโหลดข้อมูลทั้งหมดของเอกสารคำสอนนี้ไปไว้ที่ http://sarosworld.com/exhi ซึ่งเป็นเว็บไซท์อย่างเป็นทางการของรายวิชานี้ทำให้เนื้อหาทั้งหมดผู้เรียนสามารถเข้าถึงได้แบบ Ubiquitous ทุกที่ทุกเวลาด้วยอุปกรณ์ใดๆเพียงเชื่อมต่อกับอินเตอร์เน็ต

http://sarosworld.com/exhi

ผู้ช่วยศาสตราจารย์ ดร.อาษา ตั้งจิตสมคิด

ผู้อำนวยการหลักสูตรปริญญาโท MCT/MCI

วิทยาลัยนวัตกรรม

มหาวิทยาลัยธรรมศาสตร์

สารบัญ

	หน้า
คำนำ	2
สารบัญ	3
แนวการสอน	5
ส่วนที่ 1: ทฤษฎีและหลักการของการออกแบบนิทรรศการ	9
ทฤษฎีการศึกษา	9
Flipped Classroom	9
Ubiquitous Learning	15
Social Network	18
ทฤษฎีการติดต่อสื่อสาร	21
ทฤษฎีการออกแบบพิพิธภัณฑ์	37
Why Don’t You? Museum Infographic	37
Protecting the Royal Albert Hall [Infographic]	39
แบบฝึกหัดส่วนที่ 1	63
ส่วนที่ 2: การวิเคราะห์และออกแบบนิทรรศการ	64
การเขียนโครงการ	64
การจัดแบ่งงาน	67
การติดตามงาน	71
นิทรรศการและการตลาด	74
แบบฝึกหัดส่วนที่ 2	80
ส่วนที่ 3: ทฤษีของแสงและเงา	81
การจัดพื้นที่	81
การจัดแสงและเงา	87

Warm and cold colors. 102
Color temperature. 107
Shading 109
แบบฝึกหัดส่วนที่ 3 110
ส่วนที่ 4: นวัตกรรมเทคโนโลยีกับนิทรรศการ 111
เทคโนโลยีการแสดงผลภาพ (AR/VR) 111
การสร้างปฏิสัมพันธ์กับกลุ่มเป้าหมายด้วยเทคโนโลยี 128
การใช้เทคโนโลยีเพื่อเพิ่มประสิทธิภาพนิทรรศการ 131
การจัดนิทรรศการแบบวิชวล (Virtual Exhibition) 141
แบบฝึกหัดส่วนที่ 4 146
บรรณานุกรม 147

เค้าโครงการเรียนการสอน | Course Syllabus

หลักสูตรศิลปศาสตรบัณฑิต สาขาวิชาการจัดการมรดกวัฒนธรรมและอุตสาหกรรมสร้างสรรค์

Bachelor of Arts Program in Cultural Heritage and Creative Industries (BMCI)

วิทยาลัยนวัตกรรม มหาวิทยาลัยธรรมศาสตร์

หมวดที่ 1 ข้อมูลทั่วไป

1. **รหัสและชื่อรายวิชา**

   จวอ.497 การออกแบบนิทรรศการ

   HIM 497 Exhibition Design

2. **จำนวนหน่วยกิต:** 3 หน่วยกิต

3. **หลักสูตร:** การจัดการมรดกวัฒนธรรมและอุตสาหกรรมสร้างสรรค์

   ประเภทของรายวิชา: ☐ วิชาบังคับ ☑ วิชาเลือก

4. **อาจารย์ผู้รับผิดชอบรายวิชา:** ผู้ช่วยศาสตราจารย์ ดร.อาษา ตั้งจิตสมคิด

5. **ภาคการศึกษา:** ภาคการศึกษาที่ 1/2560

6. **รายวิชาที่ต้องเรียนมาก่อน:** ไม่มี

7. **สถานที่เรียน:** ท่าพระจันทร์

หมวดที่ 2 จุดมุ่งหมายและวัตถุประสงค์

1. **คำอธิบายรายวิชา**

หลักพื้นฐานการออกแบบนิทรรศการในพิพิธภัณฑสถานและกิจกรรมต่าง ๆ ที่เน้นการวางแผนในจัดทำนิทรรศการ การออกแบบ การจัดทำโครงการ ทักษะและวิธีในการนำเสนอนิทรรศการ การใช้พื้นที่ สี แสง เนื้อหานิทรรศการ การสื่อสารผ่านนิทรรศการ การปฏิสัมพันธ์ระหว่างนิทรรศการและผู้ชม รวมทั้งการนำเสนอนิทรรศการเพื่อการศึกษาอย่างไม่เป็นทางการ

2. **วัตถุประสงค์ของรายวิชา**

- เพื่อเข้าใจหลักการพื้นฐานและทฤษฎีการออกแบบนิทรรศการ

- เพื่อเข้าใจเรื่องการวางแผน ออกแบบและจัดทำนิทรรศการ
- เพื่อเข้าใจพื้นฐานเรื่องพื้นที่ แสง สีในการจัดทำนิทรรศการ
- เพื่อประยุกต์ใช้นวัตกรรมเทคโนโลยีกับการจัดทำนิทรรศการ

หมวดที่ 3 ลักษณะและการดำเนินการ

1. เนื้อหาวิชา

- หลักการพื้นฐานและทฤษฎีการออกแบบนิทรรศการ
  - ทฤษฎีการศึกษา
  - ทฤษฎีการติดต่อสื่อสาร
  - ทฤษฎีการออกแบบพิพิธภัณฑ์
- การวางแผน ออกแบบและจัดทำนิทรรศการ
  - การเขียนโครงการ
  - การจัดแบ่งงาน
  - การติดตามงาน
  - การตลาดนิทรรศการ
- ทฤษฎีพื้นฐานของพื้นที่ แสง สี
  - การจัดพื้นที่
  - การจัดแสงและเงา
  - ความรู้สึก อุณหภูมิและการแสดงออกของสี
- นวัตกรรมเทคโนโลยี
  - เทคโนโลยีการแสดงผลภาพ (AR/VR)
  - การสร้างปฏิสัมพันธ์กับกลุ่มเป้าหมายด้วยเทคโนโลยี
  - การใช้เทคโนโลยีเพื่อเพิ่มประสิทธิภาพนิทรรศการ
  - การจัดนิทรรศการแบบวิชวล (Virtual Exhibition)

2. จำนวนชั่วโมงที่ใช้ต่อภาคการศึกษา: 45 ชั่วโมง

3. จำนวนชั่วโมงต่อสัปดาห์ที่อาจารย์ให้คำปรึกษาและแนะนำทางวิชาการแก่นักศึกษาเป็นรายบุคคล: 3 ชั่วโมงต่อสัปดาห์

หมวดที่ 4 แผนการสอนและการประเมินผล

1. แผนการสอน

ครั้ง	เนื้อหาวิชา	รูปแบบ วิธีการสอน	ผู้สอน
1	Introduction	Active Learning	ผศ.ดร.อาษา
2	ทฤษฎีการศึกษา	Active Learning	ผศ.ดร.อาษา
3	ทฤษฎีการติดต่อสื่อสาร	Active Learning	ผศ.ดร.อาษา
4	ทฤษฎีการออกแบบพิพิธภัณฑ์	Active Learning	ผศ.ดร.อาษา
5	การเขียนโครงการ	Active Learning	ผศ.ดร.อาษา
6	การจัดแบ่งงาน	Active Learning	ผศ.ดร.อาษา
7	- การติดตามงาน - นิทรรศการและการตลาด	Active Learning	ผศ.ดร.อาษา
8	การสอบกลางภาค		
9	การจัดพื้นที่	Active Learning	ผศ.ดร.อาษา
10	การจัดแสงและเงา	Active Learning	ผศ.ดร.อาษา
11	ความรู้สึก ,อุณหภูมิ, และการแสดงออกของสี	Active Learning	ผศ.ดร.อาษา
12	เทคโนโลยีการแสดงผลภาพ (AR/VR)	Active Learning	ผศ.ดร.อาษา
13	การสร้างปฏิสัมพันธ์กับกลุ่มเป้าหมายด้วยเทคโนโลยี	Active Learning	ผศ.ดร.อาษา
14	การใช้เทคโนโลยีเพื่อเพิ่มประสิทธิภาพนิทรรศการ	Active Learning	ผศ.ดร.อาษา
15	การจัดนิทรรศการแบบวิชวล (Virtual Exhibition)	Active Learning	ผศ.ดร.อาษา
	การสอบปลายภาค		

หมายเหตุ: 1 session = 3 hours

2. แผนการประเมินผลการเรียนรู้

วิธีการประเมิน	%
1.เข้าเรียน	10
2.โครงการ	40
3.สอบกลางภาค	20
4.สอบปลายภาค	30
รวม	**100%**

3. การประเมินผลการเรียน

การประเมินผลการเรียนใช้วิธีการตัดเกรดอิงเกณฑ์ ดังนี้

ระดับ	A	B+	B	C+	C	D+	D	F
ค่าระดับ	4.00	3.5	3.0	2.5	2.0	1.5	1.0	0

หมวดที่ 5 ทรัพยากรประกอบการเรียนการสอน

1. เอกสารคำสอน

1.1 อาษา ตั้งจิตสมคิด (2017). การออกแบบนิทรรศการ. วิทยาลัยนวัตกรรม มหาวิทยาลัยธรรมศาสตร์.

1.2 ARSA T. HIM497: Exhibition Design [Internet], [cited 2017 July 14]. Available from: http://sarosworld.com/exhi

2. ตำราและหนังสือที่ใช้ประกอบการเรียนการสอน

อาษา ตั้งจิตสมคิด (2017). Illustration saros real battle. วิทยาลัยนวัตกรรม มหาวิทยาลัยธรรมศาสตร์. (2017 July 25). 249p.

อาษา ตั้งจิตสมคิด (2017). คอมพิวเตอร์เกม x การศึกษา x เทคโนโลยี. วิทยาลัยนวัตกรรม มหาวิทยาลัยธรรมศาสตร์. (2017 August 1). 175p.

David Dean. Museum Exhibition: Theory and Practice. Routledge. 2002.

ลงชื่อ ....

(ผู้ช่วยศาสตราจารย์ ดร.อาษา ตั้งจิตสมคิด)

อาจารย์ผู้รับผิดชอบรายวิชา

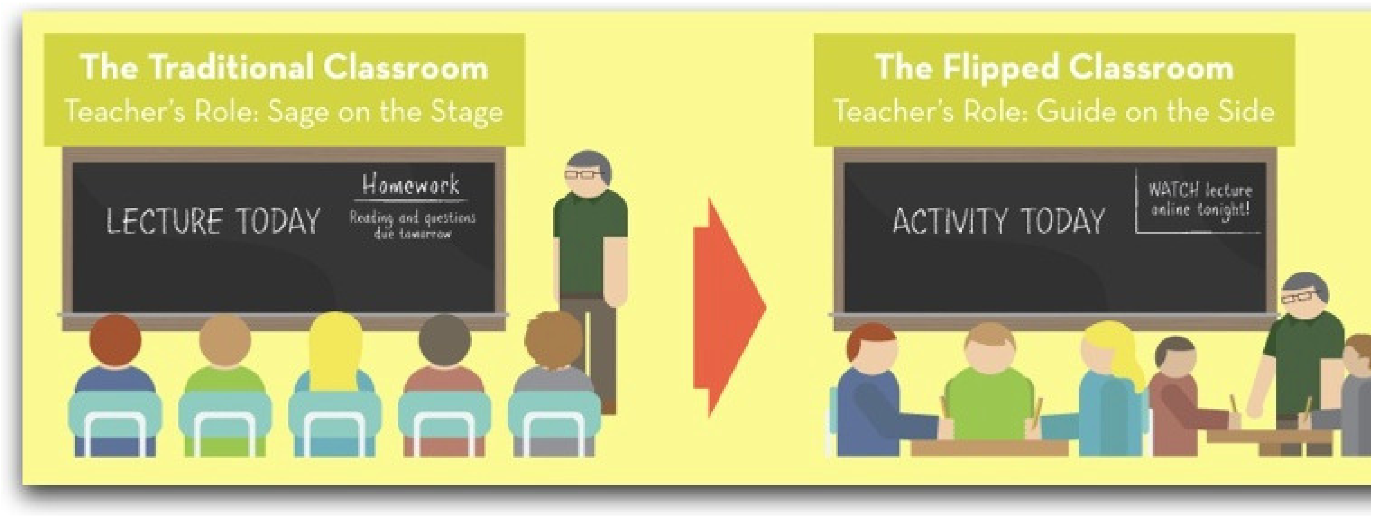
ลงชื่อ ....

(อาจารย์ ดร.เวฬุรีย์ เมธาวีวินิจ)

ผู้อำนวยการหลักสูตร

Flipped classroom

Flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. Typically, a flipped classroom lecture assumes that students watch short video lectures at home. These video lectures are either created by the instructor or selected from an online source. In class, students solve different exercises, projects and participate in discussions.



In this way, students are learning actively by engaging in various hands-on activities. We can say that a flipped classroom is something like a workshop where students test their skills in applying knowledge. Instructors are seen as coaches, whose role is to encourage students in individual inquiry and collaborative efforts.

As compared to the traditional classroom education, in the flipped classroom the role of the instructor and students changes. A typical front-of-the-class position is exchanged for in-class activities which encourage students to collaborate and cooperate instead of being passive listeners.

https://www.youtube.com/watch?v=ojiebVw8O0g (https://www.youtube.com/watch?v=ojiebVw8O0g)

(https://www.youtube.com/watch?v=ojiebVw8O0g)

How did it all begin?

In 2007, two teachers, Jonathan Bergmann and Aaron Sams at Woodland Park High School discovered software to record PowerPoint presentations. They recorded and posted their lectures online for students that missed their class. Gradually, the online lectures started spreading. Bergman and Sams were soon asked to speak to teachers around the country about their methods. As a result, teachers began using online videos and video podcasts to teach students outside class, reserving class time for collaborative work and concept mastery exercises.

Figure 1 - Jonathan Bergmann and Aaron Sams

How to do it?

Often when instructors are planning a flipped classroom, they focus on planning the in-class activities and on recording their video lectures. However, there are two other aspects of the flipped-class design that also require planning: 1) how will the activities be introduced to the students?, 2) how will the instructor and the students know that they have adequately prepared for the in-class experience?

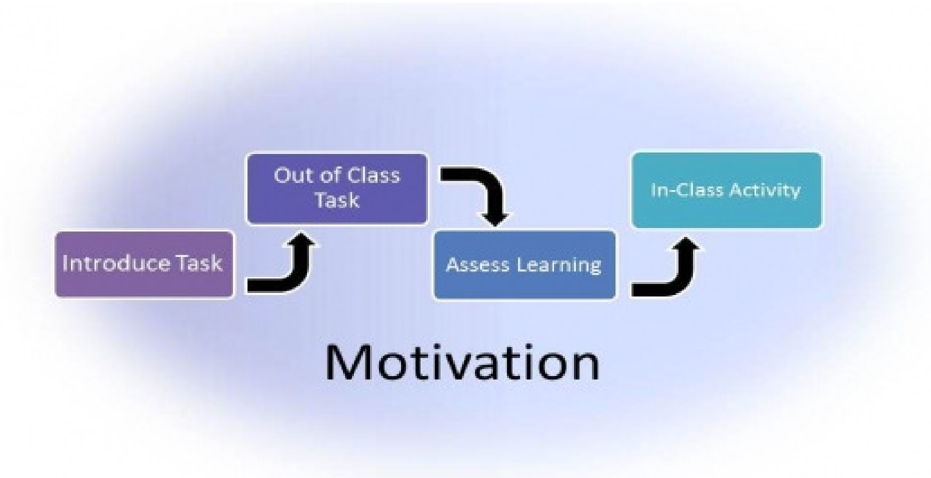


Figure 2 - Flipped classroom model

1. Introduce a task

Goal: maximize student participation for the activities they will be doing online and in class.

Instructors should clearly explain their expectations for what the students will be doing and the amount of time the students will need to invest to be ready for the classroom activity.

2. Out of class tasks

Instructors should carefully consider the choice of media for the online activities and materials. Instructors can create their own materials such as narrated PowerPoints, screencasts and podcasts, or reuse online content such as websites, readings and videos. Video content should be no more than 10-15 minute long -- also, it can be helpful to students if there are guiding questions or prompts to help them recognize the keys objectives of the preparatory work. If instructors include an online means for students to submit questions about difficult concepts or other questions, they can use some class time to discuss these issues.

How to prepare the students for online activities?

Typically students will either read some text or watch a video or a screencast online to prepare for the in-class activities.

- **Online Readings**: Depending on the learning objective(s) of the flipped class, students may need to read an article, book chapter or website to prepare for the in-class activities. To help students identify the most important concepts or information, and to motivate them to engage deeply with the reading, instructors can include at least one of the following:
  - guiding questions
  - reflective questions
  - annotations
  - highlights of the key points or parts of the text or a diagram.
- **Screencasts:** Screencasts are recordings that capture audio narration along with computer screen images. Screencasts are typically used to introduce new complex concepts, to review foundational concepts, or to show visually complex activities (such as lab demonstrations or technical processes) or distant locations (such as field environments). Research has demonstrated that students' attention declines in the first 10 to 15 minutes of a lecture (McKeachie and Svinicki, 2006), and it is therefore recommended that any screencast materials be chunked to produce shorter segments (~10-12 minutes long). Guided questions, reflective questions or short quizzes between the short segments can help students engage more effectively with these materials.
  - For example, if a video lecture lasts 27 minutes, instructors should break them into 4 7-minute shorter videos. Szpunar et al. found that when you interpolate, or place, memory tests in between these video chunks, it pairs students with memory's best friend, **retrieval practice**. Every time students at any grade level have to retrieve information, this exercise improves their memory for that information. What kinds of questions should we ask students in between those chunks? Multiple choice or short answer questions.

3. Assess learning

Once we have planned the online activities, we should make sure that students have actually watched the videos or read the online texts so that they come prepared to the classroom. Before the in-class activities, students can assess their knowledge by solving short online quizzes, lead a discussion, send a written report or an essay to the instructor or draw a concept map.

Effective assessment practices begin when you can complete the following sentence: "By the end of the course, I want my students to be able to …" Concrete verbs such as define, argue, solve, and create are more helpful for course planning than vague verbs such as know or understand or passive verbs such as be exposed to. If you write, "I want students to think like kinesiologists," elaborate on what that means. How does a kinesiologist think? Which aspects of that thinking do you want to cultivate in your students? Be as specific as possible and the students will be much more likely to reach the intended learning outcomes of the course.

4. In class activities

The in-class activity time can be used to encourage students to be creative and make discoveries (and errors) in a relaxed, low-risk environment.

Figure 3 - Group work in the class

1. **Questions:** Questions are the simplest form of interaction and can occur at any time during the lecture. By asking questions, you not only turn students into active participants, but you can also get a sense of their interest and comprehension. You might try asking questions at strategic points or asking for comments or opinions about the subject.
2. **Pro and con grid:** The pro and con grid lists advantages and disadvantages of any issue and helps students develop analytical and evaluative skills. It also forces students to go beyond their initial reactions, search for at least two sides to the issue, and weigh the value of competing claims.
3. **Brainstorming:** In this activity, students generate ideas which you record on the blackboard or overhead. When beginning a new topic, you might begin by saying “Tell me everything you know about…” You may decide to put the students’ comments into categories, or you might ask students to suggest categories and comment on the accuracy and relative importance of the array of facts, impressions, and interpretations. The main rules of brainstorming are to acknowledge every offering by writing it down and save any critiquing until after the idea generation time is over.
4. **Formative (ungraded) quizzes:** This technique involves writing quiz questions on the board, an overhead projector, or a handout and giving students an appropriate time to respond. You may wish to collect anonymous responses, or if the question entails multiple choice, students can raise their hands in agreement as you announce each response. A quiz at the beginning of class allows you to determine how familiar students are with important terms, facts or concepts prior to the lecture, while a quiz that follows a lecture segment can reveal how well students understood the material.
5. **Think-pair-sharing:** In its simplest form, students think about a particular question or scenario then they pair up to discuss their ideas. They then share their results in a large class discussion. Think-pair-sharing forces all students to attempt an initial response to the question, which they can then clarify and expand as they collaborate. This process should take five to ten minutes, depending on the question’s complexity. An extension of this format is to have two pairs join each other and compare answers.

6. **One-minute paper or short writes**: Punctuating your class with short writing assignments is a powerful way to assess the degree to which students understand presented material. You might ask, "What was the most important thing you learned during this class?" "What questions remained unanswered?" or "Summarize the main point of today's lecture in one sentence."
7. **Problem solving:** demonstrations, proofs and stories: Begin a lecture with a question, a paradox, an enigma, or a compelling, unfinished human story. Solving the problem, depending on what it is or in what field, may require a scientific demonstration, a mathematical proof, an economic model, the outcome of a novel's plot, or a historical narrative. You refer back to the problem throughout the lecture, inviting students to fill in imaginative spaces in the story (or model) with their own solutions. Students fill in their successive answers passively, or the instructor elicits responses which are recorded on the board and discussed. Example questions include: "What do you think will happen?" "Which solution, outcome, or explanation makes the most sense to you?"
8. **Modeling analytical skills:** This involves viewing and analyzing passages of text, paintings, sonatas, graphs, charts, artifacts, etc. together with your students. You should make sure students have a copy of the document in front of them (or visual access through slides or overhead transparencies), and then follow three steps: model the analysis, let the students practice it, and then give them feedback.
9. **Debates:** Debates allow you to add a participatory dimension to your lecture without compromising your control of the class. One strategy is to divide students according to where they happen to sit. Another approach is to ask them in advance to seat themselves in the section representing a particular side of the debate. When some students refuse to choose one side or the other, create a middle ground and invite their reasons for choosing it. Before concluding, you should ask two or three volunteers to make summary arguments for each side.
10. **Role playing:** The first step in this lecture variation is to give a mini-lecture to establish the context and setting for the role playing. Then divide the class into a number of small groups of varying sizes. Each group is assigned a clearly delineated role and given a specific, concrete task – usually to propose a position and course of action. To bring closure to the topic, a debriefing exercise is necessary to help identify what students learned and make the transition to the next topic.

5. Motivation

Student motivation underlies the whole learning process. Motivation is affected by an enthusiastic instructor who creates an open and positive atmosphere in class. Moreover, activities should be designed to be challenging, but achievable. Also students will be more motivated if they find personal meaning and value in the material and see that the course is relevant and linked to their future success. Providing frequent feedback to students as they complete their learning can also increase motivation.

EARN YOUR BADGE

FLIPPED CLASSROOM MASTERY

To earn this badge, you should complete one of the following assignments:

Plan your own flipped classroom on any topic of your choice. Which media would you plan for the online session? How would you conduct the in-class activities? How would you check if your students understood the most important concepts? How would you motivate your students?

1) Make an info-graphic that illustrates your ideas: **https://infogr.am/** **(https://infogr.am/)**

, **http://piktochart.com/ (http://piktochart.com/)** OR

2) Make a Prezi presentation that illustrates your ideas: **https://prezi.com/ (https://prezi.com/)**

You can submit your results here: **Forum Unit 2 (https://canvas.instructure.com/courses/974952/discussion_topics/6037145)**. You should also comment on other students' posts to obtain your badge.

LITERATURE

[1] Planning the flipped classroom: **https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/planning-courses-and-assignments/course-design/course-design-planning-flipped-class (https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/planning-courses-and-assignments/course-design/course-design-planning-flipped-class)** (online; accessed on 8-10-2015)

[2] Educase: 7 things you should know about flipped classroom, 2012, **https://net.educause.edu/ir/library/pdf/eli7081.pdf (https://net.educause.edu/ir/library/pdf/eli7081.pdf)** (online, access on 5-10-2015)

Ubiquitous Learning: What Every Education Organization Needs To Know

While a variety of platforms have been developed and tested in the eLearning space -blended learning, flipped classrooms, gamified learning, Massive Open Online Courses (MOOCs), and more- the perspective of ubiquitous learning has rarely been applied in a concrete way to real online/computer-based educational efforts. This article presents a broad view of ubiquitous learning in the Professional Education context and some quick ways for education organizations to begin building ubiquitous learning efforts.

What Is Ubiquitous Learning And How Can You Use It?

Constant connectivity and technological saturation aren't abstract concepts any longer: They're here, and they have the potential to provide an unbroken stream of a variety of media to people around the globe. This means everyone has a constant opportunity to learn; something that education-oriented organizations should be tapping into.

As technologies continue to make learning more convenient, more effective, and more ubiquitous, education companies should be making learning materials ever more available. The shift from teacher-and-blackboard to teacher-and-technology doesn't just represent an evolution of tools used, but of capabilities realized. eLearning is eliminating and greatly reducing many traditional barriers to education, including distance and cost. There are already more than 2.5 million K-12 students enrolled in online learning courses in the US, along with 32% (approx. 6.7 million) higher ed students.

More than a quarter of all corporate training hours are now delivered online and/or via other computer-based technology, too.

The term "ubiquitous computing" was first coined by Mark Weiser during his years as a researcher at Xerox PARC over thirty years ago. Though the philosophical underpinnings and physical manifestations of this concept continue to be debated and refined, the world is at or near the tipping point for the total cultural adoption of ubiquitous computing. Most of us walk around with powerful computers (i.e. smartphones) in our pockets, and computers are increasingly found in all of the devices we interact with, from our cars to our televisions to our kitchen appliances, home thermostats, and so on.

Ubiquitous learning is a natural outgrowth of ubiquitous computing. It refers to the constant opportunity for learning experiences and media transfer/communication that our constant computing connectivity provides. Any situation can provide an opportunity for learning, with or without computers; the increased pervasiveness of computer technology and especially the internet means any situation can become a purposeful instructional experience; not only can people learn at any time, but they can receive media that is explicitly learning-focused.

For our purposes, ubiquitous learning = eLearning + mobile learning

The right material delivered in the right way at the right time and place can make all the difference in educational outcomes. Ubiquitous learning means educators will never miss the perfect opportunity, and learners will benefit from the result.

Ubiquitous learning begins with accessibility. Chances are your association already has some educational materials available online and/or in digital formats. Make sure these resources are accessible to your members across all platforms and devices; desktop computers, mobile devices, and even wearable tech like Google Glass and the Apple Watch. Making it easy for your members to access materials when and where they want to improves engagement and educational success rates. Studies show that we are up to 12% more productive when we're happily engaged in a task, so putting in the effort to allow your members to learn when and where it best suits them is very much worthwhile.

Internet and computer access has grown by leaps and bounds in the past several years, to the point that 86.75% of people in the United States have regular and reliable internet access, and 71.4% of the US population owns a smartphone (amongst 25-54 year olds, that jumps to 79%). Your members are part of the ubiquitous computing world; give them the best ubiquitous learning experience you can.

A Broad View Of Ubiquitous Learning In The Professional Association Context

All communication should be considered education, from blog posts to newsletters to lists of membership benefits and resources. Making the most of ubiquitous learning means understanding that your messages and media don't have to be explicitly education-oriented to become a part of your members' ubiquitous learning experience. Put all of your communications online, and give your members ubiquitous access when it comes to learning about your association and the profession you represent.

The more convenient learning becomes, the more effective it is for all concerned. eCommerce retailer Shopzilla was able to improve revenue by 12% and page views by 25% by simply reducing page load time. Chances are you can make some much bigger improvements to the convenience of your available information, and reap even bigger rewards.

It's easy to get started, too.

4 Quick Ways To Begin Building Your Ubiquitous Learning Efforts

1. **Ensure that your website is easy to navigate, has clear and focused messaging, and has clear calls to action.**
   According to an Entrepreneur.com study, these are things that all web users notice and find important.
2. **Make improvements to your email outreach.**
   91% of the US population uses their email daily, and email has three time more engagement than social media. Encourage your members to sign up for an emailed RSS feed with your latest update, and use one of the many services available to make customized mass emails easy to set up and send.
3. **Start developing a long-term mobile strategy that makes use of apps.**
   Users interact with mobile apps a whopping thirty hours per month, compared with just four hours spent browsing standard web pages on mobile devices. Mobile push notifications can keep everyone updated about important news and events, and can increase app engagement as much as 88%. Meet your members where they are, with the media they're choosing to use.
4. **Create platforms for members to create their own relevant content and interact with each other.**
   User generated content such as blogs, forum questions and answers, videos, and even full learning courses are virtually cost-free to your association, and it creates greater loyalty and a sense of ownership amongst your members. It is also 20% more influential in purchase decisions and takes up 30% of the media consumed by those 18-36 years old.

The interaction fostered by user generated content allows for improved and more extensive learning experiences, as well. 70% of all professional learning is informal, according to the Bureau of Labor Statistics, and one's knowledge network is far more indicative of their learning potential than is their current knowledge. Hosting learning sessions, member forums, and finding other ways to share user generated content in interactive platforms can all create new and ongoing learning experiences that position your association as a thought leader in your industry.

These steps are just the start of creating a true ubiquitous learning environment, but invest some time and resources here and you'll see immediate results.

Ubiquitous Learning Is Broad, Pervasive, And Nuanced

New technologies present new opportunities, and they also require a new perspective. To plant your association's educational efforts firmly into the twenty-first century, you'll need to adapt to the fact that your members will find a source for all of the information they can handle. You can be a ubiquitous force in shaping and delivering that information, or your members will turn elsewhere to be informed.

I think the choice is clear.

Rethinking the social network

bbc.com/future/story/20120411-rethinking-the-social-network

By Tom Chatfield 12 April 2012

At some point later this year, Facebook will connect one in every seven people on the planet. When it passes the billion user mark – and really it is a question of when, not if – it will inevitably be accompanied by the common lament of the social media critic: social networks degrade the idea of friendship. It's absurd, they argue, to be "friends" with thousands of people – and an alarming sign of shallow times.

It's a critique backed by several studies suggesting that it's only possible to maintain meaningful social relationships with a relatively small number of people. A maximum of around 150 is often cited: a figure is known as "Dunbar's number" after the evolutionary anthropologist Robin Dunbar, whose work first proposed such a limit.

Dunbar's argument, first set out in 1992, was based on the limited capacity of the human brain's neocortex – the part of the brain responsible for conscious thought, sensory perception and language, amongst others. More recent studies of the "economy of attention" within social media services like Twitter suggest his analysis also holds true in a digital context.

Here, however, is where I diverge from the anti-Facebook brigade. For it seems to me that the real lesson to be taken from work like Dunbar's is precisely the opposite of most critiques of social media: that, rather than wasting time decrying the insubstantiality of our online relationships with near-strangers, by far the most important question is how digital technologies interact with the small number of truly significant relationships in our lives.

This is what you might call an "inner network" effect. Network effects, ordinarily, describe a geometric relationship between the size and the value of a collective. The network with the most content is the most useful one, and so bigger networks tend to grow ever larger, whether they connect people (like Facebook or Twitter) or offer products and services (like Amazon, eBay and Craigslist).

Macabre thoughts

Within this trend, however, runs a contrary need: for ease and security of contact with a select group. It was precisely this "inner network" that Google tried to tap into with its recently revamped social network Google Plus, which has the ability to categorise friends and relationships into different "circles". The jury is still out on whether Google can ever hope to match Facebook's scale. But the concept of an inner network has already proved its popularity through the single most popular form of social networking in the modern world: the humble text message.

Even Facebook's millions pale into insignificance compared to the almost six billion mobile phone accounts active globally. In America, according to research by Nielsen, the average teenager now sends and receives over 3,300 text messages each month: more than six messages for every single waking hour of every single day, or one every ten minutes.

This not only puts all other forms of communication in the shade. It also, in 2012, begs the central question of why a digital exchange with all the sophistication of a smoke signal is so astonishingly popular compared to the cutting edge of online culture.

Brevity, convenience and control all play their part. Above all, though, there's the value of exclusive access. Knowing someone's personal mobile phone number is far more precious and personal a form of contact than a Facebook page, email address or Twitter handle. Out of those thousands of text messages, moreover, the vast majority involve a tiny handful of people: close friends, family, colleagues. This is the inner network of someone's life. And it is the perpetual, personal availability of these people – not millions of strangers and thousands of half-friends online – that most defines the social communications revolution of the last few decades.

At a recent conference, I listened to an Indian entrepreneur talking about the importance of mobile phones in his country, which with around 900 million active accounts is exceeded only by China's one billion. The totals involved are staggering. Yet mobile communications are revolutionary in a country like India, he argued, precisely because they permit people to pull each other individually out of the crowd, not because they allow them to join it.

The most important features of a mobile phone in nations like India aren't internet access, cameras, music, storage or email; they're the practical necessities of good battery life and an integrated flashlight, for when both mains power and light are in short supply. Similarly, from traders in flower markets to businessmen keeping in touch with distant relatives, what matters most of all in communications terms is being able to get hold of the small number of people closest to you, personally and professionally; and ensuring that your interactions with them are reliable, exclusive, unobtrusive and secure. The rest – Facebook and the wonders of the world wide web included – is largely detail.

Consider this: why is it so many of us find it so stressful to be without our mobile phones, even for a short time? To answer this question accurately, it's worth posing a related, if more macabre, query: why is a fully charged mobile phone the item people most request to have buried alongside them in a coffin?

The answer in the second case is that they desperately want to be able to make a phone call or send a message at what might just be their time of greatest need. Similarly, our great attachment to mobile devices in daily life isn't about random messages from people we don't care about – it's because we want to be able to make or to take that crucial call, the as-yet-unknown interaction with someone close to us that might signify marvellous or appalling news.

Technology's greatest claim on us, here – and it is a claim that is increasingly making mobile phones more like an extension of our minds and bodies than a mere tool – is its promise of constant connection to our innermost network.

It's dangerously easy simply to gawp and grimace at the sheer scale of the networks connecting us. The numbers are staggering, and offer a powerful index of how much and how fast our world is changing. But we mustn't overlook the great lesson to be drawn from work like Dunbar’s: the weight of a special few will always outweigh the many, no matter how great the “many” becomes.

Do you agree with Tom? If you would like to comment on this story, head over to our Facebook page or message us on Twitter.

Communication Principles

Learning Objectives

1. Discuss how communication is integrated in various aspects of your life.
2. Explain how communication meets physical, instrumental, relational, and identity needs.
3. Explain how the notion of a "process" fits into communication.
4. Discuss the ways in which communication is guided by culture and context.

Taking this course will change how you view communication. Most people admit that communication is important, but it's often in the back of our minds or viewed as something that "just happens." Putting communication at the front of your mind and becoming more aware of how you communicate can be informative and have many positive effects. When I first started studying communication as an undergraduate, I began seeing the concepts we learned in class in my everyday life. When I worked in groups, I was able to apply what I had learned about group communication to improve my performance and overall experience. I also noticed interpersonal concepts and theories as I communicated within various relationships. Whether I was analyzing mediated messages or considering the ethical implications of a decision before I made it, studying communication allowed me to see more of what was going on around me, which allowed me to more actively and competently participate in various communication contexts. In this section, as we learn the principles of communication, I encourage you to take note of aspects of communication that you haven't thought about before and begin to apply the principles of communication to various parts of your life.

Communication Is Integrated into All Parts of Our Lives

This book is meant to help people see the value of communication in the real world and in our real lives. When I say *real*, I don't mean to imply that there is some part of our world or lives that is not real. Since communication is such a practical field of study, I use the word *real* to emphasize that what you're reading in this book isn't just about theories and vocabulary or passing a test and giving a good speech. I also don't mean to imply that there is a divide between the classroom and the real world. The "real world" is whatever we are experiencing at any given moment. In order to explore how communication is integrated into all parts of our lives, I have divided up our lives into four spheres: academic, professional, personal, and civic. The boundaries and borders between these spheres are not solid, and there is much overlap. After all, much of what goes on in a classroom is present in a professional environment, and the classroom has long been seen as a place to prepare students to become active and responsible citizens in their civic lives. The philosophy behind this approach is called integrative learning, which encourages students to reflect on how the content they are learning connects to other classes they have taken or are taking, their professional goals, and their civic responsibilities.

Academic

It's probably not difficult to get you, as students in a communication class, to see the relevance of communication to your academic lives. At least during this semester, studying communication is important to earn a good grade in the class, right? Beyond the relevance to your grade in this class, I challenge you to try to make explicit connections between this course and courses you have taken before and are currently taking. Then, when you leave this class, I want you to connect the content in future classes back to what you learned here. If you can begin to see these connections now, you can build on the foundational communication skills you learn in here to become a more competent communicator, which will undoubtedly also benefit you as a student.

Good communication skills can help you succeed in academic settings and set you up for success postgraduation.

Aside from wanting to earn a good grade in this class, you may also be genuinely interested in becoming a better communicator. If that's the case, you are in luck because research shows that even people who have poor communication skills can improve a wide range of verbal, nonverbal, and interpersonal communication skills by taking introductory communication courses (Zabava & Wolvin, 1993). Communication skills are also tied to academic success. Poor listening skills were shown to contribute significantly to failure in a person's first year of college. Also, students who take a communication course report more confidence in their communication abilities, and these students have higher grade point averages and are less likely to drop out of school. Much of what we do in a classroom—whether it is the interpersonal interactions with our classmates and professor, individual or group presentations, or listening—is discussed in this textbook and can be used to build or add to a foundation of good communication skills and knowledge that can carry through to other contexts.

Professional

The National Association of Colleges and Employers has found that employers most desire good communication skills in the college graduates they may hire (National Association of Colleges and Employers, 2010). Desired communication skills vary from career to career, but again, this textbook provides a foundation onto which you can build communication skills specific to your major or field of study. Research has shown that introductory communication courses provide important skills necessary for functioning in entry-level jobs, including listening, writing, motivating/persuading, interpersonal skills, informational interviewing, and small-group problem solving (DiSalvo, 1980). Interpersonal communication skills are also highly sought after by potential employers, consistently ranking in the top ten in national surveys (National Association of Colleges and Employers, 2010). Poor listening skills, lack of conciseness, and inability to give constructive feedback have been identified as potential communication challenges in professional contexts. Employers appreciate good listening skills and the ability to communicate concisely because efficiency and clarity are often directly tied to productivity and success in terms of profit or task/project completion. Despite the well-documented need for communication skills in the professional world, many students still resist taking communication classes. Perhaps people think they already have good communication skills or can improve their skills on their own. While either of these may be true for some, studying communication can only help. In such a competitive job market, being able to document that you have received communication instruction and training from communication professionals (the faculty in your communication department) can give you the edge needed to stand out from other applicants or employees.

Personal

While many students know from personal experience and from the prevalence of communication counseling on television talk shows and in self-help books that communication forms, maintains, and ends our interpersonal relationships, they do not know the extent to which that occurs. I am certain that when we get to the interpersonal communication chapters in this textbook that you will be intrigued and maybe even excited by the relevance and practicality of the concepts and theories discussed there. My students often remark that they already know from experience much of what’s discussed in the interpersonal unit of the course. While we do learn from experience, until we learn specific vocabulary and develop foundational knowledge of communication concepts and theories, we do not have the tools needed to make sense of these experiences. Just having a vocabulary to name the communication phenomena in our lives increases our ability to consciously alter our communication to achieve our goals, avoid miscommunication, and analyze and learn from our inevitable mistakes. Once we get further into the book, I am sure the personal implications of communication will become very clear.

Civic

The connection between communication and our civic lives is a little more abstract and difficult for students to understand. Many younger people don't yet have a conception of a "civic" part of their lives because the academic, professional, and personal parts of their lives have so much more daily relevance. Civic engagement refers to working to make a difference in our communities by improving the quality of life of community members; raising awareness about social, cultural, or political issues; or participating in a wide variety of political and nonpolitical processes (Ehrlich, 2000). The civic part of our lives is developed through engagement with the decision making that goes on in our society at the small-group, local, state, regional, national, or international level. Such involvement ranges from serving on a neighborhood advisory board to sending an e-mail to a US senator. Discussions and decisions that affect our communities happen around us all the time, but it takes time and effort to become a part of that process. Doing so, however, allows us to become a part of groups or causes that are meaningful to us, which enables us to work for the common good. This type of civic engagement is crucial to the functioning of a democratic society.

Voting is one way to stay civically engaged, but you can also participate in decision making in nonpolitical contexts.

Communication scholars have been aware of the connections between communication and a person's civic engagement or citizenship for thousands of years. Aristotle, who wrote the first and most influential comprehensive book on communication 2,400 years ago, taught that it is through our voice, our ability to communicate, that we engage with the world around us, participate in our society, and become a "virtuous citizen." It is a well-established and unfortunate fact that younger people, between the ages of eighteen and thirty, are some of the least politically active and engaged members of our democracy. Civic engagement includes but goes beyond political engagement, which includes things like choosing a political party or advocating for a presidential candidate. Although younger people have tended not to be as politically engaged as other age groups, the current generation of sixteen- to twenty-nine-year-olds, known as the millennial generation, is known to be very engaged in volunteerism and community service. In addition, some research has indicated that college students are eager for civic engagement but are not finding the resources they need on their campuses (Jaschik, 2012). The American Association of Colleges and Universities has launched several initiatives and compiled many resources for students and faculty regarding civic engagement. I encourage you to explore their website at the following link and try to identify some ways in which you can productively integrate what you are learning in this class into a civic context: http://www.aacu.org/resources/civicengagement.

Communication Meets Needs

You hopefully now see that communication is far more than the transmission of information. The exchange of messages and information is important for many reasons, but it is not enough to meet the various needs we have as human beings. While the content of our communication may help us achieve certain physical and instrumental needs, it also feeds into our identities and relationships in ways that far exceed the content of what we say.

Physical Needs

Physical needs include needs that keep our bodies and minds functioning. Communication, which we most often associate with our brain, mouth, eyes, and ears, actually has many more connections to and effects on our physical body and well-being. At the most basic level, communication can alert others that our physical needs are not being met. Even babies cry when they are hungry or sick to alert their caregiver of these physical needs. Asking a friend if you can stay at their house because you got evicted or kicked out of your own place will help you meet your physical need for shelter. There are also strong ties between the social function of communication and our physical and psychological health. Human beings are social creatures, which makes communication important for our survival. In fact, prolonged isolation has been shown to severely damage a human (Williams & Zadro, 2001). Aside from surviving, communication skills can also help us thrive. People with good interpersonal communication skills are better able to adapt to stress and have less depression and anxiety (Hargie, 2011). Communication can also be therapeutic, which can lessen or prevent physical problems. A research study found that spouses of suicide or accidental death victims who did not communicate about the death with their friends were more likely to have health problems such as weight change and headaches than those who did talk with friends (Greene, Derlega, & Mathews, 2006). Satisfying physical needs is essential for our physical functioning and survival. But, in order to socially function and thrive, we must also meet instrumental, relational, and identity needs.

Instrumental Needs

Instrumental needs include needs that help us get things done in our day-to-day lives and achieve short- and long-term goals. We all have short- and long-term goals that we work on every day. Fulfilling these goals is an ongoing communicative task, which means we spend much of our time communicating for instrumental needs. Some common instrumental needs include influencing others, getting information we need, or getting support (Burleson, Metts, & Kirch, 2000). In short, communication that meets our instrumental needs helps us "get things done."

Communicating for instrumental needs helps us get things done. Think about how much instrumental communication is required to build a house.

Sandia Labs – Habitat for Humanity Build-A-Thon – CC BY-NC-ND 2.0.

To meet instrumental needs, we often use communication strategically. Politicians, parents, bosses, and friends use communication to influence others in order to accomplish goals and meet needs. There is a research area within communication that examines compliance-gaining communication, or communication aimed at getting people to do something or act in a particular way (Gass & Seiter, 1999). Compliance gaining and communicating for instrumental needs is different from coercion, which forces or manipulates people into doing what you want. In Section 1.3 "Communication Principles", we will discuss communication ethics and learn that open communication, free from constraint and pressure, is an important part of an ethical society. Compliance-gaining communication is different from persuasion, which we will discuss in more detail in Chapter 11 "Informative and Persuasive Speaking". While research on persuasion typically focuses on public speaking and how a speaker persuades a group, compliance-gaining research focuses on our daily interpersonal interactions. Researchers have identified many tactics that people typically use in compliance-gaining communication (Gass & Seiter, 1999). As you read through the following list, I am sure many of these tactics will be familiar to you.

Common Tactics Used for Compliance Gaining

- **Offering rewards.** Seeks compliance in a positive way, by promising returns, rewards, or generally positive outcomes.
- **Threatening punishment.** Seeks compliance in a negative way, by threatening negative consequences such as loss of privileges, grounding, or legal action.
- **Using expertise.** Seeks compliance by implying that one person "knows better" than the other based on experience, age, education, or intelligence.
- **Liking.** Seeks compliance by acting friendly and helpful to get the other person into a good mood before asking them to do something.
- **Debt.** Seeks compliance by calling in past favors and indicating that one person "owes" the other.
- **Altruism.** Seeks compliance by claiming that one person only wants "what is best" for the other and he or she is looking out for the other person's "best interests."
- **Esteem.** Seeks compliance by claiming that other people will think more highly of the person if he or she complies or think less of the person if he or she does not comply.

Relational Needs

Relational needs include needs that help us maintain social bonds and interpersonal relationships. Communicating to fill our instrumental needs helps us function on many levels, but communicating for relational needs helps us achieve the social relating that is an essential part of being human. Communication meets our relational needs by giving us a tool through which to develop, maintain, and end relationships. In order to develop a relationship, we may use nonverbal communication to assess whether someone is interested in talking to us or not, then use verbal communication to strike up a conversation. Then, through the mutual process of self-disclosure, a relationship forms over time. Once formed, we need to maintain a relationship, so we use communication to express our continued liking of someone. We can verbally say things like "You're such a great friend" or engage in behaviors that communicate our investment in the relationship, like organizing a birthday party. Although our relationships vary in terms of closeness and intimacy, all individuals have relational needs and all relationships require maintenance. Finally, communication or the lack of it helps us end relationships. We may communicate our deteriorating commitment to a relationship by avoiding communication with someone, verbally criticizing him or her, or explicitly ending a relationship. From spending time together, to checking in with relational partners by text, social media, or face-to-face, to celebrating accomplishments, to providing support during difficult times, communication forms the building blocks of our relationships. Communicating for relational needs isn't always positive though. Some people's "relational needs" are negative, unethical, or even illegal. Although we may feel the "need" to be passive aggressive or controlling, these communicative patterns are not positive and can hurt our relationships. In Chapter 6 "Interpersonal Communication Processes" and Chapter 7 "Communication in Relationships", we will explore the "dark side" of communication in more detail.

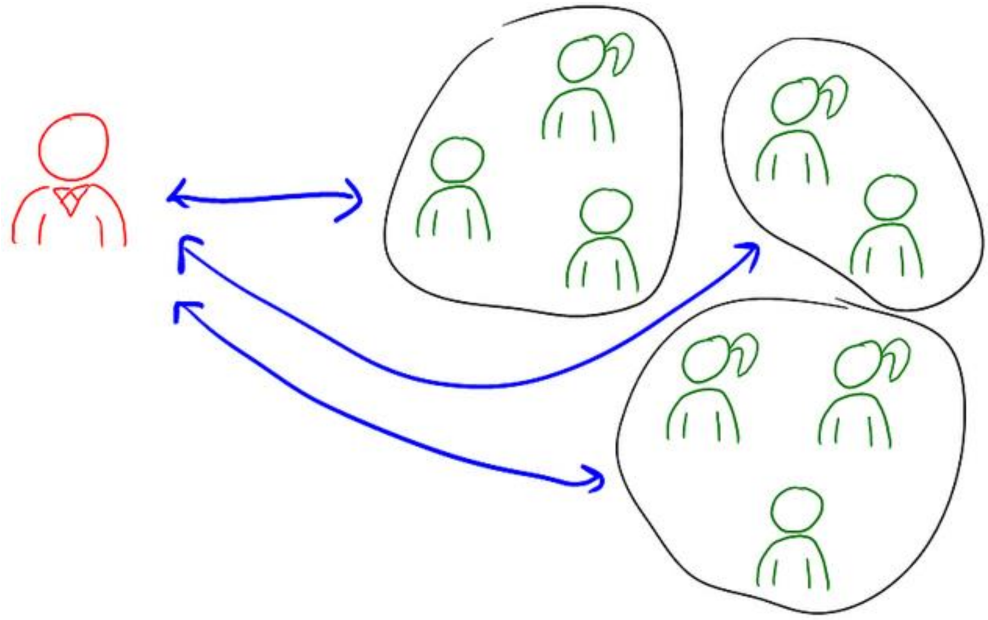
Identity Needs

Identity needs include our need to present ourselves to others and be thought of in particular and desired ways. What adjectives would you use to describe yourself? Are you funny, smart, loyal, or quirky? Your answer isn't just based on who you think you are, since much of how we think of ourselves is based on our communication with other people. Our identity changes as we progress through life, but communication is the primary means of establishing our identity and fulfilling our identity needs. Communication allows us to present ourselves to others in particular ways. Just as many companies, celebrities, and politicians create a public image, we desire to present different faces in different contexts. The influential scholar Erving Goffman compared self-presentation to a performance and suggested we all perform different roles in different contexts (Goffman, 1959). Indeed, competent communicators can successfully manage how others perceive them by adapting to situations and contexts. A parent may perform the role of stern head of household, supportive shoulder to cry on, or hip and culturally aware friend based on the situation they are in with their child. A newly hired employee may initially perform the role of motivated and agreeable coworker but later perform more leadership behaviors after being promoted. We will learn more about the different faces we present to the world and how we develop our self-concepts through interactions with others in Chapter 2 "Communication and Perception".

Communication Is a Process

Communication is a process that involves an interchange of verbal and/or nonverbal messages within a continuous and dynamic sequence of events (Hargie, 2011). When we refer to communication as a process, we imply that it doesn't have a distinct beginning and end or follow a predetermined sequence of events. It can be difficult to trace the origin of a communication encounter, since communication doesn't always follow a neat and discernible format, which makes studying communication interactions or phenomena difficult. Any time we pull one part of the process out for study or closer examination, we artificially "freeze" the process in order to examine it, which is not something that is possible when communicating in real life. But sometimes scholars want to isolate a particular stage in the process in order to gain insight by studying, for example, feedback or eye contact. Doing that changes the very process itself, and by the time you have examined a particular stage or component of the process, the entire process may have changed. These snapshots are useful for scholarly interrogation of the communication process, and they can also help us evaluate our own communication practices, troubleshoot a problematic encounter we had, or slow things down to account for various contexts before we engage in communication (Dance & Larson, 1976).

We have already learned, in the transaction model of communication, that we communicate using multiple channels and send and receive messages simultaneously. There are also messages and other stimuli around us that we never actually perceive because we can only attend to so much information at one time. The dynamic nature of communication allows us to examine some principles of communication that are related to its processual nature. Next, we will learn that communication messages vary in terms of their level of conscious thought and intention, communication is irreversible, and communication is unrepeatable.



Since communication is such a dynamic process, it is difficult to determine where communication begins and ends.

Mathieu Plourde – Instructor to Groups – CC BY 2.0.

Some scholars have put forth definitions of communication stating that messages must be intended for others to perceive them in order for a message to "count" as communication. This narrow definition only includes messages that are tailored or at least targeted to a particular person or group and excludes any communication that is involuntary (Dance & Larson, 1976). Since intrapersonal communication happens in our heads and isn't intended for others to perceive, it wouldn't be considered communication. But imagine the following scenario: You and I are riding on a bus and you are sitting across from me. As I sit thinking about a stressful week ahead, I wrinkle up my forehead, shake my head, and put my head in my hands. Upon seeing this you think, "That guy must be pretty stressed out." In this scenario, did communication take place? If I really didn't intend for anyone to see the nonverbal communication that went along with my intrapersonal communication, then this definition would say no. But even though words weren't exchanged, you still generated meaning from the communication I was unintentionally sending. As a communication scholar, I do not take such a narrow definition of communication. Based on the definition of communication from the beginning of this chapter, the scenario we just discussed would count as communication, but the scenario illustrates the point that communication messages are sent both intentionally and unintentionally.

Communication messages also vary in terms of the amount of conscious thought that goes into their creation. In general, we can say that intentional communication usually includes more conscious thought and unintentional communication usually includes less. For example, some communication is reactionary and almost completely involuntary. We often scream when we are frightened, say "ouch!" when we stub our toe, and stare blankly when we are bored. This isn't the richest type of communication, but it *is* communication. Some of our interactions are slightly more substantial and include more conscious thought but are still very routine. For example, we say "excuse me" when we need to get past someone, say "thank you" when someone holds the door for us, or say "what's up?" to our neighbor we pass every day in the hall. The reactionary and routine types of communication just discussed are common, but the messages most studied by communication scholars are considered constructed communication. These messages include more conscious thought and intention than reactionary or routine messages and often go beyond information exchange to also meet relational and identity needs. As we will learn later on, a higher degree of conscious thought and intention doesn't necessarily mean the communication will be effective, understood, or ethical. In addition, ethical communicators cannot avoid responsibility for the effects of what they say by claiming they didn't "intend" for their communication to cause an undesired effect. Communication has short- and long-term effects, which illustrates the next principle we will discuss—communication is irreversible.

The dynamic nature of the communication process also means that communication is irreversible. After an initial interaction has gone wrong, characters in sitcoms and romantic comedies often use the line "Can we just start over?" As handy as it would be to be able to turn the clock back and "redo" a failed or embarrassing communication encounter, it is impossible. Miscommunication can occur regardless of the degree of conscious thought and intention put into a message. For example, if David tells a joke that offends his coworker Beth, then he can't just say, "Oh, forget I said that," or "I didn't intend for it to be offensive." The message has been sent and it can't be taken back. I'm sure we have all wished we could take something back that we have said. Conversely, when communication goes well, we often wish we could recreate it. However, in addition to communication being irreversible, it is also unrepeatable.

If you try to recreate a good job interview experience by asking the same questions and telling the same stories about yourself, you can't expect the same results. Even trying to repeat a communication encounter with the same person won't feel the same or lead to the same results. We have already learned the influence that contexts have on communication, and those contexts change frequently. Even if the words and actions stay the same, the physical, psychological, social, relational, and cultural contexts will vary and ultimately change the communication encounter. Have you ever tried to recount a funny or interesting experience to a friend who doesn't really seem that impressed? These "I guess you had to be there" moments illustrate the fact that communication is unrepeatable.

Communication Is Guided by Culture and Context

As we learned earlier, context is a dynamic component of the communication process. Culture and context also influence how we perceive and define communication. Western culture tends to put more value on senders than receivers and on the content rather the context of a message. These cultural values are reflected in our definitions and models of communication. As we will learn in later chapters, cultures vary in terms of having a more individualistic or more collectivistic cultural orientation. The United States is considered an individualistic culture, where emphasis is put on individual expression and success. Japan is considered a collectivistic culture, where emphasis is put on group cohesion and harmony. These are strong cultural values that are embedded in how we learn to communicate. In many collectivistic cultures, there is more emphasis placed on silence and nonverbal context. Whether in the United States, Japan, or another country, people are socialized from birth to communication in culturally specific ways that vary by context. In this section we will discuss how communication is learned, the rules and norms that influence how we communicate, and the ethical implications of communication.

Communication Is Learned

Most people are born with the capacity and ability to communicate, but everyone communicates differently. This is because communication is learned rather than innate. As we have already seen, communication patterns are relative to the context and culture in which one is communicating, and many cultures have distinct languages consisting of symbols.

A key principle of communication is that it is symbolic. Communication is symbolic in that the words that make up our language systems do not directly correspond to something in reality. Instead, they stand in for or symbolize something. The fact that communication varies so much among people, contexts, and cultures illustrates the principle that meaning is not inherent in the words we use. For example, let's say you go to France on vacation and see the word *poisson* on the menu. Unless you know how to read French, you will not know that the symbol is the same as the English symbol *fish*. Those two words don't look the same at all, yet they symbolize the same object. If you went by how the word looks alone, you might think that the

French word for fish is more like the English word *poison* and avoid choosing that for your dinner. Putting a picture of a fish on a menu would definitely help a foreign tourist understand what they are ordering, since the picture is an actual representation of the object rather than a symbol for it.

All symbolic communication is learned, negotiated, and dynamic. We know that the letters *b-o-o-k* refer to a bound object with multiple written pages. We also know that the letters *t-r-u-c-k* refer to a vehicle with a bed in the back for hauling things. But if we learned in school that the letters *t-r-u-c-k* referred to a bound object with written pages and *b-o-o-k* referred to a vehicle with a bed in the back, then that would make just as much sense, because the letters don't actually refer to the object and the word itself only has the meaning that we assign to it. We will learn more, in Chapter 3 "Verbal Communication", about how language works, but communication is more than the words we use.

We are all socialized into different languages, but we also speak different "languages" based on the situation we are in. For example, in some cultures it is considered inappropriate to talk about family or health issues in public, but it wouldn't be odd to overhear people in a small town grocery store in the United States talking about their children or their upcoming surgery. There are some communication patterns shared by very large numbers of people and some that are particular to a dyad—best friends, for example, who have their own inside terminology and expressions that wouldn't make sense to anyone else. These examples aren't on the same scale as differing languages, but they still indicate that communication is learned. They also illustrate how rules and norms influence how we communicate.

Rules and Norms

Earlier we learned about the transaction model of communication and the powerful influence that social context and the roles and norms associated with social context have on our communication. Whether verbal or nonverbal, mediated or interpersonal, our communication is guided by rules and norms.

Phatic communion is an instructive example of how we communicate under the influence of rules and norms (Senft, 2009). Phatic communion refers to scripted and routine verbal interactions that are intended to establish social bonds rather than actually exchange meaning. When you pass your professor in the hall, the exchange may go as follows:

Student:
"Hey, how are you?"

Professor:
"Fine, how are you?"

Student:
"Fine."

What is the point of this interaction? It surely isn't to actually inquire as to each other's well-being. We have similar phatic interactions when we make comments on the weather or the fact that it's Monday. We often joke about phatic communion because we see that is pointless, at least on the surface. The student and professor might as well just pass each other in the hall and say the following to each other:

Student:
"Generic greeting question."

Professor:
"Generic greeting response and question."

Student:
"Generic response."

This is an example of communication messages that don't really require a high level of conscious thought or convey much actual content or generate much meaning. So if phatic communion is so "pointless," why do we do it?

Rules and norms guide much of our communication. Think of all the unspoken norms for behavior in a crowded elevator.

The term *phatic communion* derives from the Greek word *phatos*, which means "spoken," and the word *communion*, which means "connection or bond." As we discussed earlier, communication helps us meet our relational needs. In addition to finding communion through food or religion, we also find communion through our words. But the degree to which and in what circumstances we engage in phatic communion is also influenced by norms and rules. Generally, US Americans find silence in social interactions awkward, which is one sociocultural norm that leads to phatic communion, because we fill the silence with pointless words to meet the social norm. It is also a norm to greet people when you encounter them, especially if you know them. We all know not to unload our physical and mental burdens on the person who asks, "How are you?" or go through our "to do" list with the person who asks, "What's up?" Instead, we conform to social norms through this routine type of verbal exchange.

Phatic communion, like most aspects of communication we will learn about, is culturally relative as well. While most cultures engage in phatic communion, the topics of and occasions for phatic communion vary. Scripts for greetings in the United States are common, but scripts for leaving may be more common in another culture. Asking about someone's well-being may be acceptable phatic communion in one culture, and asking about the health of someone's family may be more common in another.

Communication Has Ethical Implications

Another culturally and situationally relative principle of communication is the fact that communication has ethical implications. Communication ethics deals with the process of negotiating and reflecting on our actions and communication regarding what we believe to be right and wrong. Aristotle said, "In the arena of human life the honors and rewards fall to those who show their good qualities in action" (Pearson et al., 2006). Aristotle focuses on actions, which is an important part of communication ethics. While ethics has been studied as a part of philosophy since the time of Aristotle, only more recently has it become applied. In communication ethics, we are more concerned with the decisions people make about what is right and wrong than the systems, philosophies, or religions that inform those decisions. Much of ethics is gray area. Although we talk about making decisions in terms of what is right and what is wrong, the choice is rarely that simple. Aristotle goes on to say that we should act "to the right extent, at the right time, with the right motive, and in the right way." This quote connects to communication competence, which focuses on communicating effectively and appropriately and will be discussed more in Section 1.4 "Communication Competence".

Ethics deals with our beliefs about what is right and wrong, but the choice is often not as clear-cut.

Justin Baeder – That Way – CC BY 2.0.

Communication has broad ethical implications. Later in this book we will discuss the importance of ethical listening, how to avoid plagiarism, how to present evidence ethically, and how to apply ethical standards to mass media and social media. These are just a few examples of how communication and ethics will be discussed in this book, but hopefully you can already see that communication ethics is integrated into academic, professional, personal, and civic contexts.

When dealing with communication ethics, it's difficult to state that something is 100 percent ethical or unethical. I tell my students that we all make choices daily that are more ethical or less ethical, and we may confidently make a decision only later to learn that it wasn't be most ethical option. In such cases, our ethics and goodwill are tested, since in any given situation multiple options may seem appropriate, but we can only choose one. If, in a situation, we make a decision and we reflect on it and realize we could have made a more ethical choice, does that make us a bad person? While many behaviors can be more easily labeled as ethical or unethical, communication isn't always as clear. Murdering someone is generally thought of as unethical and illegal, but many instances of hurtful speech, or even what some would consider hate speech, have been protected as free speech. This shows the complicated relationship between protected speech, ethical speech, and the law. In some cases, people see it as their ethical duty to communicate information that they feel is in the public's best interest. The people behind WikiLeaks, for example, have released thousands of classified documents related to wars, intelligence gathering, and diplomatic communication. WikiLeaks claims that exposing this information keeps politicians and leaders accountable and keeps the public informed, but government officials claim the release of the information should be considered a criminal act. Both parties consider the other's communication unethical and their own communication ethical. Who is right?

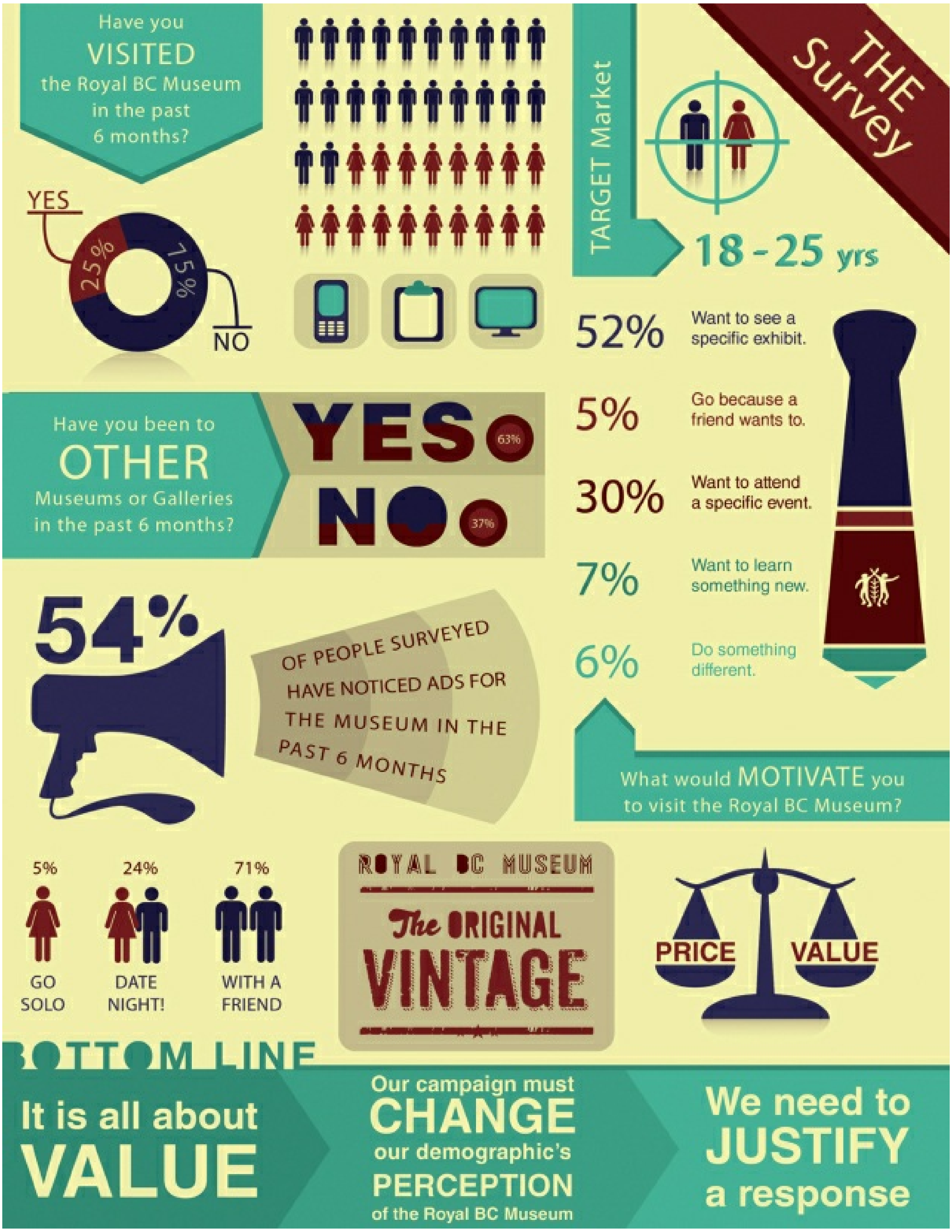
Since many of the choices we make when it comes to ethics are situational, contextual, and personal, various professional fields have developed codes of ethics to help guide members through areas that might otherwise be gray or uncertain. The following "Getting Critical" box includes information about the National Communication Association's Ethical Credo. Doctors take oaths to do no harm to their patients, and journalists follow ethical guidelines that promote objectivity and provide for the protection of sources. Although businesses and corporations have gotten much attention for high-profile cases of unethical behavior, business ethics has become an important part of the curriculum in many business schools, and more companies are adopting ethical guidelines for their employees.

Why Don’t You? Museum Infographic

museumsaskew.com/2013/06/14/why-dont-you-museum-infographic/

Katie Bowell

June 14, 2013



How do you share your museum's data? Charts? Lists? Memos? Newsletters? Why don't you **turn all that delightful data into an infographic** and…

- Organize your information in **logical** and **attention-grabbing** ways
- **Simplify** how you define and describe yourself
- Embrace **color**!
- Share the **results** of a survey in a new way
- **Market** an upcoming event or exhibit
- Put it in an exhibit, inviting your audience **focus on images** instead of words (we already know they don't like to read labels…)
- Use the medium to **showcase your personality**
- Include **unexpected** data. Comment card trends? The most popular (and most random!) visitor questions? The number of visitors from Gary, Indiana?
- **Embrace** the logical next step. After all, what were cave paintings and heiroglyphics if not beta-infographics?

Royal BC Museum Infographic by Care2Design

#PROTECTING LONDON

WELCOME TO PROTECTING LONDON

How are London's most iconic buildings protected? What are the biggest challenges in keeping them safe and secure?

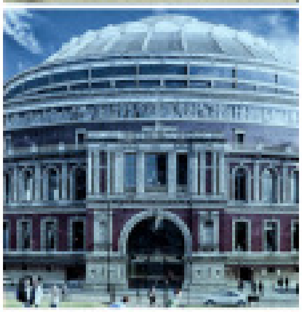
Protecting London is a behind-the-scenes exploration of how the capital's most famous buildings operate.

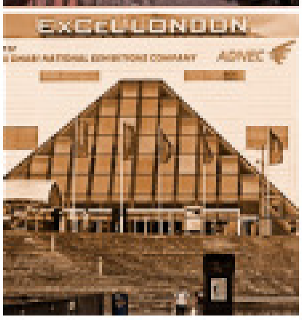
This download summarises a series of interviews exploring how security, safety, facilities and fire functions operate together in some of the capitol's most fascinating landmarks.

Learn how six million visitors are kept safe at the British Museum each year (page 3), facilities management within the19th century Grade 1 listed venue the Royal Albert Hall (page 5), how Crossrail team protect the 10,000 workers in Europe's largest construction site (page 11), and the unique security challenges presented by the ExCeL London's 100 acre estate (page 19).

You can find more about each of these buildings by watching online videos to accompany these interviews.

We hope that you find this report useful. Please let us know your feedback and any topics you'll like us to cover in future reports by following the link here.





Charlotte Wright,
Senior Content Manager, Protection & Management

THE BRITISH MUSEUM

KEEPING 6 MILLION VISITORS SAFE AT THE UK'S LARGEST TOURIST ATTRACTION

Founded in 1753, The British Museum granted free admission to all 'studious and curious persons' and the number of people visiting the museum has risen from 5,000 per year in the 18th Century to a staggering 6 million today. Faced with that kind of footfall and taking into account that the various buildings of the museum hail from different eras, the safety, security and facilities challenges are numerous.

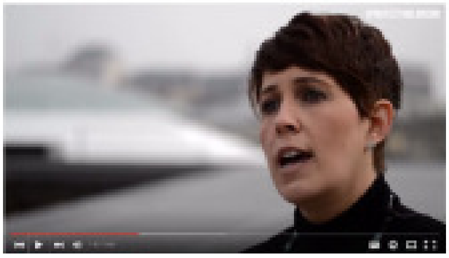
At 75,000m², the museum covers a vast area (equal to nine football pitches), and it's is home to Grade 1 listed building, around 8 million objects as well as galleries, labs, stores rooms and research centres. Its most recent addition is the World Conservation and Exhibition Centre, an ambitious project, which, after three and a half years of construction, was opened to the public in 2014.

Protecting London speaks to Health & Safety Manager, Maria Anderson, about the creation of the World Conservation and Exhibition Centre, which took years in the planning stage.

"It was a complex building to design… we have the labs, we have the open space, the exhibition gallery and we have the collection management."

In order to keep a project like this on track, Maria says they had to engage with all the staff involved, "we asked what they

WATCH THE EPISODE ►



> "IT WAS A COMPLEX BUILDING TO DESIGN… WE HAVE THE LABS, WE HAVE THE OPEN SPACE, THE EXHIBITION GALLERY AND WE HAVE THE COLLECTION MANAGEMENT."

►

wanted – and how the building should be built for their needs… During construction there were open visits. We had visit tours for staff so they could actually see the progress of the construction phase."

One of the biggest challenges they came up against during the construction project was having staff move into the new building whilst contractors continued to work on unfinished spaces. Doors needed to be left open for the workers on the site and at the same time, members of the public had to be prevented from gaining access. It was such a complex project, in fact, that it's what Maria describes as 'the biggest challenge of making this building operational'.

Re-iterating the importance of communication, Maria explains how regular updates were issued to directors and trustees as well as to project managers and staff on site. "Even the people in the old site need to be aware of what was happening, because this is an extension to the old building," she says. "This is really about planning and communication."

Incorporating 21st century technology into a building parts of which date from the 1850s is another challenge Maria highlights for the Grade 1 listed building. Swipe card technology has been introduced to the museum and they have what she describes as 'top of the range security.' Fire safety systems are also top of the range; there's an alarm and detection system as well as controlled mist in the collection areas.

Outside of the recent construction project, Maria explains how the different fire, safety and facilities teams work together under the same directive. "We share meetings, we share projects. Ultimately we have the same objective of keeping everybody safe, not just secure... This is a great example of where all four disciplines [fire, security, health and safety and facilities] really work together. Through regular meetings and sharing progress we all work to the same objectives." ■

OVER
1,000
ACROSS THE WHOLE ESTATE

RE-USED
RAINWATER
IN LABS AND TOILETS

"THIS IS A GREAT EXAMPLE OF WHERE ALL FOUR DISCIPLINES [FIRE, SECURITY, HEALTH AND SAFETY AND FACILITIES] REALLY WORK TOGETHER."

ROYAL ALBERT HALL

BEHIND THE SCENES OF THE WORLD-FAMOUS GRADE 1 LISTED CONCERT VENUE

Episode two takes us to the Royal Albert Hall, where Director of Operations, Amanda Squires, gives us an insight into facilities management in the 19th century, grade 1 listed building.

Amanda's team consists of over 290 front-of-house and back-of-house delivery staff, which includes facilities management. Together, they were responsible for about 850 events in 2014; 397 in the main auditorium and 450 in other parts of the Hall. This is a remarkable number considering there was a total of about 350 events per year taking place when Amanda first joined in 2004.

The "explosion in activities" being held at the Hall is what Amanda singles out as the biggest challenge she's had to deal with in her time at the Hall. "When I joined, it was pretty much an evening-only event venue and now we're open to the public all through the day, we have a café bar and an Italian restaurant which are open to non-ticket holders all of the time."

WATCH THE EPISODE ►

"WHEN I JOINED, IT WAS PRETTY MUCH AN EVENING-ONLY EVENT VENUE AND NOW WE'RE OPEN TO THE PUBLIC ALL THROUGH THE DAY, WE HAVE A CAFÉ BAR AND AN ITALIAN RESTAURANT WHICH ARE OPEN TO NON-TICKET HOLDERS ALL OF THE TIME." ►

And it's not just concerts they host, but also sports matches, film premieres, conferences and school events. In Amanda's words, "it's like an entirely different building every single day".

FACILITIES MANAGEMENT

Because of the sheer number of events taking place at the Hall every week, Amanda's team have had to 'find new and creative ways to manage the facilities in the building'. A lot of the facilities management team's work is done overnight because it's the only time there's full access to the building. Although, with shows and technology are becoming increasingly complex, event organisers want to load in earlier and load out later "so even our night time periods are getting a little bit squeezed", Amanda says

To give an idea of what they're up against...

- 100 towels washed almost every night of the year
- 3941 lightbulbs replaced in the last year
- 345 litres of paint used annually touching up paintwork
- 100 tins of paint used on stage during the BBC Proms season
- 24/7 cleaning, with the majority overnight
- 18 month steam heating removal project carried out overnight
- 150 intelligent (moving) show lights owned by the Hall
- 60 people working 20 hours continuously needed to build the exhibition floor

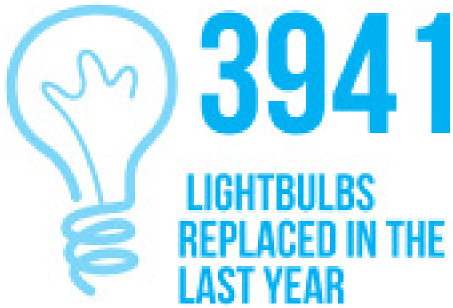
And impressively, 0% of waste goes to landfill.

With so much activity on a daily basis, there's little time for maintenance work. So, after the busiest 12 month period in the Royal Albert Hall's history, a maintenance week was squeezed in between shows in September 2014, during which time

- Floorboards were replaced
- The exterior of the building was jet-washed
- Tier boxes were given a lick of paint
- Handrails were spray painted
- Rigging equipment in the ceiling was checked

While maintenance is one thing, structural changes are another; a lot of careful consideration is required because it's a magnificent, grade 1 listed building. "It needs to be visually unobtrusive and obviously for anything that affects the look or

> "IT NEEDS TO BE VISUALLY UNOBTRUSIVE AND OBVIOUSLY FOR ANYTHING THAT AFFECTS THE LOOK OR STRUCTURE OR FABRIC OF THE BUILDING, WE HAVE TO SEEK HERITAGE APPROVAL. IT'S SOMETHING THAT'S ALWAYS AT THE TOP OF OUR MINDS."



structure or fabric of the building, we have to seek Heritage approval. It's something that's always at the top of our minds."

HEALTH & SAFETY

Every event can bring different performers, production teams, promoters, and security staff through the doors, which means there might be over 100 different people working in the building every day; in 2014 over 1085 permits to work were authorised.

When asked about the biggest health and safety challenges at the Royal Albert Hall, Amanda highlights managing contractors who service the building and equipment. She stresses the importance of "making sure they are well controlled and supervised, we know who's going to be working where and exactly what they're going to be doing".

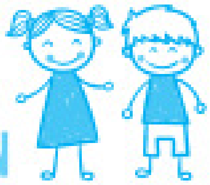
With this level of activity, it's essential that clients understand house rules and submit risk assessments and method statements well in advance of an event. "It's very much about communicating and trying to get a lot of information before the day of the event and on the day briefings", Amanda says.

Health and safety forms must be submitted at least four weeks prior to an event, and assessments and methods at least two weeks prior, and the forms, along with a lot of the Royal Albert Hall's health and safety policies, can be found on their website. Here are 10 excerpts from the publicly available 'Event Safety Information for Visiting Companies' download.

1. **First aid:** All of our Security Staff are first aid trained. During public access periods this is further supplemented by one or more qualified nurses or paramedics from our medical provider. With large numbers of children additional first aiders are required.

2. **Slip and trip hazards:** Cables crossing walkways and main performance thoroughfares must be secured or covered, and if necessary clearly marked to prevent the possibly of slips and trips occurring or damaging equipment.

"IT'S VERY MUCH ABOUT COMMUNICATING AND TRYING TO GET A LOT OF INFORMATION BEFORE THE DAY OF THE EVENT AND ON THE DAY BRIEFINGS"



WITH LARGE NUMBERS OF CHILDREN ADDITIONAL FIRST AIDERS ARE REQUIRED

10,000

SAFETY INFORMATION CARDS PROVIDED TO CONTRACTORS LAST YEAR

3. **Control of Substances Hazardous to Health (COSHH):** All contractors should carry detailed information on any hazardous substances or activities that may give rise to hazardous substances within the Hall. Prior approval will be required from the Hall.

4. **Pyrotechnics, smoke effects, firearms and the use of naked flame:** Any use of any special effects including dry ice, pyrotechnics, firearms and naked flames must be essential to the performance and be notified to the Hall as soon as possible, but at least four weeks before the event, in order for the Event Manager to arrange the permissions required from WCC.

5. **Laser safety:** The use of any laser must be deemed to be essential to the performance and details (such as power output) notified to the Hall at least four weeks in advance of your event.

6. **Work at height:** All work at height should be subject to a specific risk assessment... Methods of rescue must also be considered as part of this assessment... The proposed methods should be communicated with the TSM responsible for the show in advance.

7. **Electrical safety:** The connection and disconnection of power supplies to contractor's equipment may only be undertaken through Technical Show Managers.

8. **Hardhat policy:** A mandatory hard hat area will be declared in the auditorium whenever there is work being carried out overhead. This will be notified by flashing orange beacons and signage in the back of stage areas, in and around the auditorium, and by tannoy announcement.

9. **Hot works:** Any work involving 'hot' processes such as welding will require a permit to work issued by Stage Door. This will require certain additional precautions to be undertaken to avoid the possibility of fire.

A MANDATORY HARD HAT AREA WILL BE DECLARED IN THE AUDITORIUM WHENEVER THERE IS WORK BEING CARRIED OUT OVERHEAD.

THE HALL MUST HAVE 4 WEEKS NOTICE ON ANY **SPECIAL EFFECTS**

HARD HATS MUST BE WORN DURING THE LOAD IN AND LOAD OUT OF EVENTS

10. **LPG and Flammable Gases:** LPG i.e. butane and propane is not permitted for cooking nor for use in special effects due to the nature of the building and its unusual design.

SECURITY

Many of the Hall's events bring world-famous performers through the doors. In the past year, the likes of Coldplay, Status Quo and Lang Lang have all graced the stage, adding to the Hall's star-studded roster of performers. And it's not just musicians you'll see on the calendar – the venue also hosts sports events, film premieres and talks, which have introduced audiences to Nelson Mandela, The Dalai Lama, Professor Stephen Hawking and Bill Clinton amongst countless others.

"Some of the very, very high profile events can be very, very difficult from a security perspective", Amanda tells us, and thanks to a huge amount of planning and close collaboration with the police, the security team controls a tight ship.

All events, even those without the added challenges of high profile performers, are subject to "very robust security assessments". Amanda says "for most events, the security measures that we put in place may be very unobtrusive, they may not be seen by most of the people that come to the hall".

But as the events become more high profile, security measures are ramped up and it's not unusual to see dog teams search the building, search arches go up and roads being closed.

Amanda uses to Gorbachev's 80th birthday gala, which was held in 2011, to illustrate the challenges her team can come across with high profile events.

"We had high profile VIPs from around the world, each with their own security detail, each with very much their own ideas of what their level of personal security should be." Again, she tells us about the importance of working closely with the police, as well as other agencies who all worked to robust security plans.

"There were some very difficult meetings, some very long meetings, and a lot of what I would term assertive diplomacy to make sure that the event ran smoothly."

"WE HAD HIGH PROFILE VIPS FROM AROUND THE WORLD, EACH WITH THEIR OWN SECURITY DETAIL, EACH WITH VERY MUCH THEIR OWN IDEAS OF WHAT THEIR LEVEL OF PERSONAL SECURITY SHOULD BE."

There is an entirely different type of security request they get from VIPs too... "Sometimes the security challenge can be down to a very high profile person who doesn't want anybody to know that they're coming to the building or that they've been here"; something which the Royal Albert Hall security team are highly experienced at facilitating.

"SOMETIMES THE SECURITY CHALLENGE CAN BE DOWN TO A VERY HIGH PROFILE PERSON WHO DOESN'T WANT ANYBODY TO KNOW THAT THEY'RE COMING TO THE BUILDING OR THAT THEY'VE BEEN HERE"

COLLABORATION BETWEEN FACILITIES, SECURITY AND SAFETY

It wasn't always the case that all of operations fell under one person, but now that they do, facilities, security, safety and the rest of the team work very collaboratively. With this organisational set-up, Amanda tells us it's much easier to manage the daily operations and facilities management of the building.

"It is really very important, and I've found here that it's been incredibly successful to have all of the key facilities, security areas integrated, and that I think has given us huge benefits."

CROSSRAIL

SECURITY, FIRE PROTECTION AND HEALTH & SAFETY AT EUROPE'S LARGEST CONSTRUCTION PROJECT

Crossrail is Europe's largest construction project, employing over 10,000 people and 340 apprentices. Together, this enormous team is building 42km of tunnels, constructing 10 new stations, and excavating 8 million tonnes of earth – that's enough to fill Wembley Stadium four times over.

The goal they're all working towards is December 2018 – the date stations are due to open. When that happens, the capacity of London's rail network will increase by 10% capacity and journey times across the city will be drastically reduced.

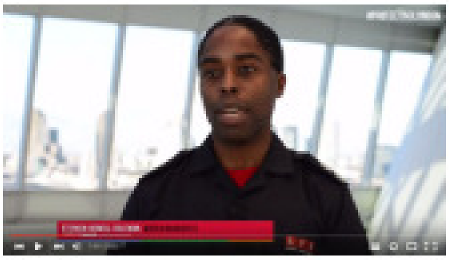
WORKS MANAGEMENT

An impressive 92% of demolition and construction waste is being reused, with the majority of excavated material transported to Wallasea Island in Essex to create a new RSPB nature reserve. 62 million working hours have been completed on the project and there are still four years to go until the final stations are due to open; one of which is Farringdon.

Works Manager for the busy Farringdon site is Sean Melody. Having successfully completed contracts on the Tottenham Court Road station upgrade and the London 2012 Olympics, he brings a wealth of experience to the role and tells us about some of his biggest challenges in facilities management.

When the railway is up and running, over 140 trains will flow through it per hour, making Farringdon one of country's busiest

WATCH THE EPISODES ►



AN IMPRESSIVE 92% OF DEMOLITION AND CONSTRUCTION WASTE IS BEING REUSED

train stations. It's also the only station where passengers will be able to access Thameslink, Crossrail and London Underground services.

Like many Crossrail sites, construction is carried out 24/7 at Farringdon and around 700 people are based there. As Works Manager, Sean Melody has to manage the complex rota system and keep the site a clean, inhabitable place to work. "Most of my challenges as part of my role as Works Manager are looking after the welfare facilities", Sean tells us.

They have 6-8 cleaners, whose shifts are staggered with the rest of the workforce so that when any construction group starts a shift they enter a clean environment. Sean also has to make sure shift patterns don't overload facilities.

"The problem on these projects is we have enough space to have people onsite, but we never have enough space to have them onsite all at the same time… So, one of the challenges going forward is to look at fit-out, and how to alter the shift pattern to make sure there's enough room for everybody to change, and have enough canteen facilities."

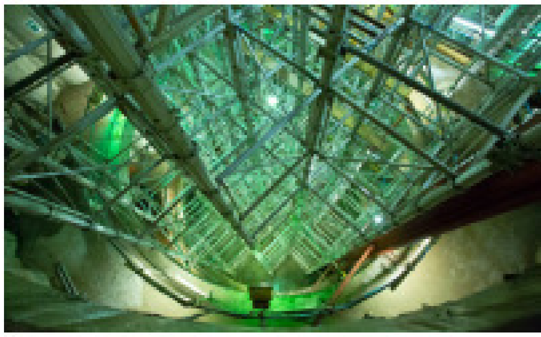
And it's not just facilities onsite Sean has to consider – hundreds of affordable homes have to be found in London to accommodate the large Farringdon workforce too.

Sean's remit also oversees security; he has to make sure guards are on rota, turnstiles are secure, the perimeter is secure and it's safe both for workers onsite and the public using the adjoining operating railway. So, good communication with the security team is essential, as is close collaboration with many other teams who impact facilities onsite.

SECURITY

It's on the Farringdon site that we meet Crossrail Security Manager, David Buck who also has plenty of experience under his belt; he spent 30 years in the police force and several years managing security on other construction projects, including London 2012 Olympic Park.

"THE PROBLEM ON THESE PROJECTS IS WE HAVE ENOUGH SPACE TO HAVE PEOPLE ONSITE, BUT WE NEVER HAVE ENOUGH SPACE TO HAVE THEM ONSITE ALL AT THE SAME TIME"



His Crossrail responsibility spans all central section sites, where contractors provide a security manager, a security provider and guards (the number of which varies from site to site). And no matter where he's working, David's mantra is always the same: 'Physical, electronic, back it up with the guarding.'

Physical security measures David points out at Farringdon are the hoarding, gates and entry points – 'the locks and bolts of how sites are secured'. He shows us a PTZ (pan, tilt and zoom) camera which is set on a patrol and monitored by guards. There are also discrete cameras that give a view of hoarding lines.

He then explains the electronic system of access control, which, in this case, includes a hand biometric for access through turnstiles and a zoning system, which means those who need easy access to work areas have it, whilst others are restricted.

Supporting the final part of the mantra are guards, who man the front of house, look after the access control system, monitor CCTV, engage with the logistics operation and do patrols.

But it's not just the security managers, providers and guards who are responsible for security at Crossrail. When asked 'how many people onsite at Farringdon are responsible for security?' David's answer is 'everybody'.

'If an operative sees an open gate and nobody there I would expect him at the very least to close that gate and report it... We are a team. And not only are we in a team within Crossrail, but we're in a team with the contractors and individual guys as well... It's about working together.'

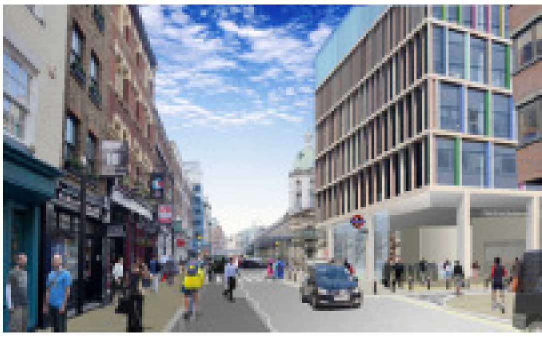
At the same time, security teams take responsibility for health & safety and work closely with deliveries teams for mutual benefit too. 'Our lorries have to meet a standard and the drivers are trained. Now that's primarily a health & safety, logistical operation, but I get quite a lot of security benefits from that because we know who's coming and when they're coming.'

Access control is another measure which equally benefits security and health & safety. 'We want to restrict access in the site as to who can go where. The office workers don't really have a need to go beyond the office so that turnstile which takes people down into the work areas will be zoned. So your card will allow you through the front door and will get you into the offices but if you don't need to go any further you won't be able to use it on one of these turnstiles. And that's, again, a health & safety benefit, but it's a security benefit as well.'

Working adjacent to operating railways is a challenge they face at several of the sites. Being in such close proximity means they encounter people want to get off the railway to avoid revenue.

'But', David explains, "our measures then provoke a response, they're intercepted. The health & safety training will kick in, they'll be transported off site safely, and they won't be allowed to travel somewhere where it's unsafe, either through excavations or moving parts. We will also then call the police, they will attend and deal with them as they see fit."

"OUR MEASURES THEN PROVOKE A RESPONSE, THEY'RE INTERCEPTED. THE HEALTH & SAFETY TRAINING WILL KICK IN, THEY'LL BE TRANSPORTED OFF SITE SAFELY, AND THEY WON'T BE ALLOWED TO TRAVEL SOMEWHERE WHERE IT'S UNSAFE."



The same applies for protestors who might climb over hoardings in an attempt to reach tower cranes – a traditional target for opportunists wanting to hang banners from lofty heights. So protect the cranes (and anyone attempting to climb them), bases are secured with hoardings and a gate. Fortunately, David adds, trespassing has been a rare occurrence on Crossrail sites.

Plant theft is a familiar concern in the construction industry, so now plant is registered and various covert marking schemes are used for tagging equipment. 'But the issue', David says, 'is not so much the larger pieces of equipment you see here in this environment, but the smaller types of equipment like jet washes, which are more easily moveable.'

'If you want to move that [points to a large digger] I'm not saying it couldn't be done, and I'm sure they have lost cranes like that, but certainly not from a Crossrail site. Because the logistics in moving that crane are quite difficult, and this site tends to be [operating] 24/7.... The smaller items, the jet washes, maybe small fuel tanks and generators, which are still on wheels, are more vulnerable because they can be moved around'.

To mitigate the risk of this kind of equipment being stolen there's a strict processes around sign-out sheets, and as with a lot of the security measures, it relies heavily on processes, rather than 'big lumpy cameras and big butch guards.'

With the London on a high state of alert, Crossrail engages closely with the Metropolitan Police and the City of London Police to mitigate terrorist activity. Staff receive counter-terrorism awareness briefings as well as document awareness training for spotting ID and passport forgeries. There's also a strict pre-employment screening process and all guards must be licensed by the SIA (Security Industry Authority).

Personal safety training is on offer to those that require it, David explains. "So if they're working in areas of London where they might not feel safe travelling to and from work out of hours, or we have lone working, we can offer training and advice and certain equipment to support them perform in those roles."

> "SO IF THEY'RE WORKING IN AREAS OF LONDON WHERE THEY MIGHT NOT FEEL SAFE TRAVELLING TO AND FROM WORK OUT OF HOURS, OR WE HAVE LONE WORKING, WE CAN OFFER TRAINING AND ADVICE AND CERTAIN EQUIPMENT TO SUPPORT THEM PERFORM IN THOSE ROLES."

Security by Design is another key to mitigating terrorist incidents. While it's not something David has personally overseen, he tells things like glass fragmentation, blast impacts and hostile vehicle mitigation measures have all been taken into consideration in the design process.

FIRE SAFETY

Next up we speak to Stephen Remell-Coleman, who is Watch Manager B with the Fire Brigade and also Transport Liaison Officer seconded on to the Crossrail project. Stephen carries our fire assurance assessments across all Crossrail sites in the London area and his role has been created specifically for fire mitigation. He feeds back directly to the London Fire Brigade and individual station managers, who then send their crews to look at individual sites.

We ask Stephen about fire safety during construction, and he breaks it down into three stages.

- Stage 1 - Holes in the ground and tunnels are dug.
- Stage 2 - Mechanical and electrical planning is carried out.
- Stage 3 – The running rail is tested.

And it's stage two, he tells us, which carries the most fire risks, "because that's where you have all of the fire loading and flammable materials".

When Stephen first started the fire assurance assessments, he found with temporary ('hacky') stairs used up and down the shafts weren't necessarily fire-rated for working at a height. "For me that was a big no-no. That's your first point of access."

So a report was put together, which went through relevant channels and since then all the fire rated netting and all the hacky stairs are fire-rated.

"The second you walk onto the sites, you get a flavour for what sort of things you're going to expect, because you'll look at their signage, their muster points... We want to look for access egress. And we're looking for fire-fighter water that we can use to safely put out a fire."

"THE SECOND YOU WALK ONTO THE SITES, YOU GET A FLAVOUR FOR WHAT SORT OF THINGS YOU'RE GOING TO EXPECT, BECAUSE YOU'LL LOOK AT THEIR SIGNAGE, THEIR MUSTER POINTS... WE WANT TO LOOK FOR ACCESS EGRESS. AND WE'RE LOOKING FOR FIRE-FIGHTER WATER THAT WE CAN USE TO SAFELY PUT OUT A FIRE."

During fire assurance assessments Stephen talks to fire wardens to make sure they completely understand their duties.

In the event of an incident wardens must go from floor to floor, clearing people out and prioritising anyone who's immobile or sight/hearing impaired. They'll be required to give a register to the London Fire Brigade Incident Commander, who then works out whether anyone inside who needs rescuing.

Some fire wardens are also responsible for making sure fire extinguishers are within test date.

HEALTH & SAFETY

Finally, we go deep underground to meet Health & Safety Director, Steve Hails. He tells us the core principle, number one value of Crossail is Health & Safety and their philosophy is 'Target Zero' - a belief that everyone has the right to go home unharmed, all harm is preventable, and everyone has to work together for this to be achieved.

Attaining Target Zero requires close relationships between all Crossrail staff and contractors, as well as absolute cooperation between the various disciplines, from design through to build and hand-over to the operating railway. "Collaboration is vitally important to make sure that we have success... If we don't work together we will fail", Steve says.

"COLLABORATION IS VITALLY IMPORTANT TO MAKE SURE THAT WE HAVE SUCCESS... IF WE DON'T WORK TOGETHER WE WILL FAIL"

To engage the workforce in Target Zero, each April and October 'Stepping Up Week' takes place. During those weeks every site delivers its own programme of health & safety activities and they've been incredibly successful – "it's almost become part of the language at Crossrail", Steve says.

Another effective health & safety initiative at Crossrail is HSPI; the Health & Safety Performance Index. This was introduced as a mechanism for reporting health & safety, measured by effort/input and effectiveness of activities. "It focuses on what we call the leading indicators, so the proactive elements that can influence strong health & safety performance and generate world-class performance."

HSPI enables contractors to see exactly how well they're performing and assess where they can improve. It's led to friendly competition amongst workers, who strive for best performance scores, and there's been a 65% improvement in scores over the past two years. The wider infrastructure industry has also taken interest and HSPI could form the base of a common industry standard.

Despite Crossrail's world-leading Health & Safety measures, one member of the team, Rene Tkacik, sadly lost his life in a work-related accident on the 7th March 2014. "It was a tragic time for everyone involved in Crossrail. Our thoughts are still with Rene's friends and family and colleagues", Steve explains.

Collectively it was decided that the loss of Rene would give the rest of the team even greater resolve to achieve Target Zero, as opposed to detracting from what they were trying to achieve.

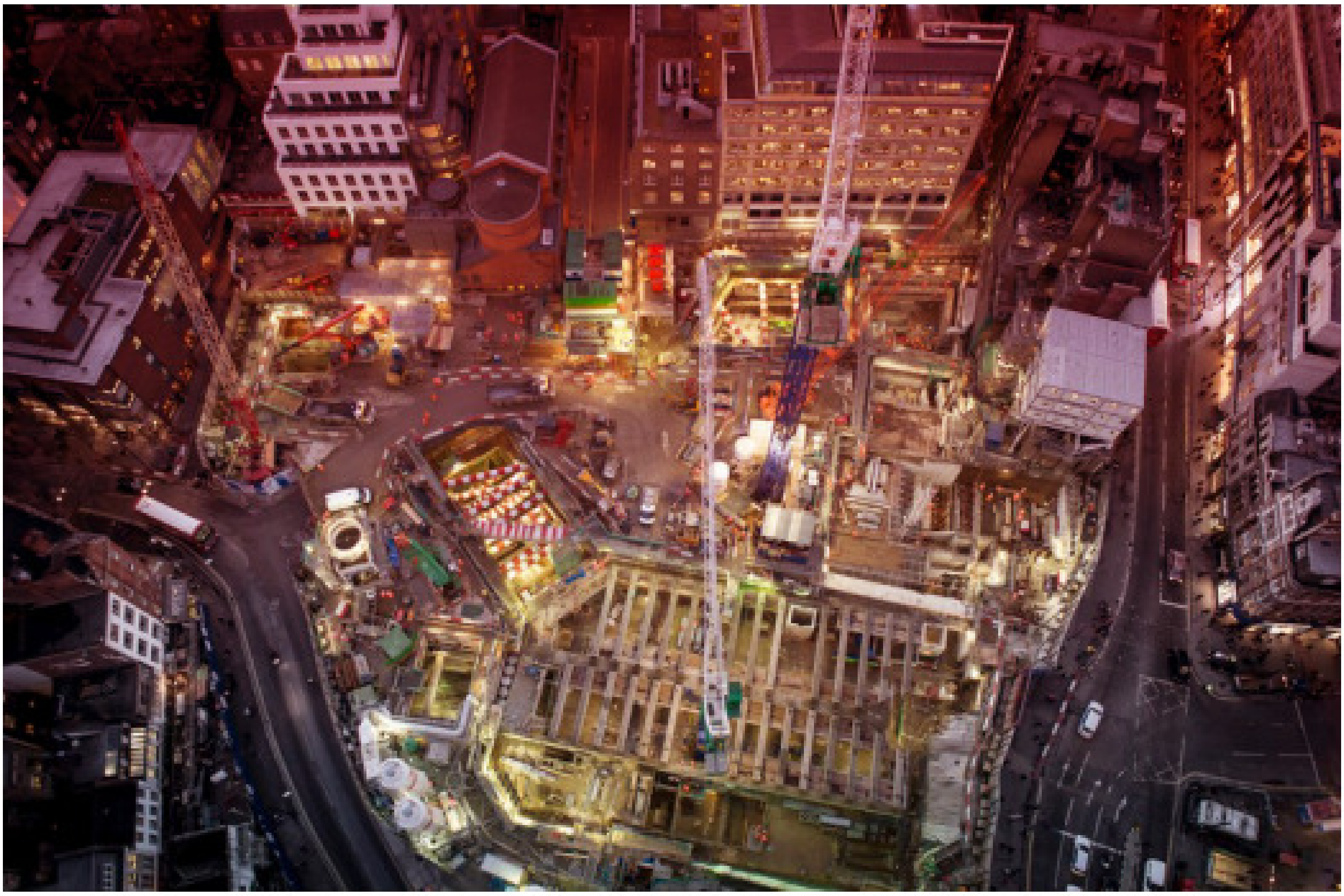
"Everything we do going forward, is in memory of Rene." Having benefited from the experiences of past infrastructure projects, Crossrail is committed to set the tone of future infrastructure projects and leave behind a legacy of world-class health & safety.

"We took an awful lot of best practice that came from London 2012, and that became our baseline, our benchmark, and then we built on that. So we said we are going to raise the bar, and it's a condition of the contract."

The Crossrail team have already started working with HS2 and the Thames Tideway tunnel, sharing what's worked, what hasn't worked well and what they'd do differently if they had their time again.

"This is a fantastic infrastructure project, it's Europe's largest, and as a result you can see on a day-to-day basis how individuals want to make this the safest job. The things they're coming up with, the innovations are vitally important for us now and will be shared for generations to come, for our legacy."

"THIS IS A FANTASTIC INFRASTRUCTURE PROJECT, IT'S EUROPE'S LARGEST, AND AS A RESULT YOU CAN SEE ON A DAY-TO-DAY BASIS HOW INDIVIDUALS WANT TO MAKE THIS THE SAFEST JOB."



ExCeL LONDON

PROTECTING AND MANAGING THE 100 ACRE CENTRAL LONDON ESTATE

ExCeL London is a conference, exhibitions and events international convention centre in the London Docklands situated between Canary Wharf and London City Airport.

Opened to the public in 2000, the multi-purpose venue covers 100,000 square metres and can fit more than 68,000 visitors at any one time.

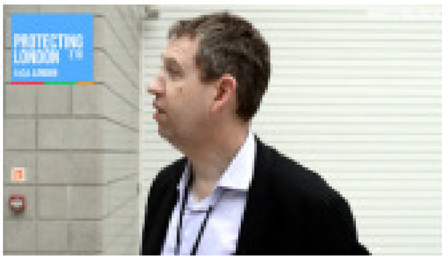
It's home to hundreds of events through the year that range from large exhibitions such as the Protection & Management series to intimate weddings, dramatic film sets, school exams and big sports competitions.

ESTATES

Looking after the ExCeL London's 100 acre estate is the responsibility of Geoff Conaghan. As well as the exhibition centre, the site includes several apartments, six hotels (including one on a permanently moored yacht), a DLR station and a Crossrail construction site. There are also lawns and a pond which need tending to and keeping clean.

Geoff tells us about his daily routine, which starts each morning with a walk or drive around the perimeter. If the security team alert him to any issues that need attending to, like hoarding falling down for example, he will go and investigate whilst also keeping a look out for anything else might need his attention.

WATCH THE EPISODE ►



IF TENANTS WANT TO HAVE WORK DONE ON THEIR PROPERTIES OR IF THEY'RE MOVING, GEOFF WILL GET INVOLVED

The rest of his day will then depend on activities taking place on the grounds. So, if tenants want to have work done on their properties or if they're moving, Geoff will get involved and help with authorisation. If there's a loose slab which needs to be fixing or a dangerous area which needs to be cordoned off, Geoff will be on it. If there's a film crew onsite carrying out complex stunts, Geoff will be there to make sure everything runs smoothly.

He works closely with London Underground and Docklands Light Railway to increase the frequency of trains during busy show periods; an essential job as over 80% of visitors currently get to the venue by public transport.

Another large part of Geoff's role now and for the next few years is managing the ExCel's relationship with the Crossrail team, who have three constructions sites within the grounds.

Crossrail, which is the largest infrastructure project in Europe, expects to have lines up and running by 2018, and the new Custom House station will reduce journey times from the ExCel to Heathrow to around 43 minutes and to central London to just 10 minutes.

Geoff his extremely enthusiastic about the project and tell us seeing it out will be a big personal achievement; 'It's been brilliant being part of it', he says. And his work doesn't stop once the station opens – when the operating railway moves in, Geoff will be the main point of contact for his new tenants.

CUSTOM HOUSE STATION WILL REDUCE JOURNEY TIMES FROM THE EXCEL TO HEATHROW TO AROUND 43 MINUTES AND TO CENTRAL LONDON TO JUST 10 MINUTES.

BUILDING MANAGEMENT

Nigel Bishop oversees a team of engineers and together they manage facilities for events. This includes water, gas, electric, heating, and fabric as well as general maintenance. 'When the building's quiet it's our opportunity to get in', Nigel says. The difficulty is, the building is rarely quiet.

One of the most recent improvement projects in Building Management was in lighting. Philips GentleSpace high-bay LED luminaires have been introduced throughout the venue, significantly reducing carbon emissions and improved the quality of the lighting. Each small light in the halls can be controlled individually, so a client can sit at a control desk with the event manager and decide which modulation those lights are set to. They can be dimmed from 100% all the way to 1%, or off completely. The team are also replacing a lot of individual speakers at the moment, which will improve sound quality of announcements and music in the boulevard during noisy show periods.

UNDER CDM, A PHASED BUILD PHASE PLAN WILL NEED TO BE DONE FOR EVERY SHOW, AND THE TEMPLATE WAS FOR IT WAS SENT TO HSE FOR APPROVAL EARLIER THIS YEAR.

An interesting feature, and one that you might not notice unless it was pointed out to you, is an intelligent central section of the ceiling in the Boulevard. It's controlled by temperature sensors and opens to let in fresh air, closes when it rains and when it comes to fire safety it can also open to let out smoke detected. Last year ExCeL recycled 60% of its waste and converted 40% to energy. As a result, zero waste was sent to landfill. Furthermore, the venue was awarded a 'C' rating on its EPBD Display Energy Certificate which means they are 30% more energy efficient than other buildings of similar type and usage.

SAFETY

Matt Constance is responsible for the health & safety of staff, clients and visitors, which requires a lot of communication different stakeholders. He attends planning meetings with clients in advance of events, and he then meets them again during build-up to ensure all stands are constructed safely.

'My remit is to do tours of the halls. I do tours during build up and break down. I'm checking for safe systems of work. I work closely with building services and the helpdesk. During tours of the venue itself any repairs that are noticed/any part of the fabric that needs repairing, I report that back to building services.'

CDM has changed a lot of their processes at ExCel London and Matt was well-prepared have the for the introduction of the regulations, having spent 2 years collaborating with event industry associations to assess impact. 'Helpful things they've come up with for event organisers are organograms, which is essentially like a flow chart which shows how it will fit with existing management systems', Matts says. Under CDM, a phased build phase plan will need to be done for every show, and the template was for it was sent to HSE for approval earlier this year.

FIRE SAFETY

Fire safety is the role of Ian Tynan, who is responsible for checking emergency lighting, ensuring the public address system is ready in case of an evacuation, confirming correct staffing levels in fire safety, making sure all the organising teams and venue staff are all up-to-date with ExCel London's emergency procedures, checking sprinklers, servicing all the portable fire extinguishers, checking all the lorry ways and boulevard shutters open and close properly, making sure emergency lighting is working and of course responding to any alarms.
Naturally, Ian works closely with the Health & Safety team, but he also has to liaise very closely with the cleaning department, because during exhibition build-ups and break-downs there can be rubbish which causes a fire hazard.

When we ask Ian about his typical working week, he says it's difficult to describe because different events can have completely different priorities, so parts of his job change on a weekly basis.

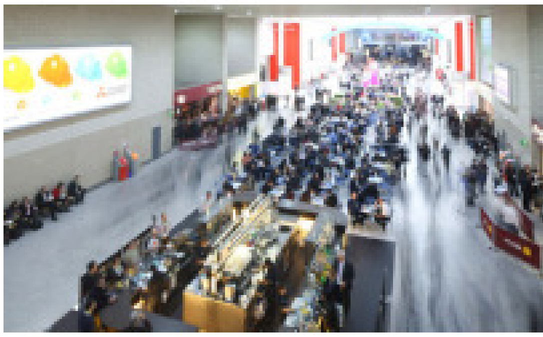
Ian tells us about one exhibition which has a crèche, so the priority there is to evacuate young children first in the case of an emergency. Film shoots also bring unique requirements, sometimes using pyrotechnics. And for conferences, crowd safety and crowd movement is a bigger issue than at exhibitions, for example, because if there's a lunch break everyone will come out into the boulevard at the same time. Some events will also create small conference rooms by draping off areas of the halls, so in those circumstances Ian may need to make sure that if all the lights were to fail, emergency lighting would be visible.

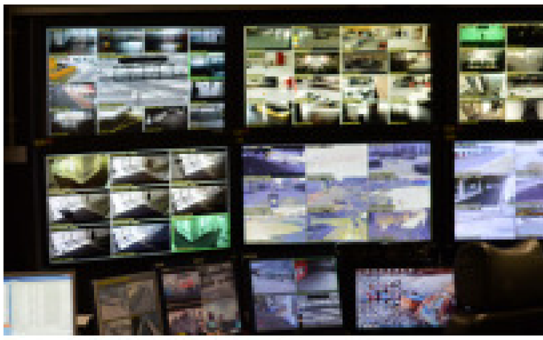
Ian points to the number and diversity of events he manages as the biggest challenge of his role. 'Doing the fire safety at such a large exhibition centre, the main challenge I would say is just the sheer amount of events that you can have in any one time.'

SECURITY

Americo Abreu is manager of the security team, with responsibility for assessing possible threats, ensure there's

CROWD SAFETY AND CROWD MOVEMENT IS A BIGGER ISSUE THAN AT EXHIBITIONS





sufficient manpower onsite and keep colleagues informed of any threats or incidents.

The team work shifts so the site can be secured 24/7, and they are split into three teams. Each team has a leader based in the control room, along with a controller who operates the systems and patrolling officers, one of whom is responsible for emergency response.

All the fire phones within the venue go through to the security control room where there's a 3-4 minute window for response before there's an evacuation. When there is a call, a fire officer will be deployed to the area with immediate effect in order to investigate.

Different events bring with them different security threats, so Americo attends clients' planning meetings and engages with the authorities so he has as much information about risks as possible.

Each event is threat assessed through collaboration between the ExCel, organisers and the authorities. Due to the UK terror threat reaching a severe level there was a change in the way threat assessments are conducted and while the UK threat level is determined by third-party intelligence the venue threat level is determined by the ExCel security team.

It's not just the venue that Americo is responsible for, but also the 100 acre estate. He regularly meets with staff from the hotels to discuss crime figures and possible threats and to ensure effective communication they recently started a crime prevention group called Newham Dockside Hotel Watch. 'Sharing information is very important to mitigate risks and minimise crimes onsite', Americo tells us.

EACH EVENT IS THREAT ASSESSED THROUGH COLLABORATION BETWEEN THE EXCEL, ORGANISERS AND THE AUTHORITIES.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แบบฝึกหัดส่วนที่ 1

1. จงอธิบายทฤษฎี Flipped Classroom โดยสังเขป
2. หลักการของ Ubiquitous Learning มีความสำคัญอย่างไรกับการออกแบบนิทรรศการ
3. Social Network คืออะไร มีผลกระทบอย่างไรกับการออกแบบนิทรรศการ
4. มนุษย์ในยุคเริ่มแรกใช้สิ่งใดเพื่อติดต่อสื่อสาร
5. จงยกตัวอย่างและอธิบายพิพิธภัณฑ์ที่ท่านเคยไปมา 2 แห่ง

The Proposal Writing Guide:
How to Write a Winning Thesis Proposal

Excepts from an article about how to write a thesis proposal — written by Dr. Wendy Carter for *FinishLine*, the free monthly newsletter of TA-DA!™, which provides tips, tools, and techniques for completing a thesis or dissertation

When I was in graduate school I spent a lot of time going to workshops on *how to write a thesis proposal*. None helped me jumpstart the thesis proposal writing process. Usually after a workshop I felt more overwhelmed than I did before attending.

Looking at sample thesis proposals in my discipline gave me some ideas, but did not motivate me to get started. It wasn't until I found a wonderful book called *The Proposal Cookbook: A Step by Step Guide to Dissertation and Thesis Proposal Writing* by J. Bruce Francis, that I felt confident to begin writing my thesis proposal. This book is out of print, so I have summarized some of its suggestions for you here.

Before we start, here's a thesis writing tip

A thesis proposal is generally written in the present and future tense. A thesis on the other hand is always written in past tense.

The following tips assume that you already have a thesis topic selected.

13 Ingredients of a Winning Thesis Proposal

1. Introduction (1-2 pages)

If you are required to write an introduction, write it so it captures the reader's interest in this overview. It does not have to be perfect.

You can write this section last. Your best overview of you project most likely will come after you have written the other sections of your proposal.

2. Problem Statement

First formulate a research question. Next restate the question in the form of a statement: note the adverse consequences of the problem.

The type of study determines the kinds of question you should formulate, such as Is there something wrong in society, theoretically unclear or in dispute, or historically worth studying? Is there a program, drug, project, or product that needs evaluation? What do you intend to create or produce and how will it be

Give at least three reasons why the problem you have chosen is important to you and society, *and* specify at least two concrete examples of the problem.

4. Purpose

Begin with *"The purpose of this study is to…"* change, interpret, understand, evaluate, or analyze the problem.

State your thesis goal completely. Remember, it should be some form of investigative activity.

5. Significance

Focus on the benefits of your study not the research problem.

Place yourself in the position of responding to someone who says "so what?" Provide a persuasive rationale for your argument by answering the following questions: Why is your study important? To whom is it important**?** What can happen to society, or theory, or a program if the study is done or not done?

6. Methodology

Describe in technical language your research perspective and your past, present, or possible future points of view.

List three research methodologies you could use, and describe why each might be appropriate and feasible. Select the most viable method.

7. Literature Review

Locate and briefly describe those studies and theories that support and oppose your approach to the problem. In other words, place the proposed study in context through a critical analysis of selected research reports.

Be sure to include alternative methodological approaches that have been used by others who studied your problem.

8. Hypotheses

State clearly and succinctly what you expect the results of your study to show.

might confuse the reader.

State the clearest definition of each term using synonyms, analogies, descriptions, examples etc. Define any theoretical terms as they are defined by proponents of the theory you are using.

10. Assumptions

Describe untested and un-testable positions, basic values, world views, or beliefs that are assumed in your study.

Your examination should extend to your methodological assumptions, such as the attitude you have toward different analytic approaches and data-gathering methods. Make the reader aware of your own biases.

11. Scope & Limitations

Disclose any conceptual and methodological limitations

Use the following questions to identify the limitations of your study: What kind of design, sampling, measurement, and analysis would be used "in the best of all possible worlds"? How far from these ideals is your study likely to be?

12. Procedure

Describe in detail all the steps you will carry out to choose subjects, construct variables, develop hypotheses, gather and present data, such that another researcher could replicate your work.

Remember the presentation of data never speaks for itself, it must be interpreted.

13. Long-Range Consequences

Think ahead approximately three years after the completion of your thesis project. What are the long-term consequences of your having done the study or not done the study**?**

If you carry out the study successfully your results will: confirm your hypothesis; contradict your hypothesis; or possibly be inconclusive.

Teamwork

When it comes to working in a team, not everyone's cut out for it. But the reality is, teamwork is one of the most vital competencies in most forms of employment and without it companies tend to fail.

Even if you role seems highly independent and you perform most of it remotely or alone, you'll still need to communicate with others about what you've done, and understand why you're doing it in the context of the organisation as a whole.

Because of this, interviewers will always test whether you have teamwork skills - and if you demonstrate a lack of these, or no such skills at all, you are unlikely to be successful. After all, who would want an employee who can't get along with others or has the tendency to spoil moods?

What Do Employers Mean by Teamwork?

Generally, employers mean the ability to work amicably with fellow employees in all kinds of situations and with empathy. Teamwork in essence requires not only people skills but also a sense of maturity, which allows the individual to think above petty misunderstandings that arise.

Teamwork involves helping other members of your team to achieve a common goal quickly and effectively. This does not mean that if you are in an interview you cannot use an example of you being a leader within a team. In fact, this is highly recommended, as you can demonstrate your leadership skills, so long as you don't portray yourself as arrogant.

Teamwork ability is one of the competencies employers are most interested in.

Why Are Teamwork Skills So Highly Valued?

Largely because teamwork skills have a dual benefit: a harmonious office environment plus more effective work. Teams that gel well are far more likely to impress clients, complete projects and seal deals. A company's reputation often rests on how competent the teams in it are perceived to be.

Types of Teamwork Skills

Teamwork involves a whole set of skills that can't easily be put under one heading. Below we've covered five different skill areas that are integral to a great team player.

Communication Skills

Team players need to be able to communicate verbally and using body language, on both emotional and intellectual levels, in a professional manner. Those who are effective at communication:

- Are able to explain their ideas
- Listen to others carefully and not always with an intent to reply
- Make efforts to express what their feelings are without sounding threatening
- Try to sense or understand how others feel, based on what they are saying or by their body language
- Ask questions whenever they want clarification or are uncertain about something
- Often reflect on events and interactions that took place and how things could have gone better (they try to learn from bad experiences)
- Avoid creating tension between others, and try to break tension rather than build on it

Support Skills

Team members can show support for one another in various ways: congratulating others in moments of achievement, or consoling in more trying times. It helps to look at other members of your team as collaborators rather than competitors. A huge part of support is the ability to respect one another.

Problem-Solving Skills

Certain problem-solving skills entail a level of wisdom and experience, whereas others are based on analytical prowess. In all cases they are concerned with the capacity to assess a given situation and arrive at a positive outcome.

In the context of teamwork, problem-solving skills are valued because employees are expected to develop solutions as a team to situations that threaten to escalate into something potentially serious.

Listening and Feedback Skills

To ensure proper feedback is given in the different situations you are exposed to with fellow employees, it's important to listen attentively. Clarifying what other team members mean, and taking interest in their problems, demonstrates that you care about them and their development.

Feedback can of course also be delivered via email; some things are better said in written form. With time and exposure to different scenarios, one picks up on which feedback mechanism would probably work best.

Conflict Management Skills

Conflict in the workplace is something all of us experience at some stage. How you deal with conflicts can potentially make or break your career.

Remember not to let your anger or frustration get the best of you. Ultimately you're trying to reach a solution that benefits the team generally, even if it puts a few individual noses out of joint.

Example Teamwork Competency Questions

Questions will vary depending on the competency that the interviewer is asking you to demonstrate, but for questions surrounding teamwork you will always need to use the STAR technique, which requires you to give an example of a situation during either your previous employment, education or extracurricular activities, explain what tasks you were faced with and how you overcame it.

Sample questions may include:

- What is your definition of a good team player?
- Do you consider yourself a good team player? Why or why not?
- Describe a situation where you were successful in getting people to work together effectively.
- A team member is annoying you on a daily basis and this is hampering your performance at work. How would you handle this situation?
- Describe a time when you were a member of a team and witnessed a conflict within the team. What did you do? What were the results? What could you have done better?
- What are some of your hobbies or extracurricular activities?
- Tell me about a time when you have had to modify yourself (or a way you did something) to take into account someone else's views.
- Tell me about a situation when you needed to offer constructive criticism to a friend or team member?

Tips and Examples for Answering Teamwork Questions

When it comes to answering teamwork questions, try to keep your answers grounded in real situations of which you have actual experience.

Timing

Many interviewees tend to either drag on with their answers, or make their answers too short due to nerves, meaning they miss out on key points or information relating to their answer. Try to ensure that your answers are between three and five minutes long and include only the most relevant information to your ability to work successfully within a team.

Situation

Try to make sure the situation you were in when describing your answer is as unique and as relevant as possible. The best situations will include positions where you were the leader of a team and listened to the other team members, then used their information and feedback to help develop your own situation.

This will show that not only can you work in a team effectively, but also that you are willing to listen to the feedback of others to improve your own work, something which is often difficult for others.

Another useful scenario is one where you resolved conflict with another team member. Ideally this will show how you resolved the conflict professionally without letting your emotions get the better of you, and without involving HR to resolve the matter for you.

Hobbies

Most examples you will use in answering teamwork questions will be from your extracurricular activities. This is because sports such as football or rugby demand teamwork and vigilance. Besides this, hobbies are useful to show your interviewer that you are not solely focused on work and have other interests.

If you are going to an interview which requires teamwork, WikiJob recommends practising aptitude tests prior to it, which will help you develop other skills.

Final Thoughts

A lot of people tend to think that teamwork skills are only excelled at by extroverts. While it may be true that extroverts can more easily mix with different people and verbally express themselves, in no way does this invalidate introverts. An introvert's ability to listen, to empathise and to reflect also form an essential part of a team's overall development and ability to thrive.

Teamwork skills can be mastered by all kinds of people, from all kinds of backgrounds, albeit some take longer than others. Teamwork skills are lifelong skills that need to be fine-tuned, improved and developed with experience.

What Are Milestones in Project Management?

Jan 25, 2018 | By Jason Westland in Gantt Charts, Project Management Software, Scheduling

A project milestone is a management tool that is used to delineate a point in a project schedule. These points can note the start and finish of a project, and mark the completion of a major phase of work. Milestones can be used to symbolize anything that has started or finished, though it's primarily used as a scheduling tool.

If a milestone focuses on major progress points in a project, you can see how it is useful in scheduling. Just as tasks break a larger project into manageable parts, milestones break off chunks of a project to make it less daunting.

So, when starting a project, milestones can help immensely with scheduling. Milestones are most commonly found in project management software, and are represented as diamonds in the Gantt chart feature. Gantt charts are a visual representation of your schedule, laid out on a timeline, with tasks as points along the path to the successful completion of the project. Milestones divide this timeline into project phases.

Scheduling with Milestones

Milestones provide a way to more accurately estimate the time it will take to complete your project, making them essential for precise project scheduling. They are often used in scheduling methodologies, such as the Critical Path Method, which can determine major scheduling periods. With milestones, you can better calculate the slack in your project by segmenting the project into intervals, or smaller timeframes to control.

Milestones are also a flexible tool for scheduling, and with some imagination, can do more than just act as signposts for project phases. Use milestones to remind yourself about project board meetings and other important events, such as requirement workshops. It's a great way to make sure everyone is aware of upcoming meetings.

Of course, milestones can indicate upcoming deadlines for anything related to the project, from deliverables that are due in other projects to impending deliveries from suppliers. And, of course, they are great at indicating the point when you transition to another state or phase of the project.

Milestones, like tasks, can be linked. That is when the phase of one milestone cannot begin until the completion of the phase before it. That way you're not blocking team members by having them wait or by not allowing them what they need to move forward with their tasks.

Track Your Progress with Milestones

Part of scheduling a project is being able to monitor and track the progress of that schedule in real-time. Milestones are a way to see how far you've come in the project. By noting the completed milestones, you can measure the distance you are from the finish line of a project.

This comes in handy when you are dealing with stakeholders. Stakeholders are not interested in a granular, detailed report on the project's progress. They want broad strokes that indicate whether or not the project is moving along as scheduled. Milestones are ideal for this kind of reporting because milestones show the major phases you've finished at this point in the project, according to your plan.

When you're presenting to stakeholders, you can show them the milestones you completed this month and the ones you're on track to complete for the coming month. Let them know if those milestones were reached as planned or if there were any delays. Don't hide the fact that you were late meeting a milestone. By being transparent, you give stakeholders a sense of where the project is. They will understand and appreciate your honesty, and trust your professionalism in managing the project.

Milestones Can be Fun!

While you'll mostly use milestones for the nuts and bolts of scheduling, they are also useful for celebrating project achievements. Obviously, once a milestone has been reached it's because the team has done something right, like completing a phase of the project or delivering something important. Why not use this opportunity to congratulate them?

Celebrate success in whatever manner is right for you and the project. It can be as simple as a handshake or a note to the team. Maybe you want to treat them to lunch or offer a bonus. Whatever the case, acknowledging their achievement pays off in dividends in the forms of employee retention, team loyalty and project buy-in. You're also fostering a positive relationship with your team and building trust, which is instrumental to a productive project.

Who knew milestones could make you happy? So, why not add a milestone at the end of the project to mark when you're going to have a lunch party or just a celebration of the completion of another successful project. The team will see this final milestone as an incentive to forge forward, and it will create more goodwill that you can bank for the next project when you work with the same team.

How to Use Milestones in Gantt Charts

When you're using project management software like ProjectManager.com, your milestones are added to the Gantt chart by adding the diamond icon to a point on the timeline. To create a milestone, pick the task on your schedule and change the property to a milestone. By hovering over the milestone icon, you can view its name.

To get the full advantages of milestones, you'll want a software that features an online Gantt chart. This interactive planning tool takes the complexity out of creating and editing a Gantt chart. When you're planning the project, just add the tasks and their duration, including the due date, and the Gantt chart will populate the timeline automatically.

With online project management software, you can easily assign tasks to your team and watch their progress as they move towards achieving project milestones. Gantt chart software also provides your team with a platform for collaboration. They can share updates and files, enabling dialogues at the task level. You can even set up automatic alerts to make sure milestones are met.

Reporting on milestones for stakeholders is also streamlined because you can view progress in real-time and, with your dashboard, turn that data into clear and colorful charts that can be shared however you see fit. Milestones have never been easier to use.

Milestones are just one of the many project management tools you get when using ProjectManager.com. Our cloud-based project management software provides online Gantt charts with milestones, real-time data, and a collaborative platform to make you and your team more efficient and productive. See how it can help you manage projects by taking a free 30-day trial today!

https://themarketingpeople.com/what-is-the-best-marketing-strategy-for-an-exhibition-in-2016/

What is the best marketing strategy for an exhibition in 2016?

Posted on 16th June 2016 by Lauren — 0 Comments

Exhibiting at a trade show or event in 2016 isn't just about the day itself, there is a lot of preparation, and after work to make your exhibition as successful as possible.

So how can make the expense of exhibiting worth it for your business? Here are 8 steps to running a smart exhibition campaign in a digital age.

Hatch the plan

So you've seen an exhibition that looks like it may be fruitful, and decided to take the plunge. You book your space and you're off.

Now what? You need to create a marketing strategy that goes further than just your objectives for that day or couple of days, and this will determine how you go through the next 7 steps.

Consider why you are taking on this exhibition, what do you hope to achieve, and who do you hope to meet? How will people interact with you, and what will attract to the stand and then convince them to convert? Lay out all of your plans, so that throughout the next steps, you have something to revert back to.

Begin to plan your stand, what is it going to look like, and look at the likes of pop up banners, display stands, and perhaps even lighting and flooring, depending on what your space package included. These things can take a little while to design, make and arrange to get delivered or installed, so it may be worth getting these in motion, so they are ready in time for your exhibition (and it leaves plenty of times for problems to crop up and be dealt with.)

Also think of an on stand offer or competition. Why are people going to come to your stand? What is going to convince people to buy tickets and come along?

By setting up the goals and pipeline now, you have something solid to keep referring back to, so though your plans on how to achieve it may change, your goals won't.

Lay the groundwork

Now you have your plan, you can begin to lay out the very beginnings of the groundwork. Think about following the event on social media, and mentioning that you will be attending.

Start to mention it to your clients in conversation, as well as if you are out networking that you will be attending the event.

Start to assess your social media and website to ensure they are all up to date, as you will hopefully be experiencing more traffic over the next few weeks. Do you have the best images on your social and the correct contact information? Does your website have up to date branding, messages and products? Take the time to sort the foundation out before you begin to look at adding offers and such on to the website and social networks.

Build the suspense

Now there are whispers that are attending this event, build on it. Make it official, and build the suspense. Perhaps post a blog to show your team preparing goody bags for the show, or a little bit of what your stand will look like. Now would be a good time to announce any on stand offers you will be running too, to give people motivation to go. You could also include links to where people can book tickets, and find out more about the event.

You can then share this blog across your social media, with the announcement of your offers, and where people can buy tickets, as well as beginning to connect with other exhibitors who will be there on the day.

If you are looking to run an offer, it might be an idea to include this on your website too. So that if someone see's any of your marketing before or during the exhibition, they are met with the same messages on your website as they are at the stand.

Edge your bets

Though you will have picked this show no doubt because of the attendees you will have visit your stand, it is true that nothing attracts people to your stand more than a crowd. Which is why inviting your current customers to come and visit you on the stand is always a good idea.

This could be through an email, or a direct mail campaign to your clients, detailing where your exhibiting, and when. This can be as an all guns blazing marketing email showcasing all of the on stand offers you have available, or it could be a simple email to say you are attending so may not be able to respond to email that day, but they could come and join you for a day of fun instead.

Some of your customers or clients you may have never actually met face to face before, so this could be a great time to actually put a face to a name. If you have enough people on your stand, and you are at an event near some of your clients, it may be a good idea to arrange a meeting at the event and utilise the time you are there.

Prepare your troops

Depending on the size of your company, you could have your whole team attending the expo, or perhaps a dedicated handful of exhibiting experts, but whatever the size or experience of your troops, you need to ensure a number of things before you set off for the expo.

Is there a sufficient brief?

Do you team know what you want to achieve from this, and how you expect them to do this? Everyone needs to be on the same page, and have a clear picture of what you are all working towards.

Have specific roles been set out?

Do you have people who are better at grabbing the attention of passers-by who have the knowledge to know the difference between a lead and a just browsing? Do you have experts who can take over these quality leads? Do you have a representative who will be setting up follow up appointments? Do you have someone who is going to be managing your social on the day, and gaining images for future marketing purposes? Who is managing your team, and ensuring people take breaks etc. Along with a brief of the company's overall's objectives, you need to also brief each individual on their responsibilities. This not only ensures work load is split, with the best person on the right job, this also adds extra motivation for each individual to keep them going through the day.

Do you have offers in place?

If you have offers in place, ensure your team know them inside out. There is nothing more frustrating for attendees (or embarrassing for your team) than having staff members keep having to ask each other the details of an offer. These should hopefully be clear within your marketing on the stand, but your staff should be clear on these too.

Ride the wave

It's finally here, and its exhibition time, so what do you do? Enjoy it! With your objectives in mind, talk to as many people as possible, collect as much information as possible, whilst making use of all the tools you have available to you.

Use your social channels to send out a few blasts on your day, how people can find you, why people should pop over to your stand, and if people aren't there, what are they missing out on?

There are plenty of live streaming options available now which could be done straight from your phone, such as periscope or Facebook Live. This works especially well if you are running a competition on your stand, and broadens your exhibition audience to those who aren't at the exhibition.

Check out our previous blog on running a successful exhibition for practical tips on keeping yourself and your team motivated and in good health for the day.

The next step

In no way is the exhibition the last step, and this is where most people fall down. (Consider when you miss the last step on the staircase and fall down the last part as a very obvious metaphor on this part folks).

You have done this exhibition for a reason, and I can bet that 90% of your objectives have to do with gaining leads or increasing brand awareness. Yes, some of this is done at the exhibition, but the bulk of the work is when you get back to the office, and you have to close those leads, or take advantage of any awareness you've gained.

So let's break this down on how you can fully capitalise on the opportunities you now have at your fingertips.

First and foremost, schedule in the time to do the below.

If you are out of the office for a day or three, you are most likely going to head back to a pile of paperwork, and a bulging inbox. Add this on to all the extra exhibition work you wouldn't normally be completing, and you can end up a mess pretty quick. Manage your time, and work with your managers and your team to prioritise the tasks on your to do list. It is easy to panic, and flap, and never call back anyone who left their details with you leaving all the hard work you have done at a dead end. But by managing your time when you return (or even planning it before you go) you can complete your own work, and make the most of these extra opportunities.

Follow up your leads.

This is a bit of a no brainer, but if people have genuinely shown interest in your products or services, then talk to them. Whatever your method of sale, go for it, you have qualified leads you have met face to face who have said they are interested, you are not going to get a better time than that to approach people.

Social Media.

You may have spoken to several people at the exhibition who have not shown immediate interest in your product, but may do in the future, or you may have just had a good chat, and its worth staying connected. This is where social media is great, as you can connect, there is no sales pressure, but you can still see what their company is up to, and when might be a good time to approach them in the future. It is also great exposure for you as well if the event has had some buzz, and you can join in on the conversation.

Blog.

What happened at the exhibition? Tell people about it! If you decide to do this all again next year, why should people come and seek you out? Show them what great fun it was, and post your blog on social media. This may get shared by other people who attended, and drive more traffic back to your website.

Email.

All that hard work you've put into the blog? Re-use that content and send an email out to your marketing list. Here is what your staff have been hard at work with the last few days, this is why it's great. Can people still take advantage of any exhibition offers? Tell them how they can.

Website.

If you did have on stand offers that were advertised on your website, then make sure they are taken back down. Now would be the time to add any valuable knowledge you gained at the expo on to your website. Perhaps several people asked you the exact same question? Is this worth adding a new page for? Writing a blog about it? Or even just adding a quick note to your FAQs? If you are driving more people back to your website through social media, blog and emails, then make sure it really provides all the information a customer needs to make their decision.

Feedback to all.

Speak to your team, and to anyone involved, and let them know the outcome. What did they achieve? Did you complete your objectives? What will you be doing differently next year? By not feeding back, any motivation for the next event will be depleted, and general atmosphere can drop if people feel the really hard work of the last few days has gone un-noticed and un-appreciated.

Want to get really smart?

If you have a little spare time, and spare budget, it may be worth considering a 360 video ready for virtual reality. Reach more people than just your exhibition audience, but showcasing your stand in all its glory through virtual reality. Or perhaps create a more immersive experience for those who visit your stand, let people experience your product in virtual reality, or let people tour your whole showroom without ever leaving your stand. Look out for our upcoming article on virtual reality for more ideas on how it could work for you.

Are you exhibiting this year? We can help you from the initial planning of your stand, to the creation on your stand, and the follow up afterwards. If you'd like to have a friendly chat on how we could work together, call us today on 01543 495752.

แบบฝึกหัดส่วนที่ 2

1. ส่วนประกอบของข้อเสนอโครงการมีอะไรบ้าง
2. จงวิเคราะห์ความสำคัญของการจัดแบ่งงานเพื่อความสำเร็จ
3. ทำไมต้องมีการติดตามและประเมินงาน อธิบายพอสังเขป
4. การตลาดมีผลกระทบต่อการออกแบบนิทรรศการหรือไม่ หากมีโปรดอธิบาย
5. ในโลกปัจจุบันที่เปลี่ยนไปท่านจะออกแบบนิทรรศการอย่างไรเพื่อดึงดูดความสนใจแก่ผู้เข้าชม

How To Plan An Exhibition

07th January 2015

Exhibitions are your chance to show off. Whether you're showcasing a product, a skill or a service, these events are designed to provide you with the perfect platform to present your business at it's best.

These events are unique in that they offer a place to capture qualified clients or leads face-to-face. Attendees will attend an exhibit because the content/offering will supply them with something they are actively seeking. For example, a wedding exhibition attendee is likely to seek suppliers/information for their forthcoming wedding – and a marketing exhibition attendee is likely to work in marketing.

Exhibitions create qualified exposure and sales that you might have to work harder to get via other channels.

Planning An Exhibition

So how should you go about planning an exhibition event so it matches your aims as best as possible?

Well, the first thing you need to do is *clearly identify* those aims. Depending on the kind of exhibit you are trying to organise, this will vary. We've listed some examples of different exhibitions below:

If it's an art/photography exhibition, you might want to:

- Gain a following
- Generate sales of your work
- Promote new pieces of work
- Deliver a message via your work
- Build a brand

If it's a Trade/Industry Exhibition, you might want to:

- Generate sales of exhibition space to re-sellers and relevant brands
- Build brand awareness and respect
- Create a buzz
- Have face-to-face contact with qualified leads
- Generate opportunity for market research

If it's a fashion exhibition, you might want to:

- Generate a fashion following
- Promote a new line
- Generate sales
- Create a buzz
- Increase branding

Once you have identified your aims, refer to these at each stage of the planning process. This will allow you to cross check each decision against your overall aims, helping you to streamline the planning process and ensure your plans don't journey off-course.

Calculating A Budget & Profit Benchmark

As with every major event, exhibition planning is limited to a budget, and the success of your event is dependent on how you utilise the funds you have available.

The main budget-eaters are things like:

Venue

Choose where to host your exhibition carefully. This space not only determines how many guests can attend, but also how many other exhibitors can provide content for your event. You might also want to consider what impression the venue reinforces – is it worth hosting in a grand venue to create a more glamorous feel? Or would a less opulent venue be appropriate?

Marketing

You need to allocate a good proportion of your budget to getting the word out about the exhibition. It's important to bear in mind the difference in approach when marketing to the attendees and the exhibitors. The attendees need to be convinced that the exhibition will have something for them, and the exhibitors will need to be convinced that the attendees will want to buy from them. Getting these two messages to connect is vital to the success of the entire event.

Décor & Technology and Furniture

The internal décor will have a big impact on how your guests perceive the event. Furniture, branded images, banners and screens are a good way to create an impressive visual experience. The Technology you use throughout the event is also very important. Read more about technology and how it can be utilised in events.

Special Guests

Depending on the type of Exhibition, you might want to include an industry leader to present a talk or seminar. Case studies and industry leaders insights make great talking points, and this will not only provide a more rounded experience for the attendees, but will give you more of an edge when marketing the event.

Food & Drink

You may want to include refreshments during the event, which will incur extra upfront costs, even if later incorporated into ticket prices.

Logistics

Big events require logistics management. This includes managing the exhibition space, knowing who's turning up and when, organising the timings and the general flow of the day (or series of days). It's important to have a team dedicated to the smooth running of the event.

Staff & Hospitality

Allow some budget for general hospitality and logistics staff to be available throughout the event.

Logistics (in more detail)

As with any event, logistics are a key element to plan. Simple things like ensuring the exhibition location has near-by parking, accommodation and travel links is vital to success. With an exhibition, you'll also need to consider:

- The setting up and dismantling of stalls
- Arrival and departure times of Exhibitors
- Where you need equipment and when
- Organising lanyards and hand-outs
- Organising networking events
- Overall time management
- Pre and post-production (setting up and dismantling of displays)

Co-ordinate a team to focus and manage each of the processes in detail - managing all of these aspects acutely will ensure a seamless operation.

Generating a Profit From Exhibitions

Exhibitions can be a great way to turn a profit, especially if the content offered to the attendees is of a high quality. Likewise, quality content gravitates to good quality attendees – the two aspects need to meet in the middle to create a successful Exhibition. People will pay for the privilege of attending an event that surrounds topic relevant to them. Likewise, people will pay to showcase their product to a number of qualified leads. Both parties need a reason turn up!

Selling Tickets

Depending on your Exhibition, ticket sales are a sure-fire way to generate a profit from your event. Pricing tickets individually means you can work out how many tickets you need to sell to make your target revenue. Many high-end exhibitions charge a significant amount for tickets – but of course it's vital you provide a significant amount if you charge a premium amount.

Many exhibitions offer a variety of tickets based on a tier level. Guests pay more or less depending on what access level they want for the event. You may choose to allow some tickets particular perks, such as private seminars, refreshments or accommodation throughout the event.

Obtaining Sponsors

Another approach people chose is to allow attendees access for free and monetise on the sponsors for the event. Potential sponsors tend to be relevant companies or authorities that in return for sponsorship receive a rich pool of qualified leads to whom they can heavily advertise to. Their brand will be repeatedly reinforced to the masses.

Selling Exhibition Space

Selling your Exhibition space works in a similar way to securing sponsorship. Instead of overall exposure, you're allowing a company a plot of space to advertise their offerings to the exhibition attendees. Again, you can tier these costs depending on where the plot is located, how big it is, how long they want to use it for, and any add-ons they might require.

Getting People to Attend An Exhibition

The advantage of exhibitions is that you're usually marketing to a selected pool of people, meaning your demographics are already very defined. This makes marketing easier from the offset.

Clever marketing is the key to getting high attendance, which is why you'll need to allocate it a good amount of budget. To get the best results, it's worth allocating budget to the following various areas:

- Print
- Online
- B2B
- Email
- Native advertising
- Advertorials
- Social Media

Create a combined marketing strategy to target your audience from various angles to create as much awareness of your event as possible. It's also vital that you speak to both audiences separately to ensure they receive relevant messaging.

Get Guests to Attend your Exhibition

Because you know the demographics of the target audience, concentrate your marketing efforts in the places they habitually spend time. Refer to the list of marketing outlets above and research how best to target your audience. This will ensure your budget will capture qualified traffic.

For example, if your exhibition focuses on work and industry, advertise on relevant and well-known websites within the industry. If it's an art or fashion exhibition, target local art groups or institutions.

Get Sponsors and Exhibitors to Attend

Sponsors and Exhibitors need to be convinced that those attending the exhibition will be qualified leads before they part with their money. Work on a pitch to persuade these companies that it's worth their money and time to exhibit their goods at your exhibition. Visuals such as the different sized stall plots are a great way to appeal to prospective customers

Exhibitions at Senate House

Senate House is a central exhibition venue located in the heart of London. Our superior event space can cater for large or small events throughout the year, and we provide a range of in-house services such as audio-visual and furniture hire. Find out more about hosting your exhibition at Senate House today.

Posted by
Charlie Vernon

Designing with light and shadow: 10 highly effective tips you should try [with case studies]

canva.com/learn/light-and-shadow/

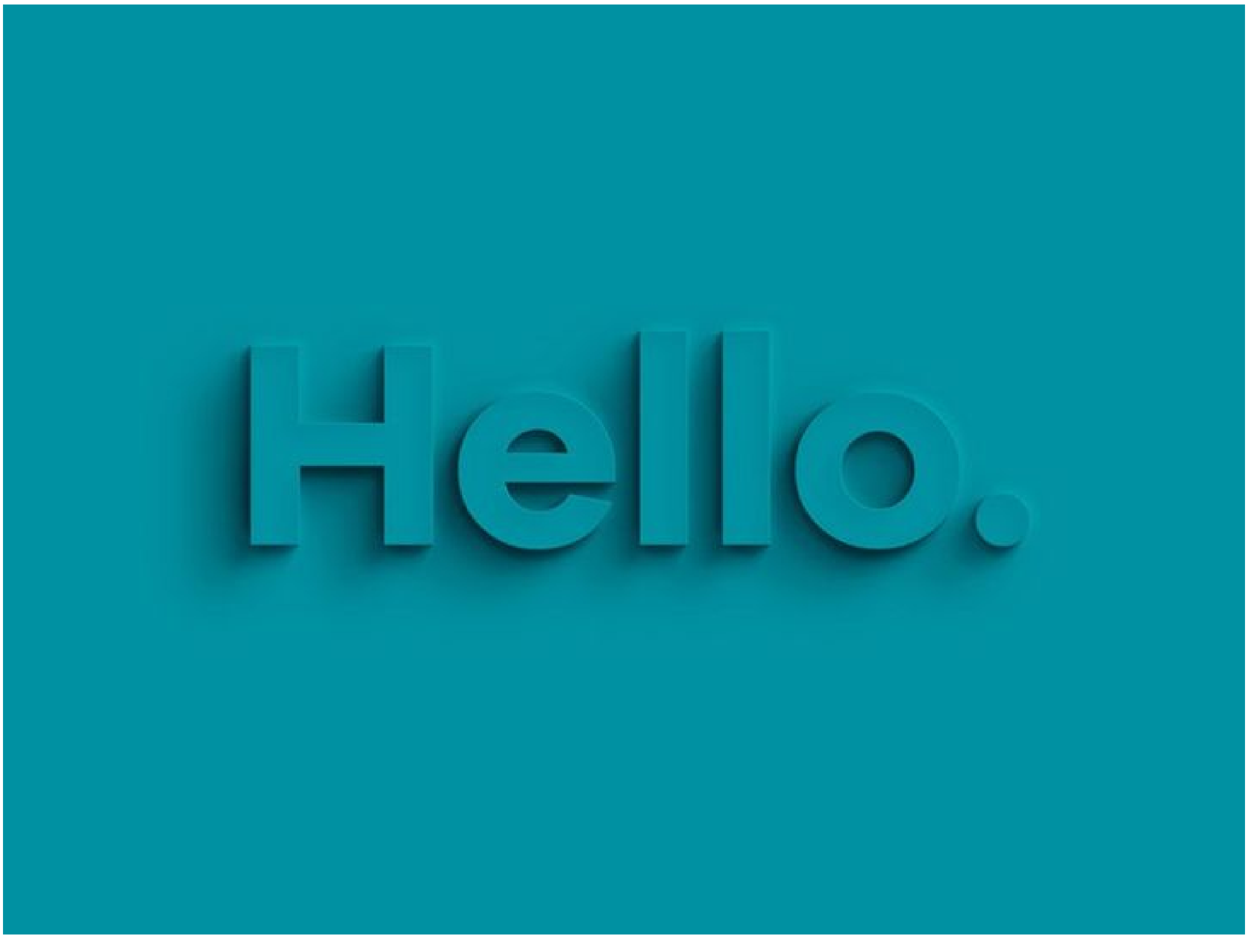
Janie Kliever September 29, 2015

Have you ever taken a moment to notice a sunbeam streaming through a window, seeing how the light changes the colors of objects in the room and casts shadows?

No? I'd venture a guess that most of us are so used to looking at light and shadow that we rarely take the time to think about how they work. But whether or not we're consciously aware of them, light and shadow are visual cues that we all interact with every day — they give us information about shape, distance, position, texture, and other physical and tactile qualities.

Using Light & Shadow in Design: Pros & Cons

Paying attention to the interplay of light and shadow in real life can give us some great inspiration for making our designs look more life-like. Unless you happen to have a 3D printer in your basement, most of us only have the ability to design in two dimensions. But we're all used to seeing things in three dimensions, and sometimes that creates a visual disconnect between what we're used to seeing in everyday life and what we see on paper or on screen. Adding elements of light and shadow into your designs can help bridge that gap, giving your 2D designs a more realistic, almost 3D appearance.



Dribbble/Martino Pennati

But (and this is a big "but"), if you've spent any time on the Internet at all, you're sure to have noticed that light and shadow effects are easy to overdo. As one designer admitted in his amusing blog post "Confessions of a Drop-Shadow Addict," in our modern world of instant, click-and-it's-done design, it's much too easy to add one effect after another without really thinking about if they're necessary or beneficial to your design project.

That said, let's look at a few pros and cons:

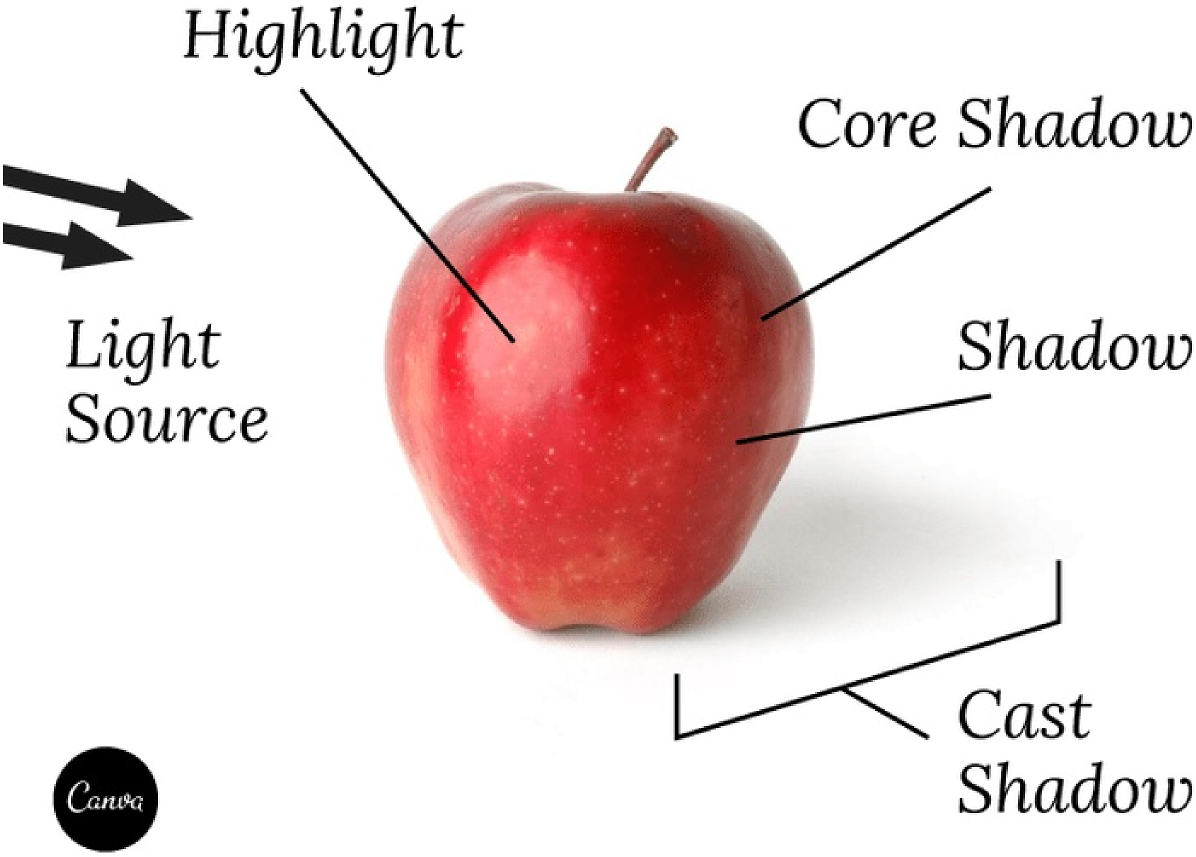
Light and shadow can add qualities like depth, dimension, perspective, realism, and visual interest to your designs. This can simultaneously draw viewers into your design and make it seem to pop off the page or screen.

But…it's easy to get carried away. Overdoing effects is a no-fail way to make an otherwise good design look amateurish and tacky.

To sum up, the secret to using light and shadow in a smart way involves keeping two things in mind: purpose and subtlety. First, make sure any effect you're using has a specific, practical purpose and makes sense for your project; then, take a "less is more" approach to applying it to your design. If you're using an effect that came with your design program, the default settings are always more dramatic than realistic (particularly for shadows); don't rely on them, you'll likely want to make them softer, lighter, and more subtle.

How Light and Shadow Work: A Quick Overview

Before we get into suggestions on how you can integrate light and shadow into your designs, it will help to have a basic understanding of their anatomy. This is something artists and photographers study to create well-lit compositions, but it can also help graphic and web designers create realistic light and shadow effects.



In the diagram above, I've pointed out a few key terms. We'll define them briefly here:

- Light source: If you're seeing shadows or highlights, then there must be a light source. Sounds obvious, but in most design projects (other than illustrations that include a sun, moon, lamp, etc.) that light source won't be visible. However, if you determine the position of an imaginary light source and configure your effects to appear as if they were all caused by that same light source, you'll end up with a more realistic, consistent look — rather than just some randomly applied special effects.
- Highlight: This is the where the light shines the brightest on an object (closest to and facing the light source).
- Shadow / Core Shadow: This is the darkest part of the object (furthest from the light source). But shadows aren't all one dark blob of color; they vary in shade. The deepest part of a shadow, where the object is completely turned away from the light source, is known as the core shadow.
- Cast Shadow: Unlike the core shadow (which is *on* the object), this is created *by* the object. Where the object itself blocks the light source, it casts a shadow on the surface it's sitting on. Cast shadows point in the same direction as the light source, just on the opposite side of the object.

This is a very basic overview that will give you a starting point for using light and shadows correctly. Now — let's get down to business; on to the design tips you've been waiting for:

01. Use Color to Create Depth

Color alone can be a great way to create the illusion of lightness or darkness — without resorting to pre-packaged effects. In particular, layering various shades of the same color can create the appearance of depth or distance. That's because, to our eyes, light colors recede while dark colors advance.

The illustrations below demonstrate this idea perfectly. Notice how the mountains start off darker closer to the foreground, but then lighten and look like they're off in the misty distance in the background.

Dribbble/Harry Nesbitt

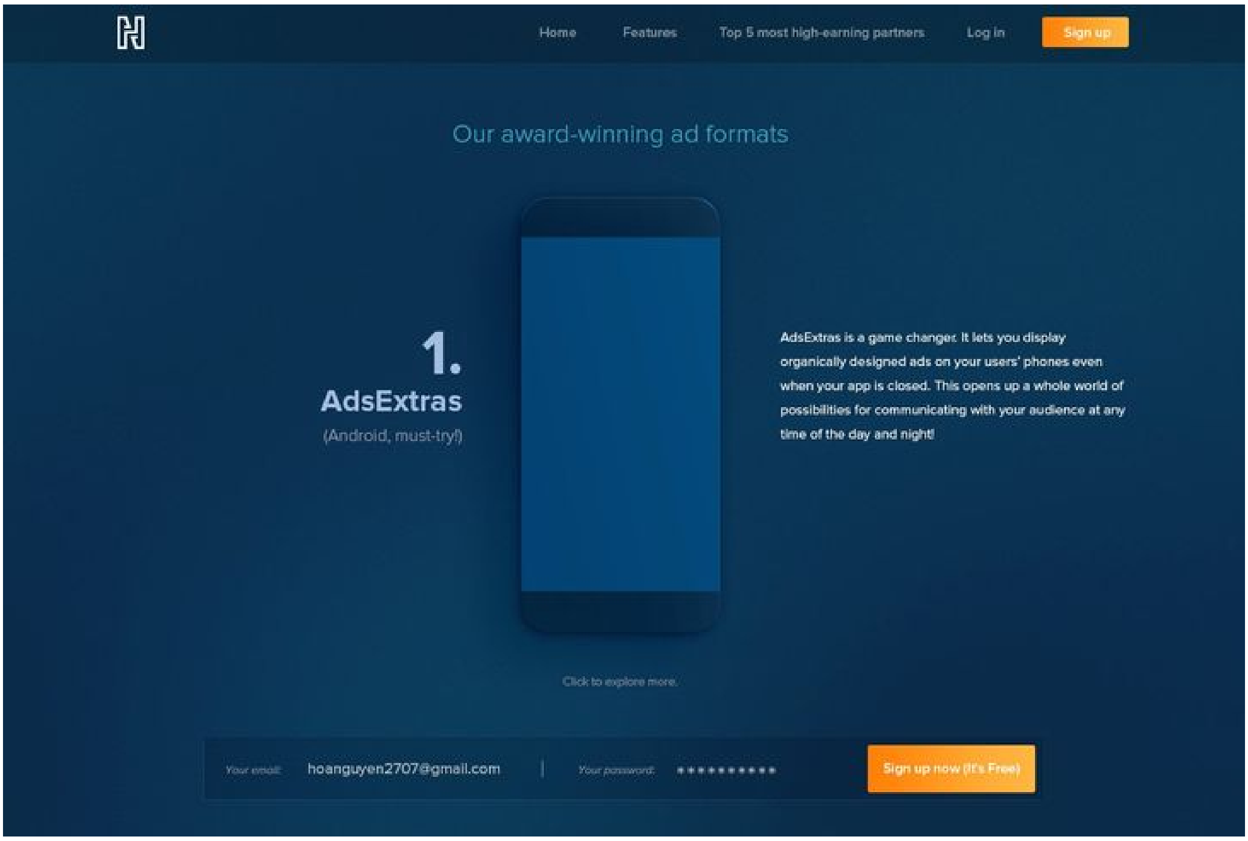
There's also a lot of other great light and color going on here. The color temperatures the designer chose for each panel do a lot to enhance the impression of light and darkness. The subtle gradients in the sky also create the impression of different times of day and types of light (e.g., the warm glow of sunrise versus the cool, white moonlight). Speaking of gradients, on to the next tip…

02. Add a Gradient to Your Background

Turn on a lamp in your house and look at the nearest wall…It's not all one, flat color, is it? The part of the wall closest the lamp might look lighter or warmer in color, while the farther away you get from the light, the darker it looks. You might think you're looking at a plain, blue wall — but look closely, and you might see shades of gray, green, blue, or purple. The point is that rarely does light make an object's surface look like one even, unvarying color.

And one way to create that type of dynamic color variation is to add a gradient to a background or other large area in your design. Now, gradients may make you think of a horrible multi-colored background on a 1990s website that makes the text impossible to read — but that's a gradient gone bad. When done well, gradients can add some subtle color variation (as already mentioned), help soften/fade out shadows, or create the appearance of light shining on a certain area of your design (particularly with radial, or round, gradients).

Below, this radial gradient on a website's landing page is serving multiple purposes. The lighter part of the gradient makes it look like a light is shining from above, and also makes the shadow the phone is casting more visible. Combined, these effects make the scene here seem true to life — it looks like you could reach out and touch that phone; it has shape and dimension. Also notice how the highlight at the top right corner, along with the shadow, really helps give the phone a 3D appearance.



Dribbble/Hoang Nguyen

03. Use Highlighting to Draw Attention

Light glinting off of something always catches your eye, doesn't it? In a design, highlights can act like a subtle spotlight, making certain elements a little extra visible — in addition to helping items looks more realistic, as discussed in the previous point. If you want to highlight multiple things in your design, do remember to think about your imaginary light source, and make your highlights consistent.

Check out the simple highlighting on the "801" logo on the product packaging below. It's really just lines of color that are slightly lighter than the primary color of the numbers, but it gives extra visibility and visual interest to the focal point of the design.

Dribbble/Emrich Office

04. Master Shadows: Shading

Shading is another term for the shadows *on* an object, like the core shadow we defined at the top of the article. Shading can give shape and dimension to flat design elements or lettering.

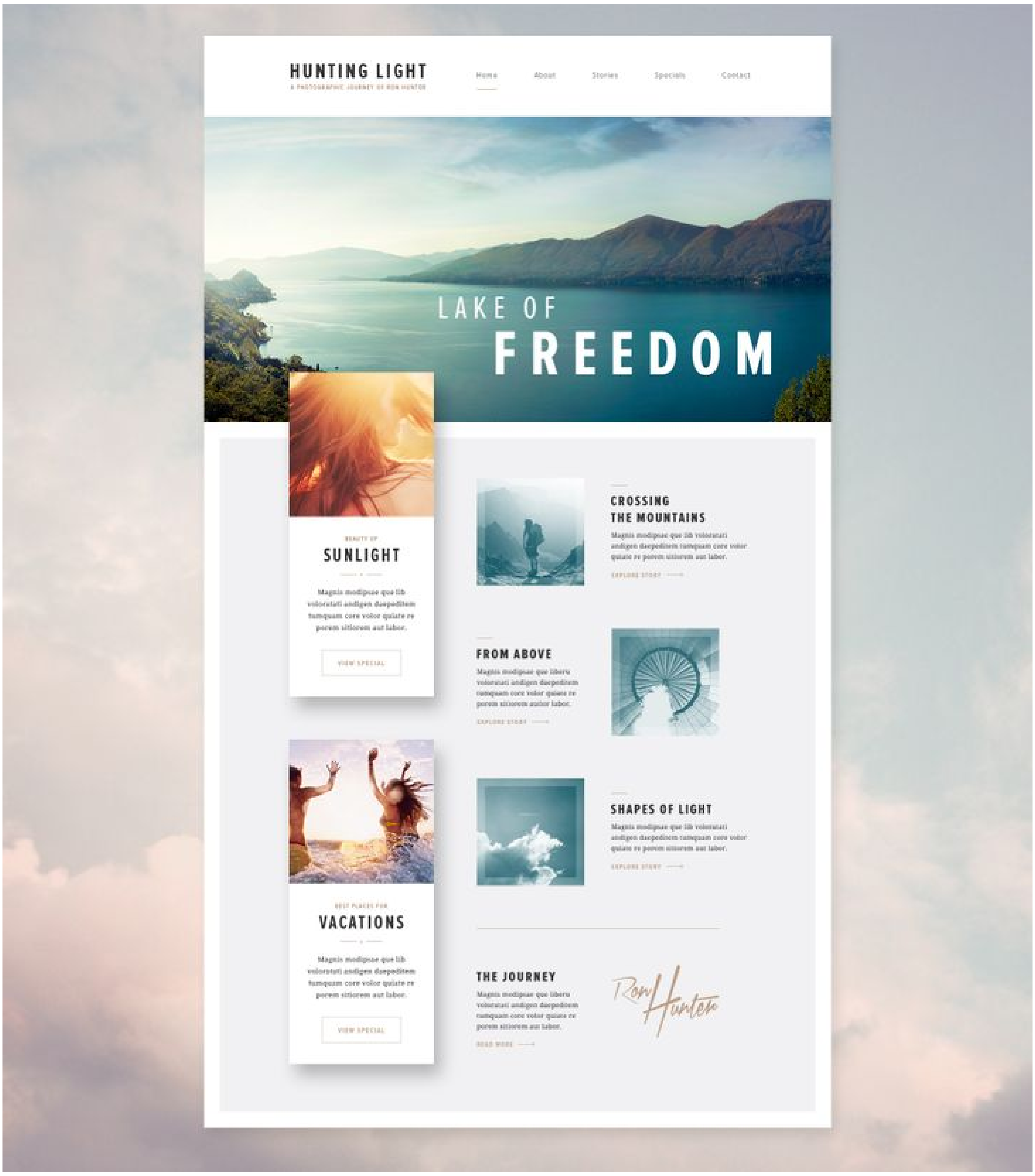
Here, the textured shading on a flat, white typographic logo makes it look layered and complex:

Dribbble/Michael Spitz

05. Master Shadows: Cast & Drop Shadows

Remember the apple diagram earlier in the article? The cast shadow was the shadow that the apple itself caused by blocking the light, creating a shadow off to the side. Drop shadows are just a particular type of cast shadow where the light source is more or less directly overhead, which casts a shadow behind or underneath an object. This makes the object look like it's floating above a surface.

From a design standpoint, drop shadows can help items or information "rise" to the top of a layout, making them stand out. They're also useful for improving the visibility of light-colored design elements, especially text. For example, on this webpage design, drop shadows help make featured content more prominent:



Dribbble/Ben Schade

Drop shadows are very common in design projects of all kinds, but also commonly misused. A typical drop shadow faux pas is to make them too large, too dark, and/or too sharp. Using shadows in a design generally shouldn't make viewers think: "Oh look, there's a shadow!" Instead, they should blend in seamlessly with the rest of the design.

06. Adjust Opacity

In real life, shadows aren't opaque, and light isn't a flat wash of white or yellow — they're transparent; it should be the same in your designs. For a subtle, realistic look, opacity and transparency settings are your best friend when applying effects. It's good practice to start off with a really understated application, and then build it up slightly as needed; this will make it less likely that you'll accidentally overdo it.

07. Combine Light & Shadow for Eye-Popping Typography

Your typography is a great place to add light and shadow effects, either on or off the letters. Particularly for designs where typography is the focal point, this can really make the words come alive in an eye-catching way.

Take this typographic logo as an example: it uses both highlights and shading on the letters that fade in and out (gradients) to create a chiseled, 3D look. There's also a nice drop shadow below. (Notice the consistent use of an imaginary light source coming from the upper left hand side: the main highlights fall on the top and left sides of the letters, and the drop shadow points down and right, away from the light, as it should). Some subtle textures pull everything together.

Dribbble/Nick Slater

08. More Typography Shadow Options: Try Raised and Recessed Styles

Your fonts are one place where you can really get creative with shadow styles. They're easy to apply for the most part (some fonts even come with a shadow style built in) and can give your typography a custom look. Let's look at two more options:

1) Raised: Embossing is a printing technique that physically raises a design feature (usually text) above the paper's (or other material's) surface. This is usually done with a metal stamp of some kind. You can copy that effect digitally with some well-placed shadows (outside the boundaries of the letter shapes) and highlights (on the letters themselves).

Boltz & Hase

2) Recessed: People use a variety of words to describe text that is engraved or pressed into a surface. Letterpress in a common one — it's a printing technique that uses metal plates to press a design (either with or without ink) into soft, thick paper — but the word is also frequently applied to digital effects that replicate that look. For example, this logo design:

Dribbble/STUDIOJQ

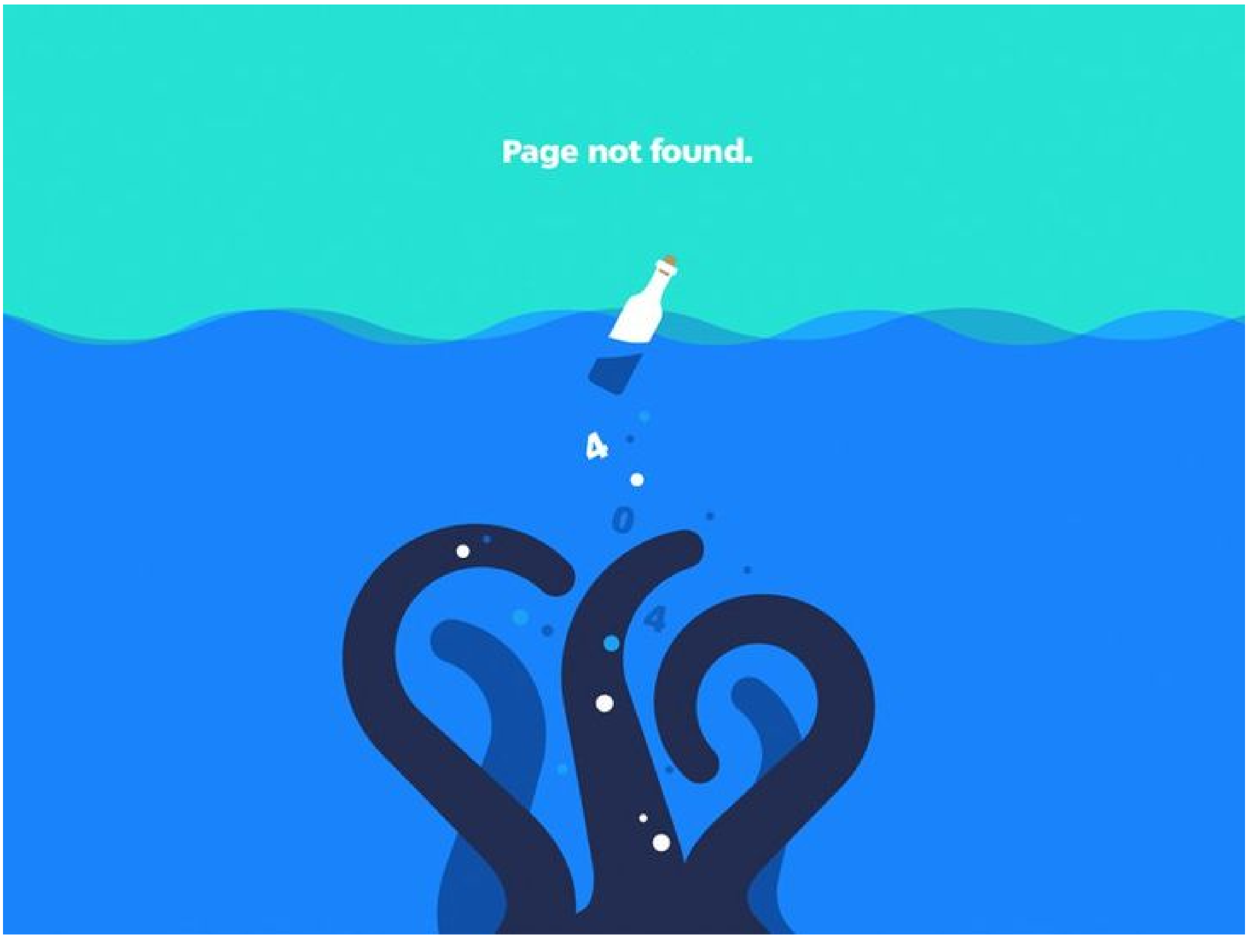
The shadows and highlights are placed in opposite positions as an embossed look: the shadows are inside the letters, and the highlights outside, marking where the surface is pressed down.

09. What About Flat Design?

Flat design has turned into a trend that has staying power: from Apple's transition to a flat mobile design to Google's new flat logo, it seems here to stay, for a while at least. One of the defining characteristics of flat design is its lack of depth, which generally means you won't be seeing many shadows or highlights. But what if you want to keep flat design's minimalism while adding some dynamic lighting or shadows? Designers have been tweaking the trend to allow for that; here are a couple common approaches:

> Color: Using color variations or gradients can add a sense of dimension or light/shadow interaction while still technically sticking to a flat design concept.

This 404 page design layers lighter and darker colors to create the appearance of depth (a technique we discussed in point #1).



Dribbble/Jonathan Patterson

Long Shadows: This particular shadow style is often paired with flat design, especially for text and icons. Long shadows generally extend off the edge of the design.

Dribbble/Georgi Davitaya

10. For the Web: Make Things Look Clickable

For web design, how users interact with the site is naturally an important consideration. The user interface (or UI) should be easy to use and understand, and knowing what you can and can't click on is a big part of that. That's where shadows and highlights can be useful, especially when designing buttons.

Notice how the buttons below use a combination of many of the features we've discussed throughout the article — gradients, highlights, shading, shadows — to create shape and dimension. The highlights especially do a good job here; on the left button, the thin highlight on the edge makes it look like the button rises slightly above the surface (it's pressable), and the rounded highlight on the top half gives it a convex shape. The left button uses an inner shadow technique to make it appear pressed down.


AT&T 3G
12:30 PM
100%
Your name
MELANIE RICCARDI
Gender
Male
Female
Weight
123
Next

Dribbble/Charles Riccardi

These types of design choices may be small and subtle, but they subconsciously help viewers interact with your design.

Let’s Review…

Light and shadow effects generally do the most for your design when they’re applied carefully and strategically, not randomly or just for the sake of adding extra “bells and whistles” to your project. Nate Eagle offers some good advice in his article on drop shadows and gradients:

> “Use spacing, placement and color to make the design effective before adding the final layer of polish. If you focus on making your designs work without these tricks, you may find that you don’t need them as often, and that they are more effective when you do use them.”

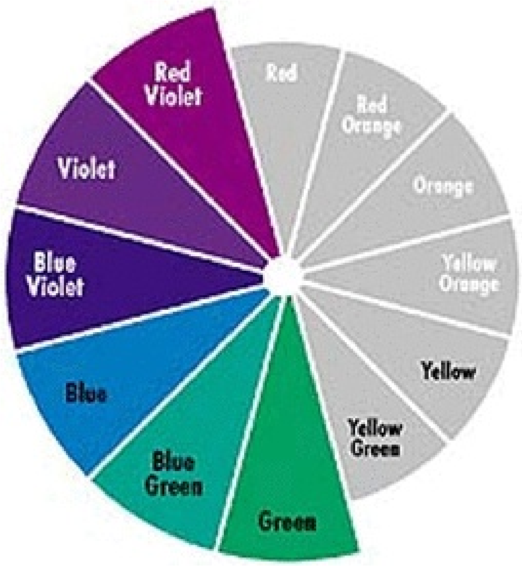
Now, go experiment with some of these techniques for your own projects — happy designing!

Please Explain: WARM and COOL

truth-is-beauty.com/please-explain-warm-and-cool.html

You've probably learned that reds, oranges and yellows are warm colors, while greens, blues and violets are cool colors.

Warm colors?



Cool colors?

Yet you find versions of all of these colors in every seasonal color palette, including those seasons that are totally warm or totally cool.
True (Warm) Spring and True (Warm) Autumn have colors that one might call green, blue or violet; True (Cool) Winter and True (Cool) Summer have colors that one might call red, orange or yellow.

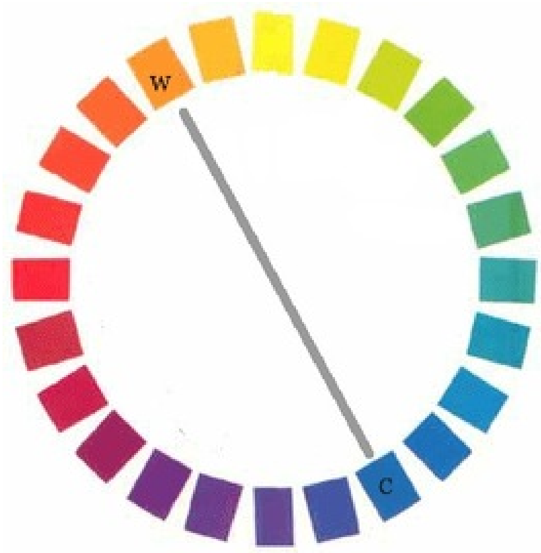
How can this be?

Let's first understand that there is no universally agreed-upon, exact warmest or coolest color. There is, though, a general consensus around approximately where "warmest" and "coolest" are found. Artists and theorists tend to agree that the warmest color is somewhere in the red-orange-yellow range, and the coolest color is somewhere in the green-blue-purple range.

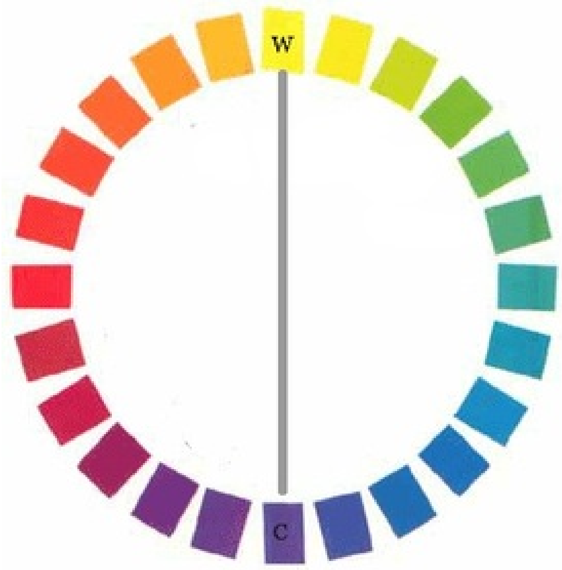
Some will say that blue is the coolest color, and its opposite, orange, is the warmest.

Others feel that yellow is the warmest color, which would make purple the coolest.

Still others might find a reddish-orange the warmest color, making a greenish-blue the coolest color. Whatever; I'm comfortable with this ambiguity. I haven't discovered an objective way to determine warmth and coolness, so I'm content to have an approximate idea of where "warmest" and "coolest" are found.



But it can't be true that all the colors on the red-orange-yellow side of the wheel are warm, and all the colors on the green-blue-purple side of the wheel are cool... right? We know that Warm Autumn has greens and blues, and Cool Winter has reds and yellows.
So what's the deal?



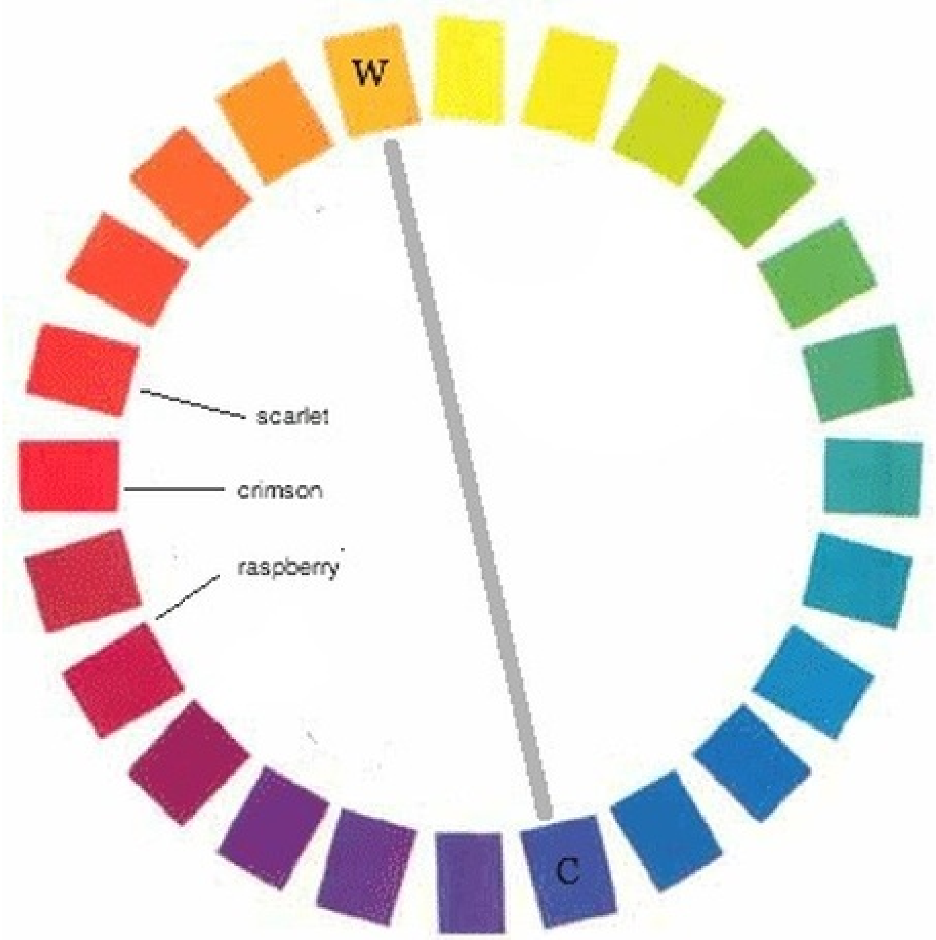
The answer lies in this fact: no matter what hue we're talking about, temperature is relative.
Think about it. You might call red a warm color. But some reds are warmer than others, right? Scarlet red is warmer than crimson, which is warmer than raspberry.

How do we know this?
The best explanation I've found for how our brains decide whether one color is warmer than another is this:

We determine it by (unconsciously) deciding which is closer to the warmest color on our mental color wheel.

Let's call orange the warmest color, just for the sake of argument.

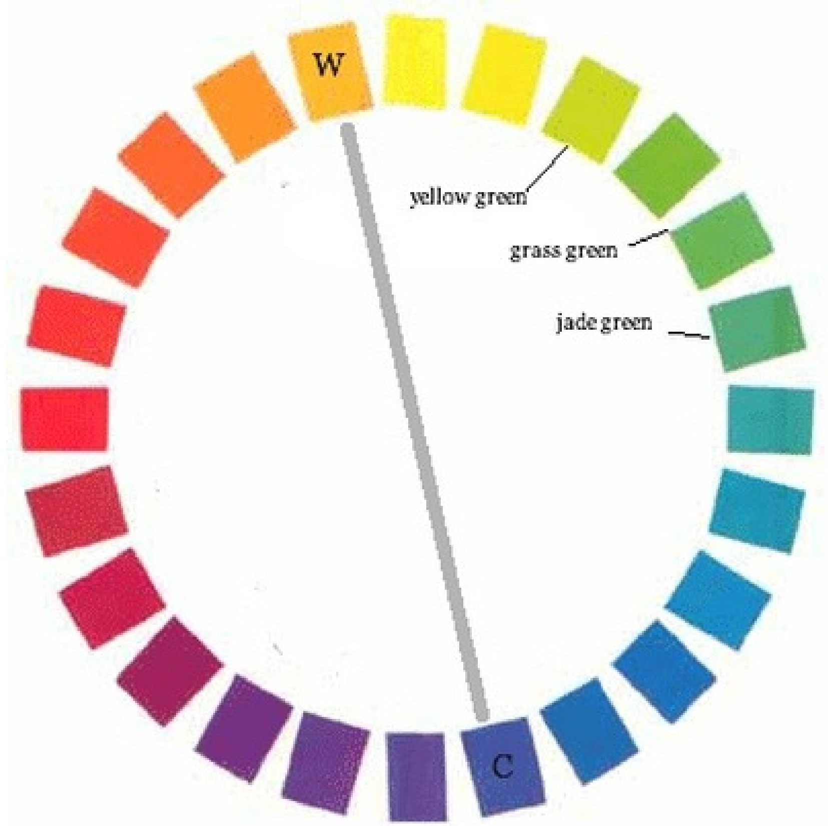
Of the three reds I mentioned, scarlet is physically closest to orange. Crimson is less close. Raspberry is even farther away.



So within the category "red," we find both warm(er) and cool(er) reds. The warmer reds appear in the books of the warmer seasons; the cooler reds appear in the books of the cooler seasons.

Consider green.

Is grass green a cool color? Not as cool as jade green, right? But cooler than yellow-green, surely.



The same principle is in effect. Jade green is closest to blue, the "cool pole" on our mental color wheel. Grass green is a little farther away. Yellow-green is farther still.
The bottom line:

"Warm and cool" is not a continuous spectrum from one side of the color wheel to the other.

"Warm and cool" is a spectrum within each hue.

In the picture above, if we started at yellow and labeled the colors clockwise, we'd have

warm yellows
cool yellows
warm greens
cool greens

Somewhere in the range of the blues, we pass the coolest color. Then the order switches as we continue clockwise:

cool purples
warm purples
cool reds
warm reds

And then we're back to our warmest color.

There are several good web pages that talk about all of this in greater detail, but I haven't seen one I like more than the article "Color Temperature" on www.handprint.com. I owe much of my understanding of how warm and cool work to this article.

P.S. Muted cool colors are less cool than clear cool colors, and muted warm colors are less warm than clear warm colors. Can you guess why? Recall that to mute a color, we add its opposite color. For example, to mute a purple, we add yellow. By doing so, we draw it closer across the color wheel to the warmest color on the wheel. So since it's closer, it's warmer. Neat, huh?

Home Draping Option 2: Any Six Seasons

$24.00
Add to Cart
Drape yourself at home! A red or pink, a yellow or gold, a green or blue-green, and a blue or violet from six seasons of your choice.
Each cardstock sheet is at least 4 x 8 inches. (I send larger ones, up to 8" by 8", as they are available.)

Let me know which six seasons you'd like in a note at checkout.

** Unfortunately, shipping outside of the U.S. and Canada is currently not available.**

Home Draping Option 1: 12-Season Color Card Set

$48.00
Add to Cart
Drape yourself at home! 48 cards in total:

- a red or pink,
- a yellow or gold,
- a green or blue-green,
- and a blue or violet

from each of the 12 seasons.
Each cardstock sheet is at least 4 x 8 inches. (I send larger ones, up to 8" by 8", as they are available.)

** Unfortunately, shipping outside of the U.S. and Canada is currently not available.**

How to choose the right color temperature for your LED lights?

ledcornbulbs.com/about-us/How-to-choose-the-right-color-temperature-for-your-LED-lights--100.html

Different places need different color temperature **LED lighting**, usually the LED lights consider to three colors, we call it warm white, nature white and cool white. LED lights for public applications to promote relaxation, people usually consider to choose the warm white which consider to 2800-3500K(K= Kelvin, Standard Unit for color temperature. And the cool white or nature white are usually consider to used to enhance concentration in office, workshop and repair Centre.

Some factory also producing CCT dimmable LED lights. The CCT dimming for LED technology is regarded as a difficult task. Usually consider set two types color temperature warm white and cool white into one LED lights, the power supply control system can freely to turn on the warm white color LEDs, or Cool white LED, and also turn on both cool white and warm white LED to get a nature color LED lights.

The color temperature of LED lights consider to 1800K to 12000k, usually most LED lights consider to make CCT from 2800K-6700K, except some special applications as decoration or aquarium lighting, grow lighting.

How to choosing a right color temperature for your LED lighting products?

Most people may asking:” What color temperature I should choose for my room, hotel, warehouse, jewelry shop, office? Should I have a certain color temperature?

Home LED lighting--Mostly home do not use cool color LED lights. Usually choosing warm color LED lights to built a warmer environment for home, color temperature consider to 2800-3500K in bed room, reading room use 4500-5500K,

LED Building Lighting--Decorative LED lighting out of building use warm white or color LED flood light, red, green, yellow..., office and other places usually use cold white color LED lighting consider to 5500-6500K

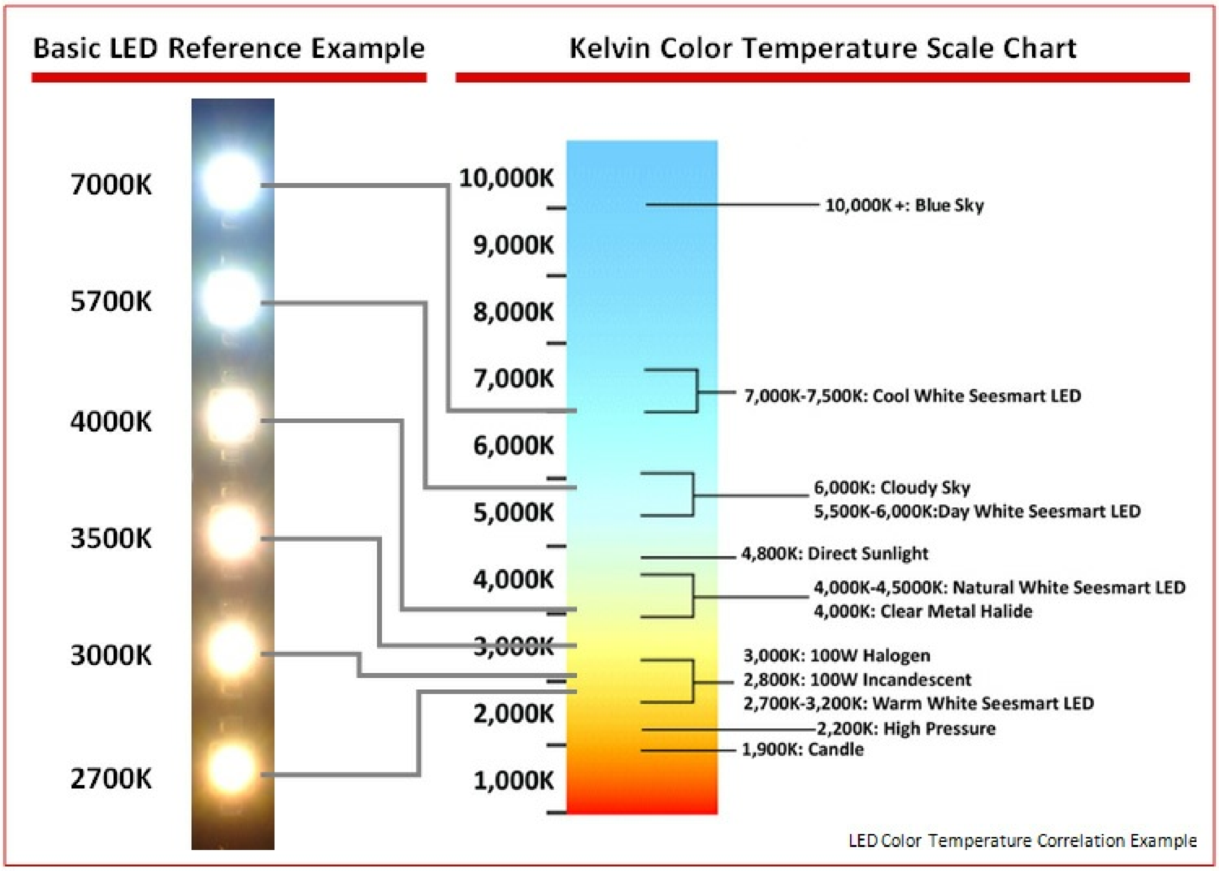
Hotel LED lighting-- Lobby use cool white:5500-6500K, room use warm white:2800-3200K LED lights

LED warehouse lighting-- Warehouse Lighting usually consider to nature white (day white) 4000-5000K, or cool white 5500-6500K LED lights.

Industrial Plant LED lighting--Use nature white or cool white LED high bay lights.

Shipping mall LED lighting-- Use the cool white with CCT:6000-6500K.

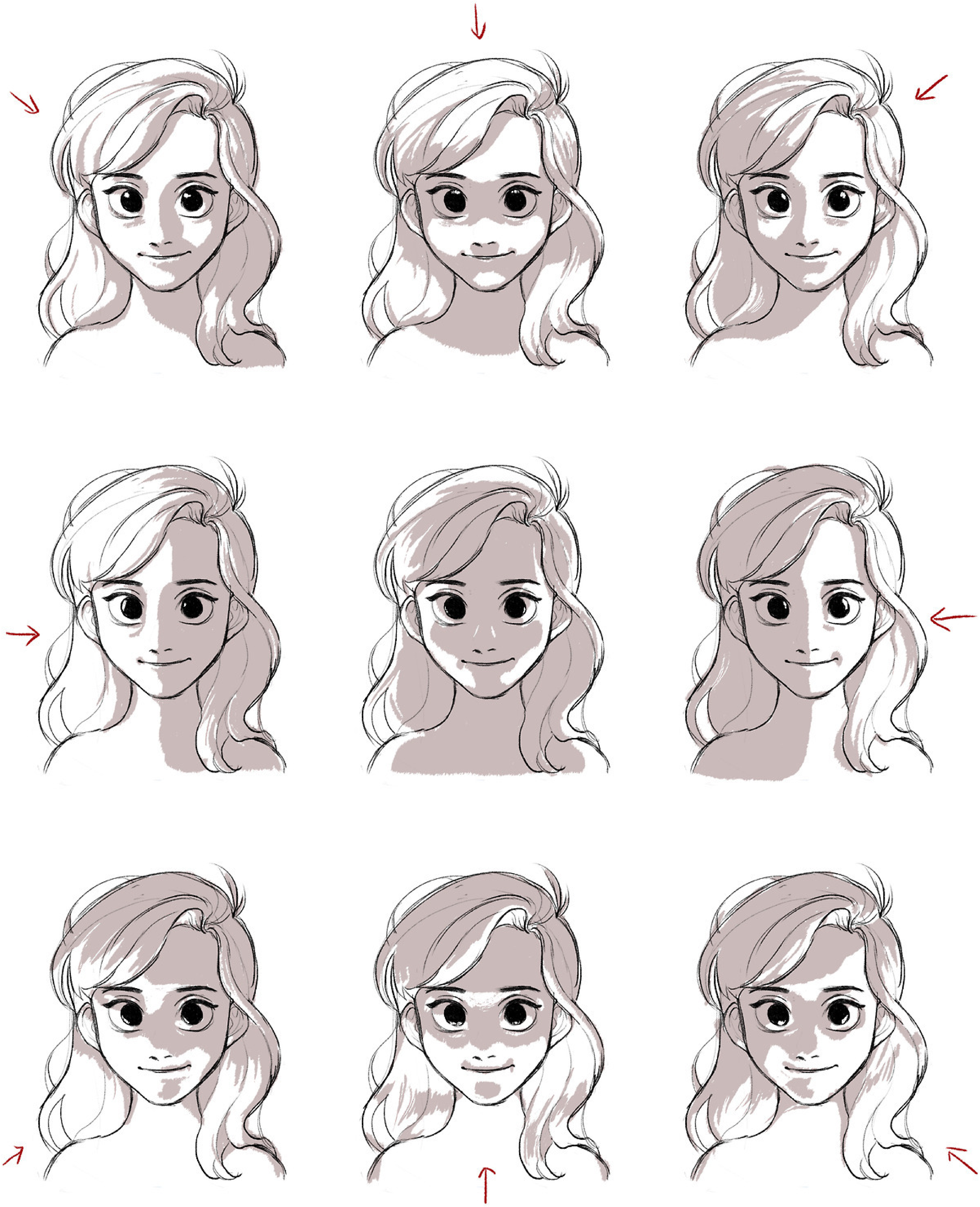
Reference picture for LED lights color temperature:


Basic LED Reference Example
Kelvin Color Temperature Scale Chart
7000K
5700K
4000K
3500K
3000K
2700K
10,000K
9,000K
8,000K
7,000K
6,000K
5,000K
4,000K
3,000K
2,000K
1,000K
10,000K +: Blue Sky
7,000K-7,500K: Cool White Seesmart LED
6,000K: Cloudy Sky
5,500K-6,000K:Day White Seesmart LED
4,800K: Direct Sunlight
4,000K-4,5000K: Natural White Seesmart LED
4,000K: Clear Metal Halide
3,000K: 100W Halogen
2,800K: 100W Incandescent
2,700K-3,200K: Warm White Seesmart LED
2,200K: High Pressure
1,900K: Candle
LED Color Temperature Correlation Example

LIGHT AND SHADOW

2017. 02 SWEET DRAWING STUDY

BY GORGONZOL



แบบฝึกหัดส่วนที่ 3

1. จงอธิบายการเตรียมพื้นที่เพื่อการจัดนิทรรศการ
2. แสงและเงาคืออะไร เกี่ยวข้องอย่างไรกับการจัดนิทรรศการ
3. อุณหภูมิสีส่งผลกระทบอะไรต่อการออกแบบนิทรรศการ
4. จงอธิบายขั้นตอนการให้เฉดสีแก่วัตถุ
5. จงให้คำนิยามสีโทนร้อนและสีโทนเย็น

What’s the Difference Between VR, AR, MR, and 360?

medium.com/iotforall/whats-the-difference-between-vr-ar-mr-and-360-139fcf434585

October 29, 2017

Know the difference to make sense of our new digital worlds.

The influx of new terms corresponding to today’s technology advancements have some of our heads spinning while others concede to carrying a handy-dandy pocket guide of acronym definitions.

What do the terms VR, AR, MR, and 360 even mean, and how to they relate to each other?

Virtual Reality

To start, let’s look at virtual reality, or VR.

Arguably the most established new reality-tech, virtual reality has actually been around for decades. After years of popularity in the gaming industry, we are now seeing it branch off into more practical applications, some of which are outlined in the AR/VR in Education series Part 1, 2 and 3.

But, what is virtual reality?

In the most basic of explanations, virtual reality is a way to immerse users in an entirely virtual world.

As Samsung VR puts it, in virtual reality, even an ostrich can fly.

In more elaborate setups, additional senses are utilized. In VR arcades, guests are often strapped into contraptions which simulate movement, sound is customized, air may be blown on the subjects to mimic the feelings our brains expect in certain situations, and some sort of handheld tools are used to allow user interaction within the environment.

The VR arcade in the Mall of America, Smaaash, utilizes movement and interaction to immerse players in games. | Photo courtesy Kare 11.

Commonly, new users will purchase a cheap $49 headset off of a Target shelf, insert a smartphone, and enjoy the thrill of riding a roller coaster. This experience wouldn't be considered true virtual reality, though.

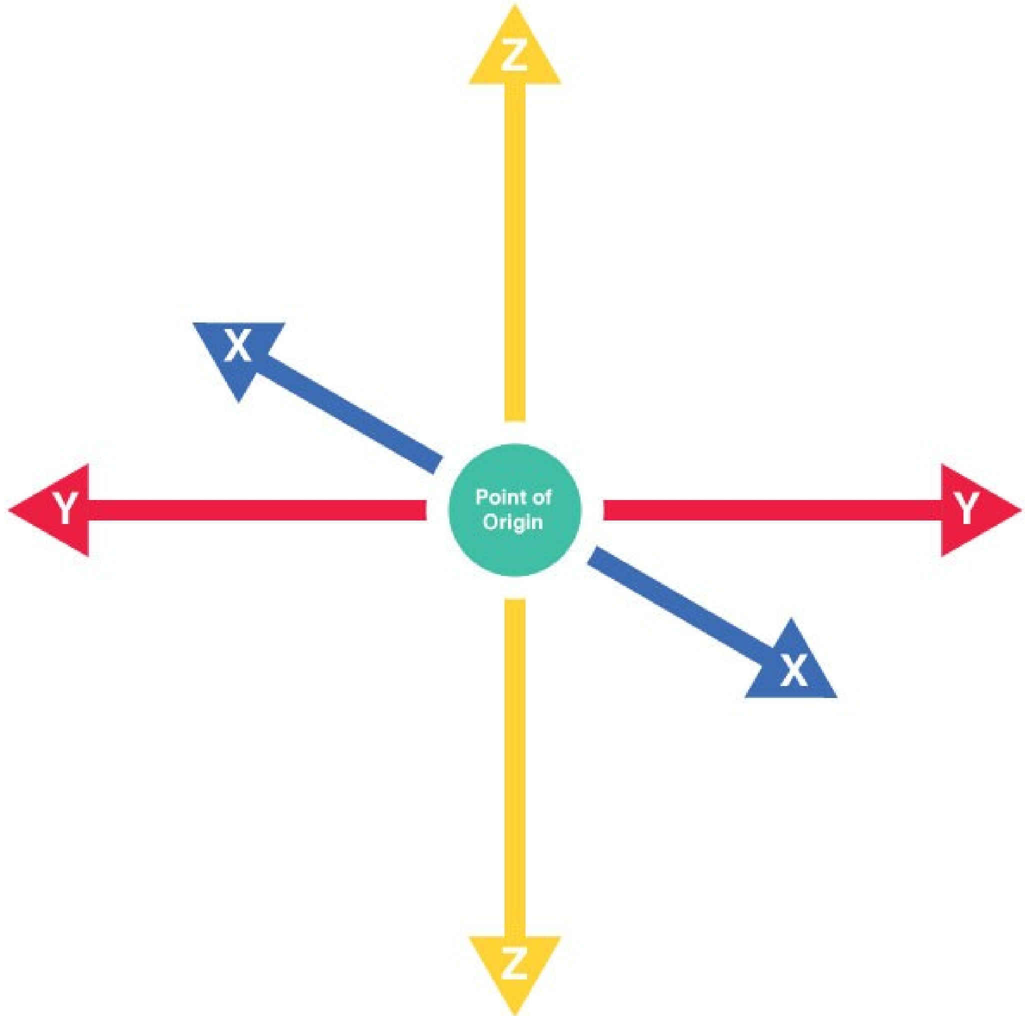
A true VR environment will engage all five senses (taste, sight, smell, touch, sound). Since this is not always possible, a key indicator of whether or not you are in virtual reality often relies on the "degrees of freedom" offered.

Six Degrees of Freedom

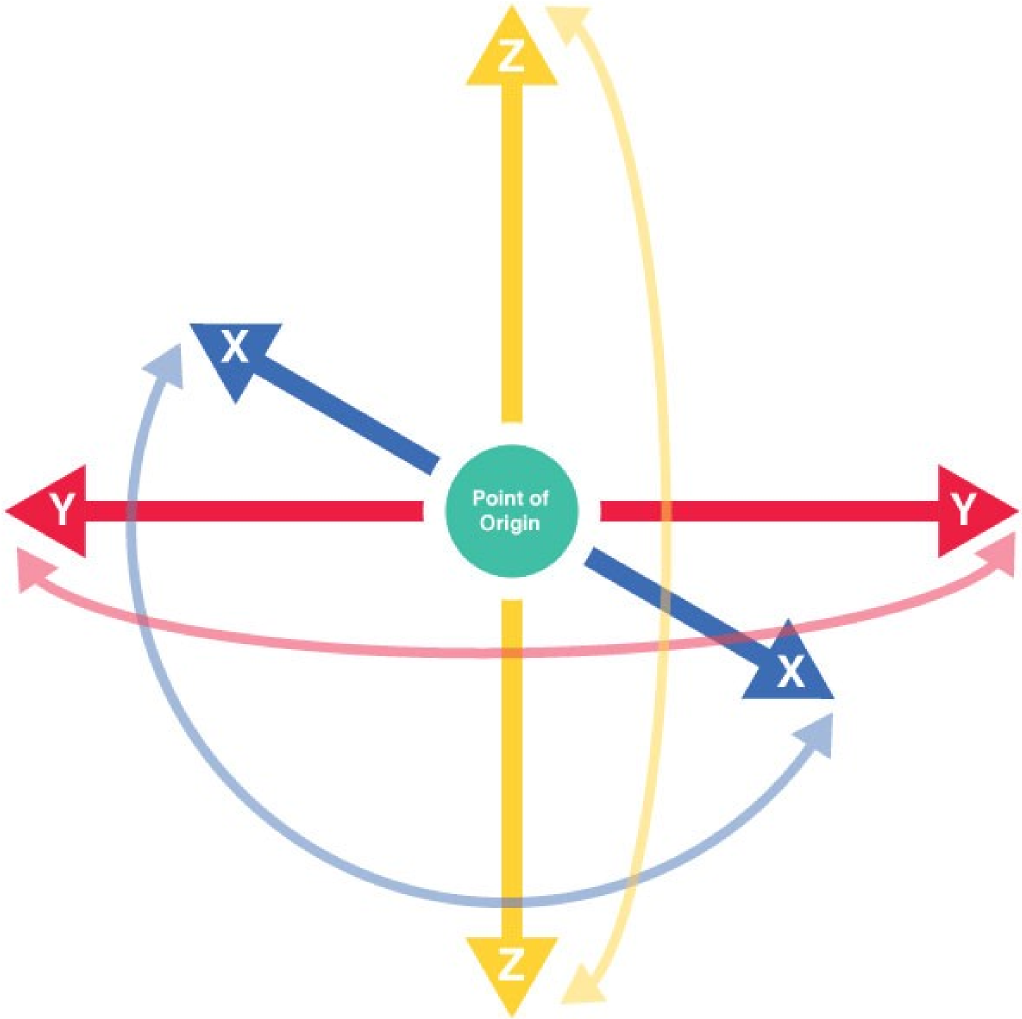
Before moving on to the defining qualities of 360 video, we must first define degrees of freedom (DOF), as those are a good benchmark helping to determine whether a particular experience is virtual reality or 360 video.

Degrees of freedom refers to the amount of flexibility a user is given within an environment.

Take a moment to remember those math lessons you took where they drilled in X, Y, and Z axises.



In our current example, the X axis represents backward and forward. The Y axis is left and right, and the Z axis is up and down. Where the three lines intersect is the point of origin.



Combining the three axises and their circular representations gives us a 360 degree compilation.

If you were to look up and down, left and right, backward and forward (and any combined variation within these parameters), you would find you could see the entire area around you.

You can do this now as you look around the space where you currently sit, and you can do this when you put on a VR headset.

So, you have 360 degrees of viewing, but where does the “freedom” part come in?

While you have the option to look around in a 360 spherical world, and there is a certain level of freedom associated with that (after all, you can’t do that when watching a normal cinematic movie), this is not truly what is intended when referring to degrees of freedom.

Instead, DOF intends to determine whether or not you can move or manipulate things on those same axises. Can you jump backward and forward? Can you slide from left to right? Are you able to walk up and down stairs?

Since you can do these things in real life, virtual reality, if it's to be truly virtual, must also allow for these six degrees of freedom.

360 Video

So, onto 360 video. This is often lumped into the VR category, but the differences are fairly finite.

The mistake commonly happens based off of the ability to watch 360 videos in a virtual reality headset. But, claiming a 360 video is VR simply due to the gear being utilized is similar to saying, "I'm sitting in a car, so I must be driving."

In fact, a 360 video can be viewed in many ways. You might watch one on your phone as you scroll through your Facebook feed, using your finger to move around to get the 360 degree perspective.

Or, perhaps you are perusing YouTube videos and use your mouse to gain the 360 view. And, maybe you really are wearing a VR headset to feel fully-immersed in the video playing.

However, aside from sound, you are missing the other senses, and you are lacking true freedom. Without being able to move through the 360 degree environment at will, you are not being given the six degrees of freedom required for VR.

Sure, you might be traveling along as a bystander by way of a 360 degree GoPro camera strapped to a biker's handlebars, but you do not get to control the movement.

What's more, you are not allowed to interact with the environment. When your biker crashes after swerving to miss the pajama-clad pygmy goat herd, you do not have the opportunity to snag one of the adorable, hoofed fur babies.

In VR, in the same scenario, you were the one riding the bike. You controlled the path you took, and when you crashed, you were able to interact and pick up the sleepy, little goat.

It can be argued that Pokemon Go is what popularized AR.

Augmented Reality

It’s fitting that our ill-fated bicycle travel gained us a frisky, tap-dancing mammal, henceforth referred to as Victor, as he’ll be useful in the upcoming explanations of augmented and mixed reality.

Beginning with augmented reality, or AR, we can look at standard definitions for “augmented” to discover that the word indicates it’s adding something (in this case, reality) to make the original bigger or better than before.

How does one make our own reality better, though? Well, with Victor, of course.

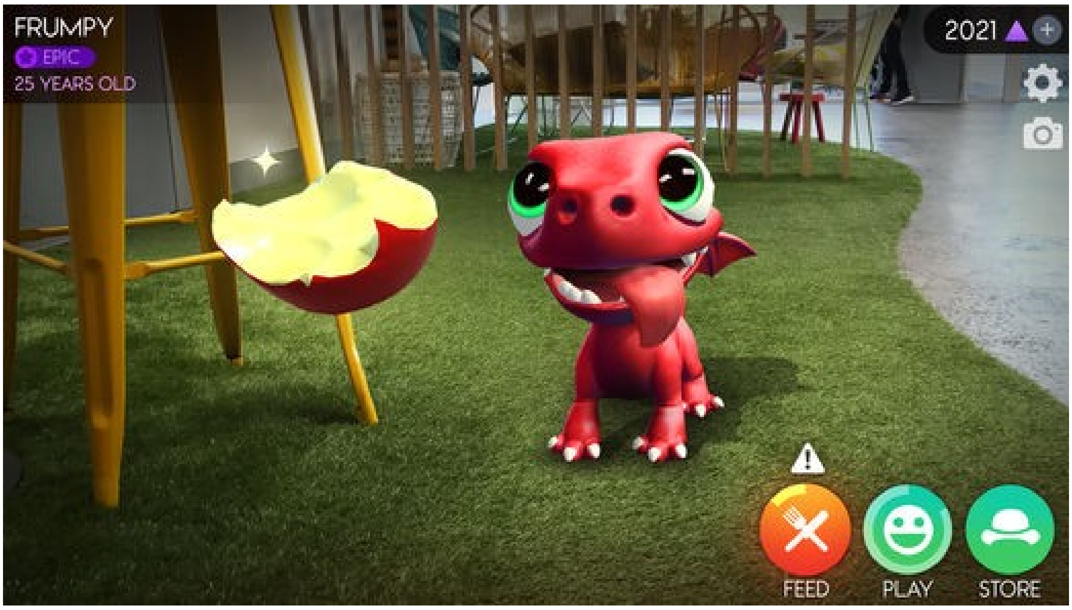
At this point, we can abandon the idea of the six degrees of freedom, as augmented reality exists on top of our own world, so it provides as much freedom as you are given within your normal life.

AR utilizes your existing reality and adds to it utilizing a device of some sort. Handheld devices, such as smartphones, are popular at the moment, but custom headsets are also being used.

To learn more about how some of the companies dabbling in smartphones are competing in the AR space, read ARCore vs. ARKit: Google Counters Apple.

If we take a peek at some popular examples, we can useSnapchat's new AR bitmojis. By indicating a level surface, a selection of options appear allowing you to see your bitmoji acting out certain scenarios. You can move around the image, giving you the sense that something is there, though it can only be seen through the AR-enabled device.

Taking things a step further, AR Dragon offers the ability to turn an augmented reality creature into your needy, yet adorably lovable, pet. Increasing the interactivity, you can feed the fantastical beast while taking it along on all your daily adventures.



While the dragon is quite delightful, we must tend to our Victor. It’s the responsible thing to do, after all, since we took responsibility for the little guy when we claimed him from the side of the road.

Our AR Victor would be a friendly companion as we move throughout our day, and while we may be able to interact with him via pushing buttons to feed him and the such, he’ll always be overlaid on our environment.

Magic Leap, a leader in the MR industry, is teasing an upcoming announcement.

Mixed Reality

In a similar fashion to how 360 video is often mistaken for virtual reality, mixed reality, or MR, is often incorrectly interchanged with AR.

In augmented reality, we took Victor on a trip through our day. He was very well-behaved pygmy goat, and he plodded along behind us, jumped onto desks, and ate the fictional food we provided.

In mixed reality, though, Victor can better embrace his feisty side, as he is more seamlessly intertwined with our real world.

A bit of a blend of virtual and augmented reality, mixed reality aims to fuse digital and real worlds for an entirely new experience.

Now, instead of Victor sitting atop your antique fainting couch or in front of your oblivious, hairless cat, he might hide under the pile of laundry you're too lazy to put away. Or, maybe he has a head-butting contest with himself in the full-length mirror stationed in the bathroom.

In AR, Victor can sit atop a desk. In MR, Victor could be behind the desk.

The key difference is that in mixed reality, the digital portions of the environment are more aware of what exists in the real world, and are, therefore, able to more closely represent true intermixed interactions.

Recap

In short, if you skipped to the end of this article hoping for a quick recap (thereby missing the introduction of the rambunctious Victor), the four definitions can be simplified in the following ways:

Virtual Reality

A totally immersive experience replacing the "real" world with an alternate one. Interaction with, and movement through, the alternate world via six degrees of freedom is almost always required.

360 Video

A spherical video allowing the viewer to see in all directions, though there is no freedom to interact with, or move throughout, the imagery.

Augmented Reality

Overlaying imagery on an existing space, to be seen through an enabled devices, such as a smartphone or glasses. Interaction is optional, but not required.

Mixed Reality

Placing new imagery within a real space in such a way that the new imagery is able to interact, to an extent, with what is real in the physical world we know.

For now, we must say our farewells to Victor and allow him to return to the pygmy goat slumber party we so rudely interrupted. As the different realities become more advanced, though, perhaps we'll see him again, clamoring about on the furniture and trying to head-butt the roommate's pesky Chihuahua.

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What is Virtual Reality?

marxentlabs.com/what-is-virtual-reality/

June 3, 2015

What is Virtual Reality? [Definition and Examples]

By Dr. Brian Jackson, PhD on June 3, 2015

*For more information on how retailers are using mixed commerce solutions, check out our **Mixed Commerce Glossary**, which defines the terminology being used by businesses to describe the changes currently sweeping retail. For a rundown of the biggest developments in Virtual Reality and Augmented Reality from the past 12 months, check out our 2016 roundup, **Augmented Reality and Virtual Reality – The Year In Review**. And for a look ahead, check out the **5 top Virtual Reality and Augmented Reality technology trends for 2017**.*

Virtual Reality (VR) is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Instead of viewing a screen in front of them, users are immersed and able to interact with 3D worlds. By simulating as many senses as possible, such as vision, hearing, touch, even smell, the computer is transformed into a gatekeeper to this artificial world. The only limits to near-real VR experiences are the availability of content and cheap computing power.

What's the difference Between Virtual Reality and Augmented Reality?

Virtual Reality and Augmented Reality are two sides of the same coin. You could think of Augmented Reality as VR with one foot in the real world: Augmented Reality simulates artificial objects in the real environment; Virtual Reality creates an artificial environment to inhabit.

In Augmented Reality, the computer uses sensors and algorithms to determine the position and orientation of a camera. AR technology then renders the 3D graphics as they would appear from the viewpoint of the camera, superimposing the computer-generated images over a user's view of the real world.

In **Virtual Reality**, the computer uses similar sensors and math. However, rather than locating a real camera within a physical environment, the position of the user's eyes are located within the simulated environment. If the user's head turns, the graphics react accordingly. Rather than compositing virtual objects and a real scene, VR technology creates a convincing, interactive world for the user.

Virtual Reality technology

Virtual Reality's most immediately-recognizable component is the head-mounted display (HMD). Human beings are visual creatures, and display technology is often the single biggest difference between immersive Virtual Reality systems and traditional user interfaces. For instance, CAVE automatic virtual environments actively display virtual content onto room-sized screens. While they are fun for people in universities and big labs, consumer and industrial wearables are the wild west.

With a multiplicity of emerging hardware and software options, the future of wearables is unfolding but yet unknown. Concepts such Google Cardboard, Samsung GearVR and Epson Movario are leading the way but there are also players like Meta, Avegant Glyph, Daqri and Magic Leap who may surprise the industry with new levels of immersion and usability. Whomever comes out ahead, the simplicity of buying a helmet-sized device that can work in a living-room, office, or factory floor has made HMDs center stage when it comes to Virtual Reality technologies.

Virtual Reality and the importance of audio

Hearing is arguably more relevant than vision to a person's sense of space and human beings react more quickly to audio cues than to visual cues. In order create truly immersive Virtual Reality experiences, accurate environmental sounds and spatial characteristics are a must. These lend a powerful sense of presence to a virtual world. To experience the binaural audio details that go into a Virtual Reality experience, put on some headphones and tinker with this audio infographic published by The Verge.

While audiovisual information is most easily replicated in Virtual Reality, active research and development efforts are still being conducted into the other senses. Tactile inputs such as omni-directional treadmills allow users to feel as though they're actually walking through a simulation, rather than sitting in a chair or on a couch. Haptics, also known as kinesthetic or touch feedback, has progressed from simple spinning-weight “rumble” motors to futuristic ultrasound technology.

Major players in Virtual Reality

Oculus Rift, Oculus VR and Facebook

Perhaps the largest silhouette on the Virtual Reality horizon is cast by Oculus VR, the makers of the Oculus Rift headsets. Originally funded as a Kickstarter project in 2012, and engineered with the help of John Carmack (founder of Id Software, of Doom and Quake fame), the company became the de facto leader in Virtual Reality hardware for video games. After Facebook bought Oculus in 2014, social experiences via VR became an additional priority for the company. With their more recent acquisition of Surreal Vision, a 3D scene reconstruction research group from England, Oculus is poised to bring telepresence to the VR headset. While two versions of Oculus headsets have already been released to developers, with a third on the way, the customer version is set to be released in early 2016.

Microsoft HoloLens

Microsoft HoloLens is shaping up to be another formidable competitor in the Virtual Reality market. Unlike the Oculus Rift, Microsoft’s ambitious research teams are basing their display on holographic technology. While this lends itself to Augmented Reality (or, as Microsoft prefers to call it, “mixed reality”) more than VR, it’s clear that the display technology alone is meant to be a jumping-off point for virtual experiences to come.

Sony’s Project Morpheus

Sony’s entry into the market, Project Morpheus. attempts to streamline what Oculus offers, with integration into the already-successful PlayStation game systems. Like the Oculus Rift, the Morpheus headset is scheduled for early 2016.

The Vive by Valve

Valve, makers of the wildly successful Steam platform for games distribution on PC, Mac OS, and Linux, have also thrown their hat in the ring. The Vive, to be manufactured by HTC, is to be the first of many headsets on an open platform called SteamVR. While development kits are to be released by the end of 2015, it’s not yet clear when the consumer version will become available.

Samsung GearVR

While the above VR companies have all shown promise in immersive head-mounted display technology, they tend to focus on the deep end of the pool: powerful computers or desktop PCs with gaming hardware. Samsung’s approach to VR has been different: the Gear VR uses Oculus head-tracking technology in combination with Android smartphones like the Galaxy Note 4 to power mobile VR experiences. Instead of dedicated display technology, lenses allow the phone's screen to act as a stereoscopic display, making the device simpler and less expensive than other options.

Google Cardboard

Not to be left out, Google's entry into VR came as a surprise during last year's I/O conference. The Google Cardboard is a do-it-yourself approach to mobile VR, is an enclosure for Android phones that can be built for less than twenty dollars. Several demos and games for the Cardboard SDK are already available on the Google Play store, and while the experience isn't quite as immersive or groundbreaking as other companies' offerings, Google's ad hoc Virtual Reality experiment shows a surprising amount of interest in even basic VR technology.

Magic Leap

On the other end of the Google spectrum, their 2014 investment in the mysterious Magic Leap startup (to the tune of $540 million along with a few of its venture capital partners) promises innovation in "light field" display technology, 3D mapping, gesture tracking, and telepresence. While their only engagement with the public so far has been a highly controversial Augmented Reality demo, many high-profile names such as venerable science fiction author Neal Stephenson are attached to Magic Leap, and their presence in the industry continues to challenge well-established brands, making them an unusual, but noteworthy company.

Carl Zeiss, Archos, Razer and Avegant

Many other companies are developing Virtual Reality headsets and other peripherals. From recognizable names, like Carl Zeiss and Archos to lesser-known companies such as Razer and Avegant, the coming VR renaissance electrifies an entire ecosystem of hardware manufacturers, software developers, and content providers.

How Virtual Reality is being used today

Unsurprisingly, the video games industry is one of the largest proponents of Virtual Reality. Support for the Oculus Rift headsets has already been jerry-rigged into games like Skyrim and Grand Theft Auto , but newer games like Elite: Dangerous come with headset support built right in. Many tried-and-true user interface metaphors in gaming have to be adjusted for VR (after all, who wants to have to pick items out of a menu that takes up your entire field of vision?), but the industry has been quick to adapt as the hardware for true Virtual Reality gaming has become more widely available.

Virtual Reality and data visualization

Scientific and engineering data visualization has benefited for years from Virtual Reality, although recent innovation in display technology has generated interest in everything from molecular visualization to architecture to weather models.

VR for aviation, medicine and the military

In aviation, medicine, and the military, Virtual Reality training is an attractive alternative to live training with expensive equipment, dangerous situations, or sensitive technology. Commercial pilots can use realistic cockpits with VR technology in holistic training programs that incorporate virtual flight and live instruction. Surgeons can train with virtual tools and patients, and transfer their virtual skills into the operating room, and studies have already begun to show that such training leads to faster doctors who make fewer mistakes. Police and soldiers are able to conduct virtual raids that avoid putting lives at risk.

Virtual Reality and the treatment of mental illness

Speaking of medicine, the treatment of mental illness, including post-traumatic stress disorder, stands to benefit from the application of Virtual Reality technology to ongoing therapy programs. Whether it's allowing veterans to confront challenges in a controlled environment, or overcoming phobias in combination with behavioral therapy, VR has a potential beyond gaming, industrial and marketing applications to help people heal from, reconcile and understand real world experiences.

Dr. Brian Jackson is a Senior Research Scientist at Marxent. He holds a PhD in Computer Science with a focus in computer vision.

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Interactive tech in the classroom; it's all about engagement

Martin Large, Steljes, CEO

Devices which promote engagement and collaboration bring huge value to the learning environment, says Martin Large, Steljes, CEO

Posted by Hannah Oakman | January 13, 2016 | Events

Interactive technology has become almost commonplace in all areas of our lives — from choosing the way we watch television at home, and how we collaborate with colleagues at work, to how we learn and participate in lessons in the classroom. While the debate about technology in the classroom continues, there's no denying that the use of devices and systems that promote engagement and collaboration bring tremendous value to the learning environment.

Improving the learning experience

In recent research, commissioned by Steljes and carried out by survey company Censuswide, we found that teachers were in agreement — almost all of those surveyed (97%), both primary and secondary school educators, said they agreed that interactive technology in the classroom delivers an improved learning experience.

Whether that's the interactive whiteboard or panel, interactive touch screens, or laptops, tablets and interactive tables, technology-assisted learning can deliver benefits to both students and teachers. The research found that interactive whiteboards were the most used technology (82%), followed by laptops (64%), tablets (49%) and interactive projectors (42%).

The benefits of interactive technology

The overall objective of having these types of technology in the classroom is to make the learning process more encompassing — interactive technology unites students in the classroom and caters for different learning styles — more collaborative, and more engaging. Students are not just engaging with the teacher, but also with each other. The teaching process has changed dramatically over the years and students are no longer linear learners, taking in a one-way flow of information from the teacher. Instead, there's a strong focus on team work and participation. While technology is not solely responsible for this shift, it is playing a definitive role in supporting and enabling this approach.

In fact, according to the research, teachers identified specific benefits that technology use brought to the classroom — 58% said it increased engagement with students and 53% said it helped create a dynamic learning environment. Other benefits included: creating a positive learning experience (37%) and encouraging interactivity and collaboration among students (31%).

The use of technology in the classroom makes sense. Firstly, it encourages behaviours (like teamwork) that are much needed in the workplace and other areas of life, and secondly for the so-called generation of millennials or digital natives, the presence and use of technology is standard.

Not all smooth sailing…

There are of course barriers to the use and increased adoption of interactive technology. These include limited budget, insufficient preparation time, and lack of understanding of how the technology works. However, the main barrier uncovered by our research was 75% of teachers felt their students were more tech savvy than they were. And, as a result, 72% of respondents felt they weren't using interactive technology to its full capability.

Going forward

The good news is that given the pace of change within the education technology market, and the scope of products, systems and expertise available, these barriers can be successfully overcome. From using innovative funding methods like "as-a-service" models to pay for technology, to ensuring teachers receive extensive training on new technologies, working through these obstacles will ensure schools and students can fully benefit from the use of interactive technology in the classroom.

Martin Large is CEO, Steljes

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The world's best tech exhibitions

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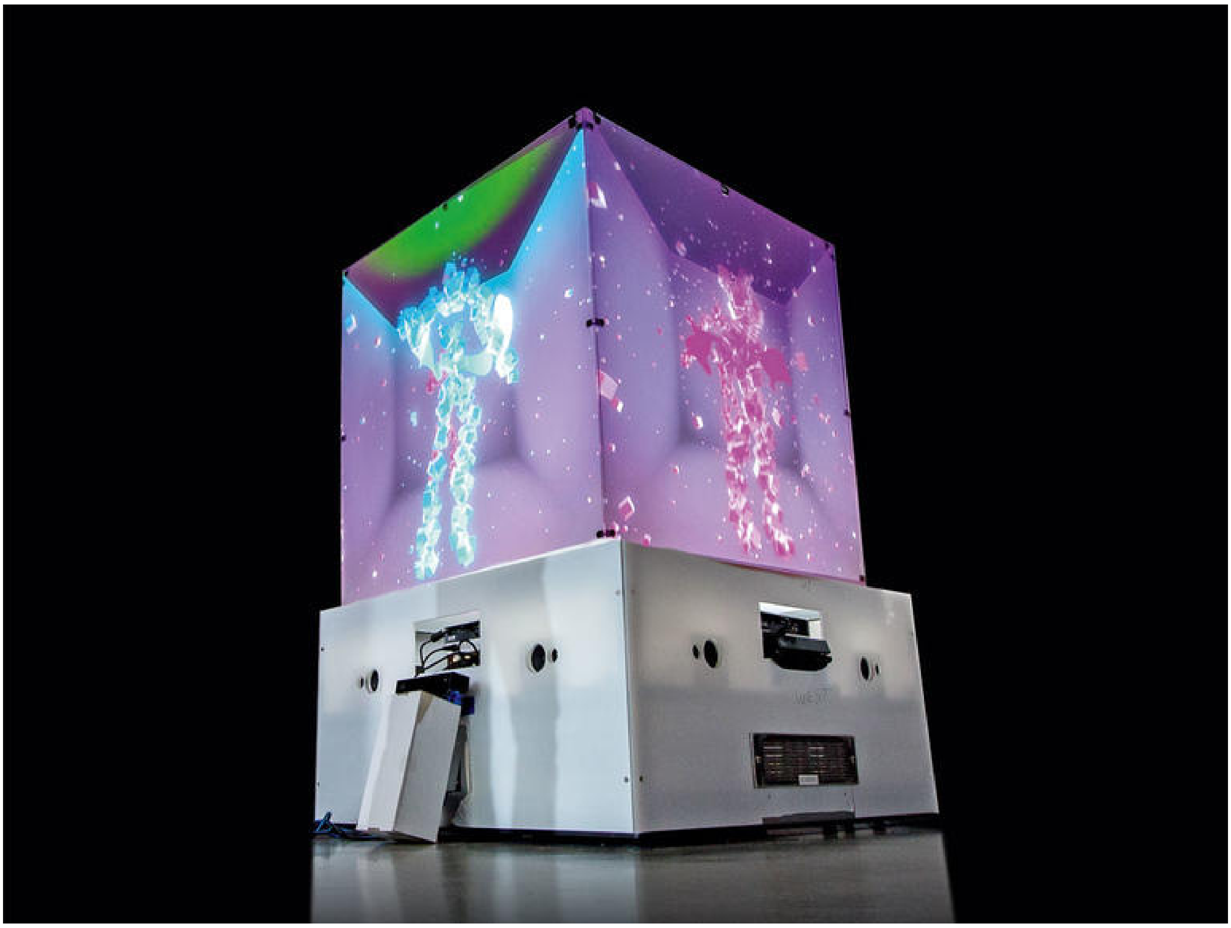
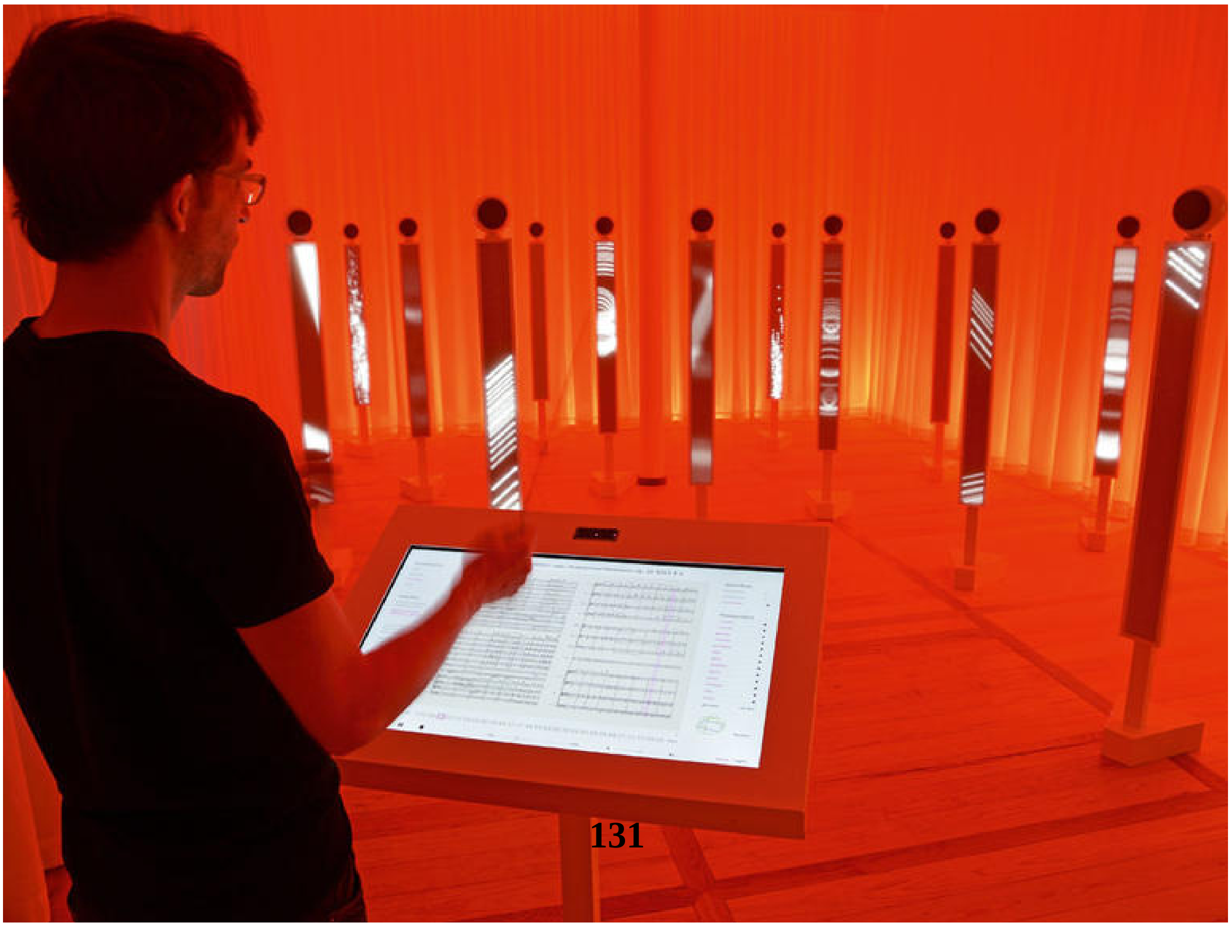
By Mark Wilson

The Techsperimenters





Familiar gadget faces served with a creative, interactive twist

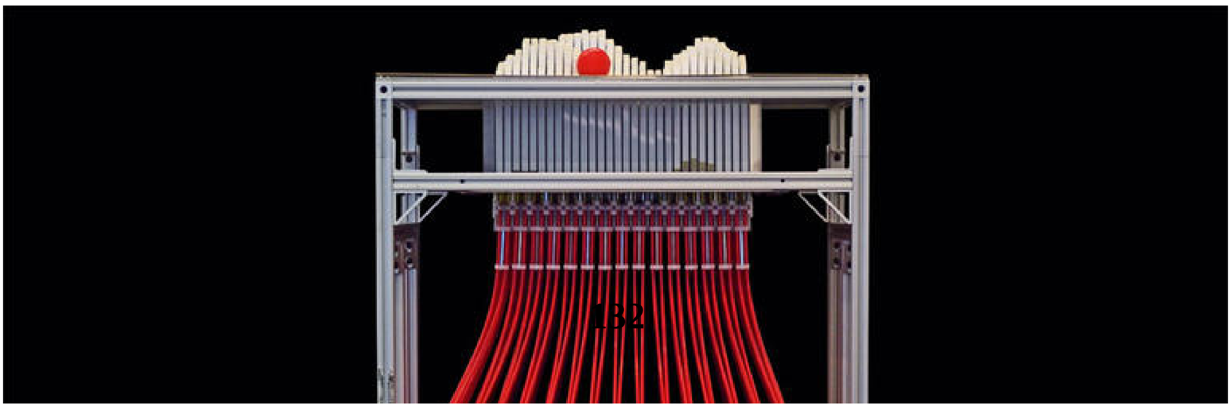
Microsoft CubeWhere: Microsoft Visitor Center, Washington, USA**When:** permanentSo, Microsoft's invented a Minecraft portal? Not quite yet. Instead, the Cube is a "canvas for a new kind of creative expression" (according to Microsoft's senior director of brand strategy, Michael Megalli) or, in this case, a next-gen version of Dance Central. A four-foot-square box containing five projectors and four inter-connected Kinects, it lets jigging people on each side see their own and each other's moves depicted by virtual cubes and ribbons. That might sound pretty much like an LSD simulator, but Microsoft has big plans for the idea, including making giant Cubes that talk to each other. In the meantime, get twerking...microsoft.com

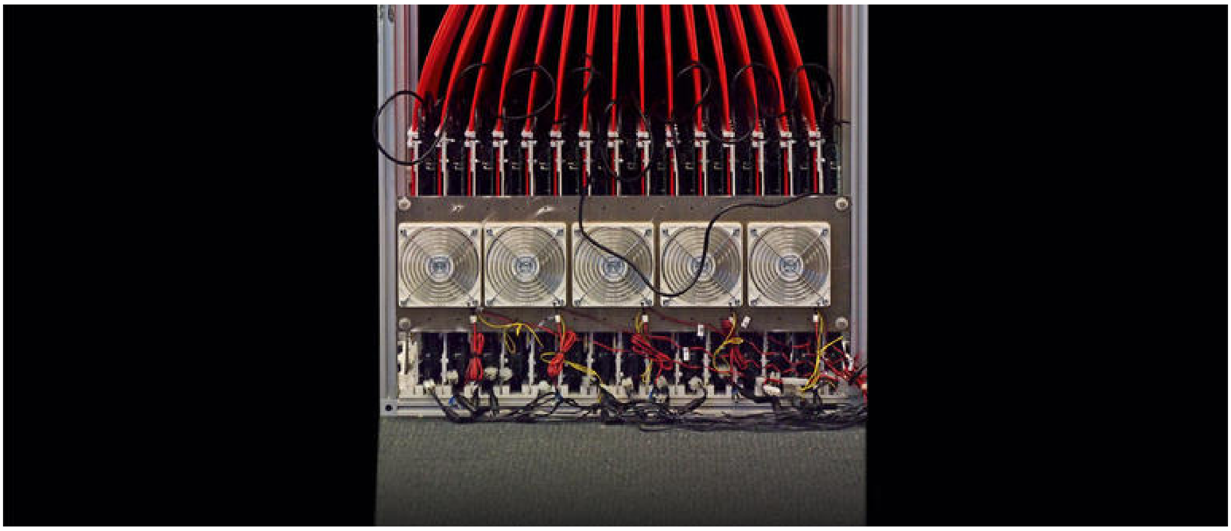
EffektoriumWhere: Mendelssohn-Bartholdy Museum, Leipzig, GermanyThis ingenious installation uses the Leap Motion gesture controller to let you conduct a virtual orchestra. The tempo and instruments respond to the (suitably exaggerated) flicks of your baton, while the touchscreen guides you through Beethoven's Fifth.mendelssohn-stiftung.de

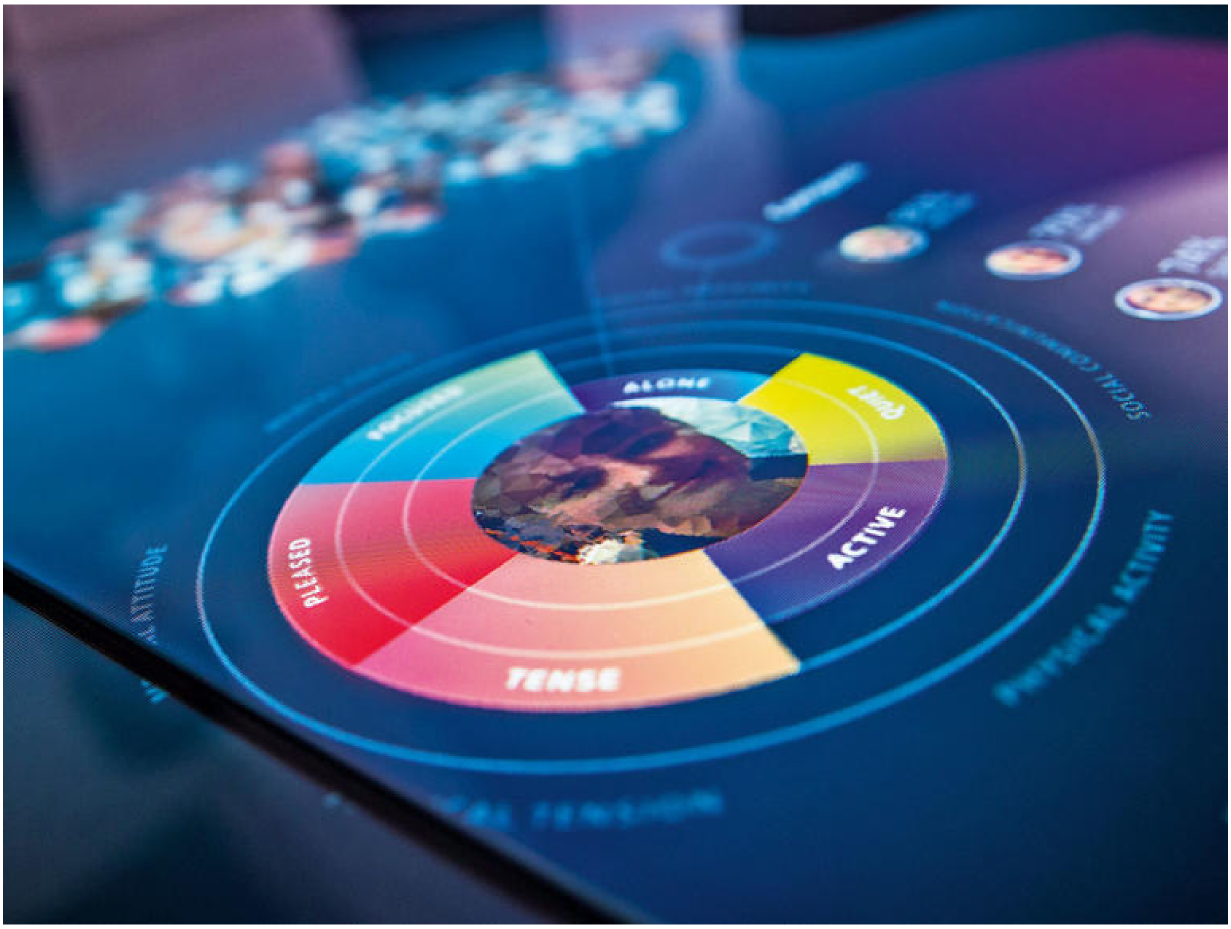
Drone Aviary When: April 2015 **Where:** V&A Museum, London, UK

Become a futuristic Alan Partridge by exclaiming "I know a cracking drone aviary" and taking your better half to this exhibition. Details about the indoor drone-fest are vague at the moment, but it will involve 'interactivity' and probably a faint whirring sound.superflux.in

The Futurists





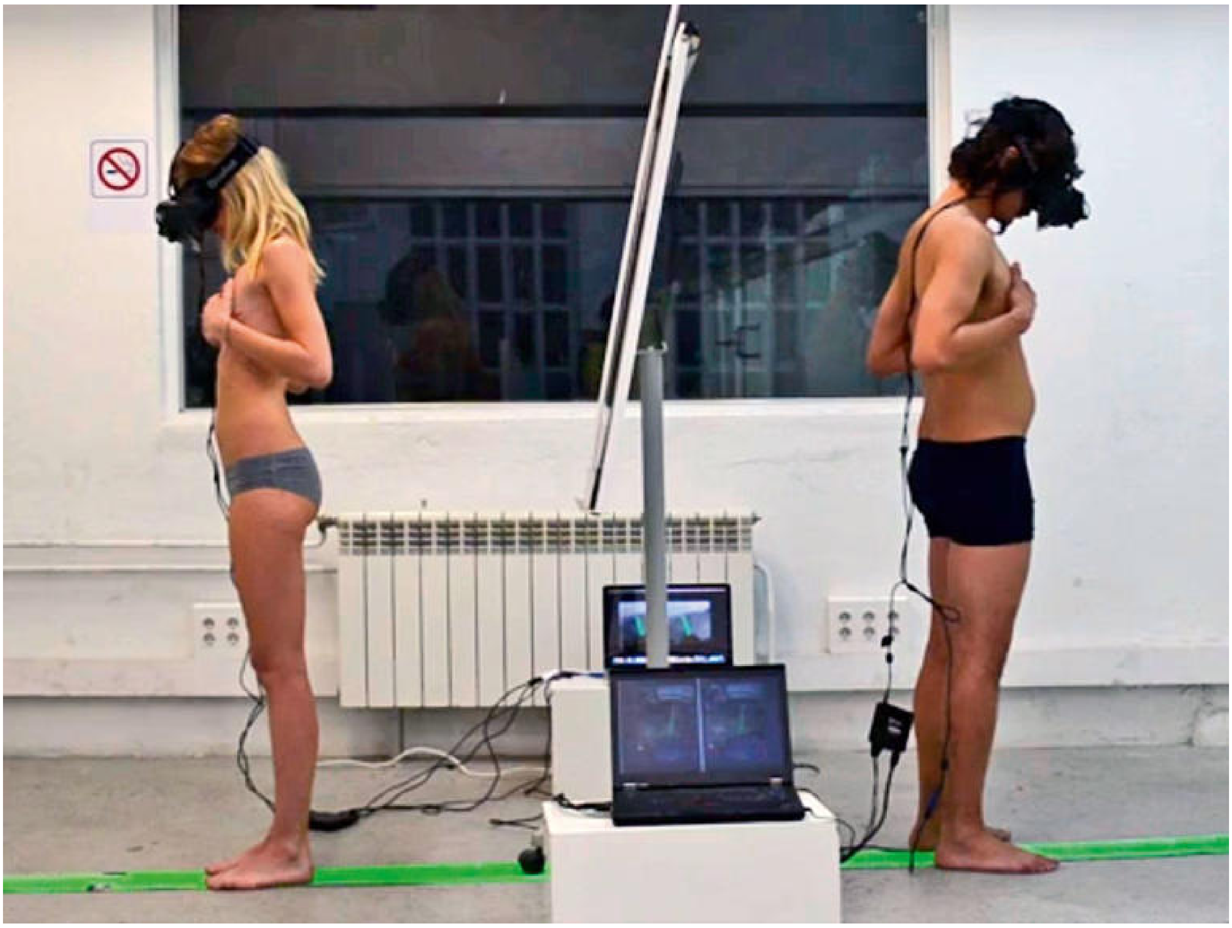


VR artefacts, wearables and telepresence

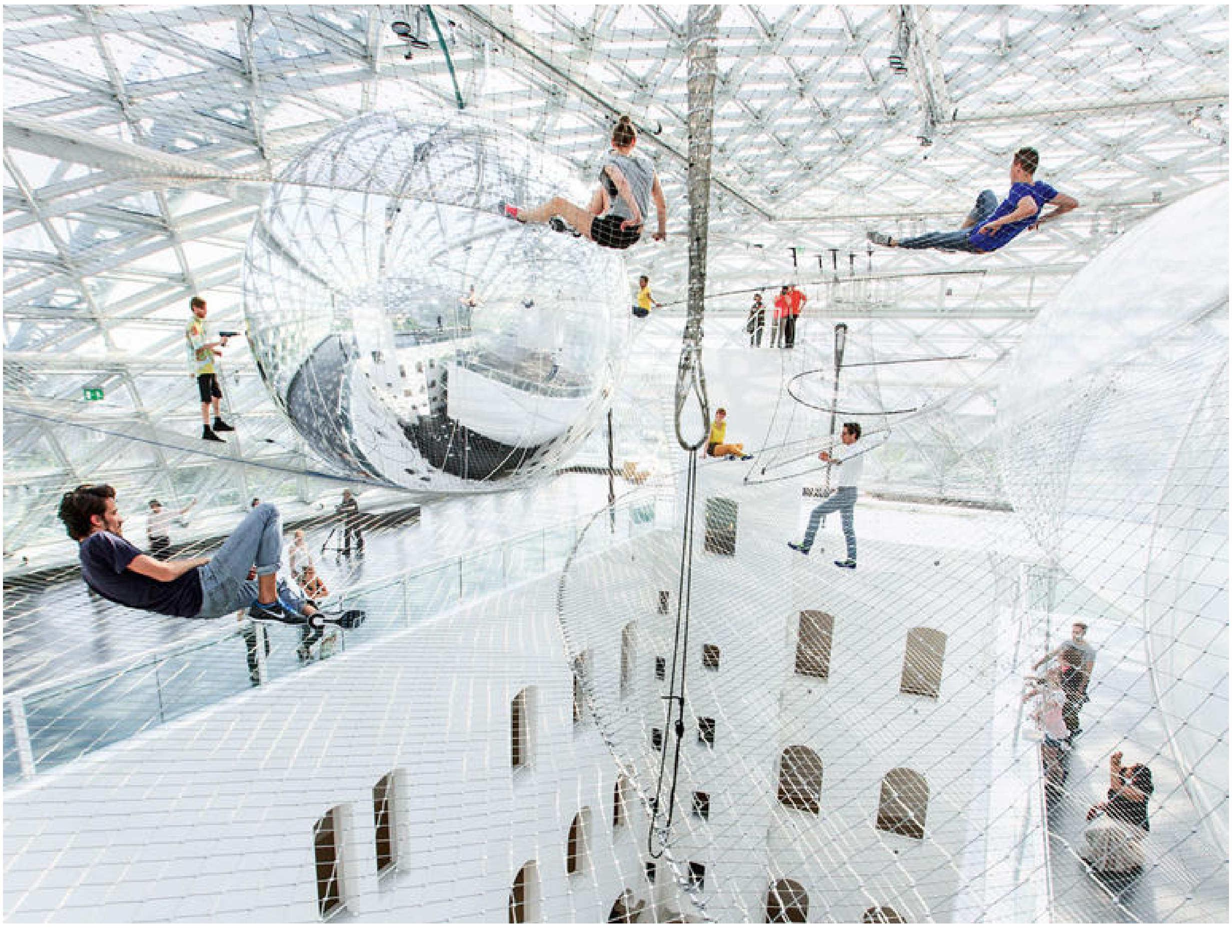
inFORMWhen: from 12 December 2014**Where:** Cooper Hewitt Design Museum, New York, USAHeading to the Big Apple this Christmas and want to see the future of Skype? Pop in to see this 'dynamic shape display' at the Cooper Hewitt Design Museum. It's a marvel of telepresence, allowing a remote user to manipulate objects on the other side of the world in real-time. The project's inventors, from MIT's Tangible Media Group, see it as a step towards moving from old-school graphical user interfaces to the tactile user interface and a world of 'radical atoms'. This would see the likes of inFORM combine with new materials that can change their form and appearance as easily as pixels.tangible.media.mit.edu

Body Metrics Where: The Tech Museum of Innovation, San Jose, USAThink your fitness band knows you? Wait until you step inside this, which kits you out with a mind-reading NeuroSky EEG headset and stress-tracking sensors to record your emotions. Go to the 'Data Pool' at the end for a full report of your visit. Well, it beats a gift shop.thetech.org

The Machine To Be Another Where: touring, venues tbcThis project's 'Gender Swap' sees two people don Oculus Rifts with attached cameras. Each person's view is then piped to other person which, when combined with agreed set movements, creates a convincing body-swapping illusion. The wider project will be touring festivals next year.themachinetobeanother.org



The Big Kids



The fun-loving, techy alternatives to galleries

The PoolWhere: Canal Convergence, Arizona, USA**When:** 26 February 2015 – 1 March 2015Inspired by a night of splashing in tidal pools, this light show is more than just a circle-tastic dancefloor. Each of the 106 platforms contains pressure sensors, an Arduino board and an LED strip to ensure your steps and jumps bounce light around The Pool. Unusually, there's no central computer coordinating the effect. Instead, each platform follows a simple set of propagating rules that ensure the light show varies every time. It was so popular at the Burning Man festival, its designer Jen Lewin decided to tweak the software to make it less confusing when it's attacked by hordes of moth-like humans.jenlewinstudio.com

In OrbitWhere: Kunstsammlung Nordrhein-Westfalen, Dusseldorf, GermanyIf anyone asks you if there are any playgrounds for adults, tell them about Tomas Saraceno. The Argentinian artist's 'Cloud Cities' let you frolic around in giant bubbles, and now the 25m-high In Orbit has steel nets to give a sense of weightlessness.tomassaraceno.com

Human HarpWhere: Clifton Suspension Bridge, Bristol, UK**When:** 15 March 2015What better way to celebrate the 150th birthday of Brunel's Clifton Suspension Bridge than by turning it into a giant harp? Previously used on the Brooklyn Bridge, the project processes vibrations so that 'movicians' can play structures like instruments.humanharp.org

The Crowdsourcers

Because art in the future will be co-authored by the masses...

Co(de)FactoryWhere: Tekniska Museet, Stockholm, Sweden**When:** until 30 August 2015It might look disturbingly like the egg chamber in Prometheus but there are no aliens lurking here, just an interactive 3D printing project. Part of Google's roaming DevArt exhibition, Co(de)Factory lets you submit your own object designs (or modify other people's) via 3D-modelling tools that are available online or at the exhibition. Each day, the best design is then fabricated by the 3D printer in front of the museum's visitors. The project's designer Karsten Schmidt says his aim is to show that "authorship is actually not that important, it's the outcomes that count". In other words, the days of £100million Picassos are over.devartcodefactory.com

Amateur Intelligence RadioWhere: St Paul's Union Depot, Minnesota, USAA historic building now hosts its own radio chat show. Combining stories, real-time data and the building's own thoughts and memories, the show is automatically generated then delivered in a Siri-like voice online. airstories.mn

Talking Statues Where: London & Manchester, UKStatues aren't renowned for their cracking one-liners, but tap your NFC phone or scan the QR code on their purple plaques and you'll get a call from the real person (OK, an actor) telling you their story. The 'Fiducial Voice Beacons' project does the same for the pioneers of modern communication.talkingstatues.co.uk

The Luminaries

Well, who doesn't enjoy being befuddled by pretty lights?

CloudWhere: Light Festival, Ghent, Belgium**When:** 29 January – 1 February 2015There's no need to reach for your Fulton brolly under this cloud. A sculpture that's been built from around 6000 burnt-out light bulbs, it tempts crowds into making lightning effects on the surface by pulling strings dangling around them. Because there are only 250 lit bulbs creating the effect from the centre, it only consumes 20 amps of power (about the same as two household sockets). And

if this green version isn't quite techie enough for you, a larger installation called Cloud Ceiling uses motion sensors and can be found hovering in the ceiling of Chicago's brilliantly-named Progress Bar.incandescentcloud.com

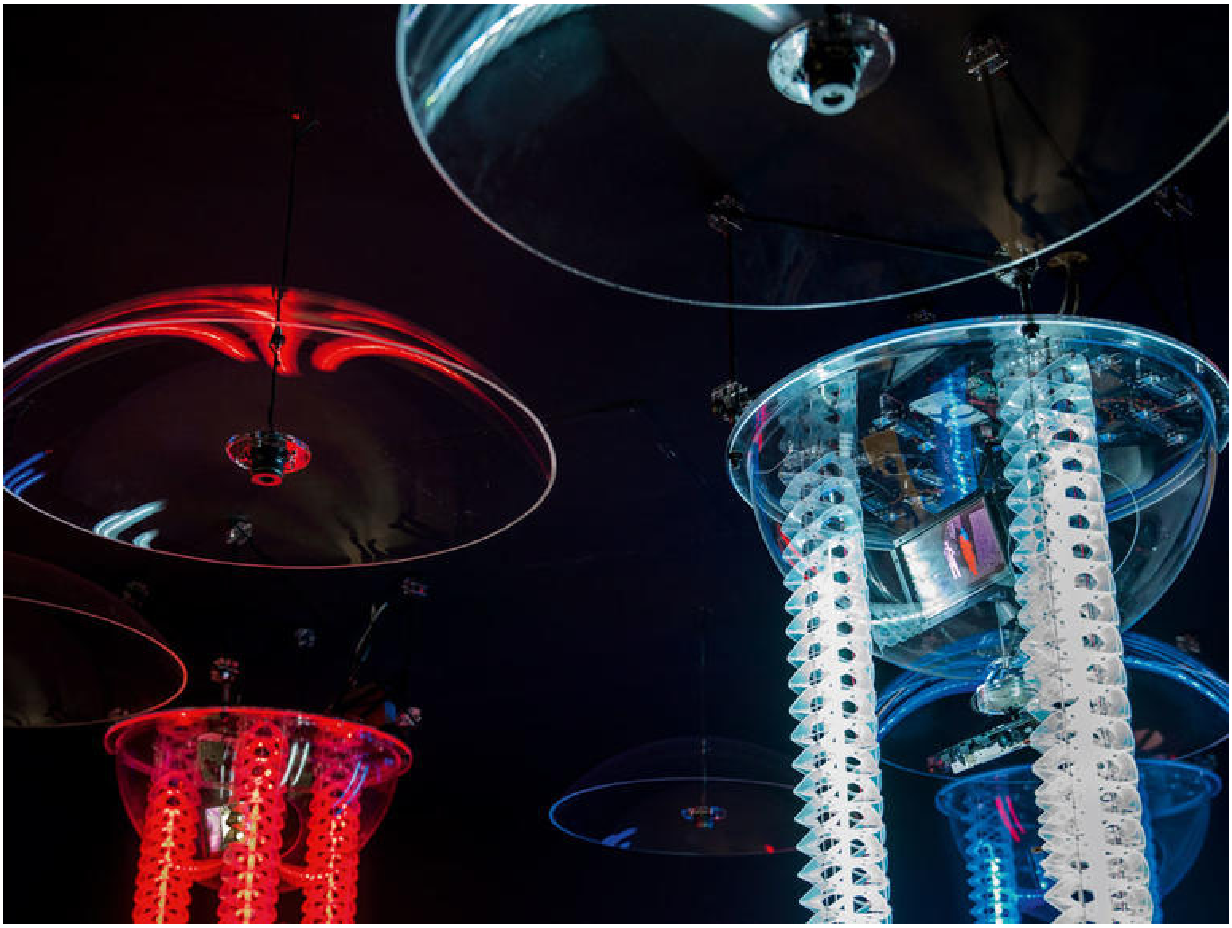
Theatre Ad Infinitum Where: The Barbican, London, UK**When:** Tuesday 20 – Saturday 24 January 2015Following rave reviews at the Fringe, this sci-fi show's portrayal of an Orwellian future where implants connect brains to cyberspace will be hitting London's Barbican. Expect 'intense darkness' and lots of lasers. theatreadinfinitum.co.uk

Play The House Where: Nod Building, Stockholm, Sweden**When:** until 31 December 2014Here's why the local shop is sold out of Philips Hues. Stockholm's Nod Building has been covered with dozens of the web-connected bulbs so people can play the game Mastermind (the 1970s peg-based puzzler) on the building's walls via the net.playthehouse.com

Robo-human relations

Computers with character

Petting ZooWhere: The National Museum of Science and Technology, Stockholm, Sweden**When:** until August 2015Visiting zoos once meant feeding hay to a friendly goat. These days, it involves hanging out with suspended robotic arms that use real-time camera tracking to respond to your petting and slowly develop their own personalities. All very good for robo-human relations, but we'd recommend standing elsewhere when Skynet gains consciousness.minimaforms.com



Thoughts on designing a virtual exhibition

Arnaud Taburet - Pierre Rivault

This article follows on from a dissertation written at the ESIEA under the supervision of Xavier Villebrun and with help from Jessica de Bideran. The idea is to work on the notion of a virtual exhibition by reflecting upon this "portmanteau word" and envisaging the creation of an exhibition based on virtual reality techniques. These notes were published in "L'atelier des médiations" and provide a summary of this exploratory study, supplemented and enriched by remarks made by Jessica de Bideran.

Is a definition impossible?

Examining the concept of a virtual exhibition requires us to first examine the concept of an exhibition. Exhibiting consists in collating material objects so as to place them in a dual discursivity based on both a sequence of spatial relations and a textual commentary. The exhibition as a whole forms a meaningful journey capable of conveying meaning to visitors and of making them think, dream and so forth. To avoid an exhibition being experienced as a weak semiotic object (Davallon, 1999) – an exhibition is not initially curated to say something but rather to show things – and provided the intention is that the exhibition should actually say something and thus serve a discourse, it is essential for it to be adequately arranged and presented. The exhibition can thus be seen as a media constructed by professionals with the aim of creating effects on the intended audiences. Depending on the exhibition's subject area, these effects may vary: they may be aesthetic, scientific, social, etc. The specific feature of the exhibition media is therefore that it deploys exhibited works or objects in an arranged and ordered space so that audiences may see, understand and appreciate them.

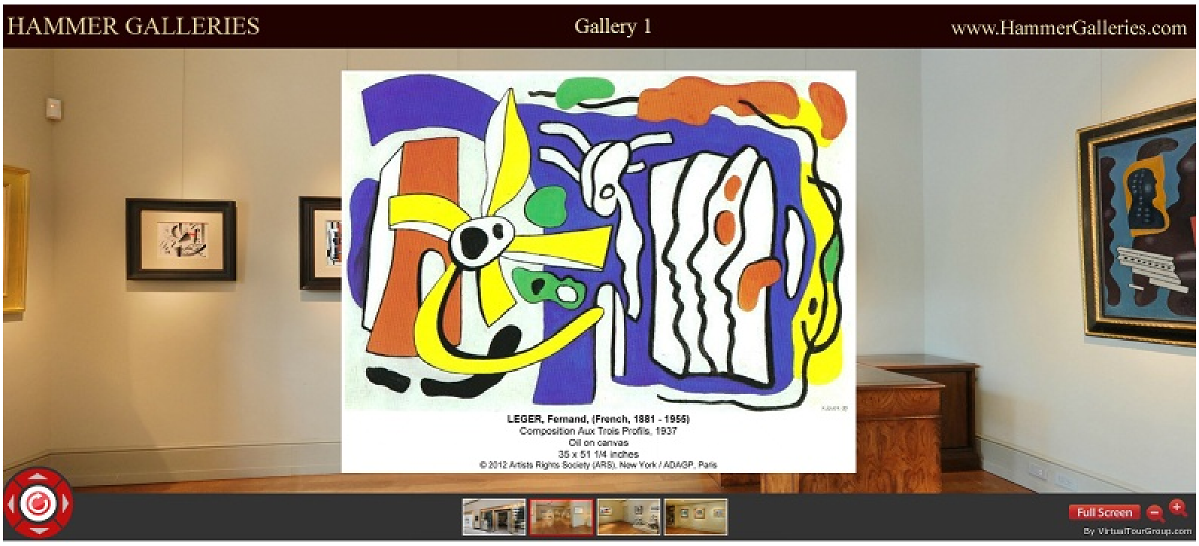
While adding the term "virtual" to this notion inevitably brings to mind simulation techniques used to produce a virtual reality, relatively few systems are actually based on synthesized imagery techniques which give people the feeling they are entering computer-generated universes. Thanks to its capacity to reference a known and recognized reality, the expression "virtual exhibition" has very quickly been taken up by numerous professionals who produce very different objects, while using the same expression to describe them.

Nowadays, this expression is used to refer to all manner of ways of presenting works, objects and digital documents on the Web. Some such exhibitions are specifically designed to be consulted online and do not have a counterpart in the physical world, for example the Bibliothèque nationale de France's renowned virtual exhibitions. Other virtual exhibitions act as the multimedia extension to a real-life exhibition and thus have multiple advantages because they perpetuate the curators' work beyond the few weeks when the exhibition is open in situ. This kind of virtual exhibition provides permanent, free access to all or part of the content of the original exhibition. It also means that complementary archive material can be added when there may originally not have been enough physical space for it to be displayed at the real-life exhibition.

This format has been extensively used by library professionals (Gautier, 2002), though it was for a long time restricted to putting heritage resources online to provide access to archive material to as many people as possible. However, it has been progressively acquiring use value as a tool of cultural mediation in its own right. Digitized documents can thus be consulted via a table of contents providing online users with access to a series of pages displaying images and associated texts, while links and browsing options give access to the following or previous pages. Sometimes there are also videos, interviews with specialists, digitized high-definition manuscripts, etc. The text formats are generally short so that they can be read directly on a screen. This kind of virtual exhibition remains fairly close to the format of a slideshow of documents. However, new life is being breathed into it thanks to easy-to-use tools that play on the spatial positioning of time-specific features. There is also new thinking on the construction of use scenarios and the showcasing of pictorial elements, and more specific reflections on mobile and tactile consultation practices. For example, the developments offered by tools such as Neatline go much further than Omeka's Exhibit builder plug-in, which is reminiscent of slideshows. Together with StoryMapJS, this is a clear example of ongoing change in this area …

Given this diversity and following on from Laure Bourgeaux's work, from which we borrowed the first two expressions (Bourgeaux, 2009), we have defined three types of virtual exhibition. Though they are similar in certain respects, they remain fundamentally different from one another given the techniques used and the aims involved.

- The "double editorial" type. This reproduces exhibition catalogues, hence the name virtual exhibition. It is a system centred on discourse and implies that the selection of documents places the receiver in a relatively "passive" position (e.g. the Medieval Manuscripts of Aquitaine);
- The "virtual reality" type. This provides a simulated experience of a real-life visit, encounter or consultation and enables users to move around virtually. It is a system centred on innovation and immersion but one in which discourse and interaction often remain limited, for example because this exhibition type reproduces the same limits as the physical space it portrays (e.g. the Lascaux caves);
- The "transmedia" type. This is a new form of online mediation which exploits a renewed, more open and participative regime of interaction. It is also characterized by the fragmentation of contents across different formats, with the aim of fully exploiting all the possibilities of digital sites and networks. This type of system breathes new life into online exhibition design in order to recombine the three logics necessary to produce a true "visitor experience", namely a "discursive logic" involving a statement, a "spatial logic" involving a visitor journey (or a narration) and a "gestural logic", with actions and interactions between the media deployed and the users (e.g. Le défi des bâtisseurs, or "Challenge of the Builders").



The Hammer Galleries (NYC), virtual and interactive visit, 2012.

Creating a virtual reality exhibition: Thoughts on design and interactions

As engineering students in a computing school, we were particularly keen to reflect on the “virtual reality” model, which first supposes creating a space in which to exhibit and showcase objects from an artistic, scientific, historical or memorial standpoint, etc. This space may be a simple cubic room whose walls are used to “hang” the objects, but it can also be more complex. Unlike reality, the virtual dimension enables the creation of a space limited only by our imagination … The space can thus be considered as a work of art in its own right. Finally, the space can be set up in such a way as to showcase the works more effectively (perhaps to the detriment of the discourse involved?), by playing on visitors’ perception, directing their viewpoints in a certain way, suggesting complex visitor journeys, etc. This type of thinking thus consists in developing a type of design that can transform a simple place into a space full of meaning thanks to the appropriate placing of the elements involved (walls, exhibited works and mediating objects), so as to create a complex apparatus that will actually change people’s perception of the objects on show. These may be presented in a precise, topic-based way, or chronologically, in order to tell a story, or oppose or defend ideas. They can also be arranged “randomly”.

Pierre Louis Carlier, design of the “Fables of the Flemish Landscape” exhibition, Lille Museum of Fine Art, 2012.

This work of designing the exhibition space, if it feeds into the way the objects presented are perceived by those receiving the information, can also create an atmosphere more or less conducive to interactions between the different people present within the expographic space. This “human” dimension is very often neglected in digital approaches to virtual exhibitions. To avoid these being simple libraries of digital images, there must be many interactions with the virtual world but also between users and with the real world.

In our view, then, three levels of interaction need to be considered.

- The first level of interaction that should be envisaged is that of directing movement through the exhibition space to best manage how visitors “walk” through the virtual universe. Different standpoints and methods of moving around the space are available and the choices made alter visitors’ perception. The most commonly observed movements are walking (this imitates reality), flying (total freedom), focusing on the object (zooming the camera in or out) or teleportation (this enables a broader field of movement, shifting from one standpoint to another).
- Users can also interact with the different objects exhibited within the space. Here too, several methods and levels of interaction exist. Users may simply be led to observe the object and to click on it to obtain more information. They may virtually take hold of an object (which cannot be done in reality) so as to observe it from different angles. Moving on from this, there are also cases in which users can interact to a greater extent with the object by handling it, changing some of its characteristics (imitating a reconstruction of broken remains) or actually using it (to understand the uses of the object concerned).
- Finally, a virtual exhibition also needs to enable users to interact with other visitors to the same exhibition or who have already explored the space, in similar ways to those observed in physical museums (Jacobi and Jeanneret, 2013). Several solutions can

be implemented to enable such interactions. For example, as in many video games, there can be a discussion zone on one of the sides of the visit “window”. It would also be possible to envisage a kind of comments space open to everyone, like real-life museum visitors’ books. However, integrating social media and introducing an animation by a community manager seem more relevant given how common such practices are, even though these require significant human investment (Magro, 2015). In any case, we feel that this is one of the most important ideas to develop in terms of creating such a meeting space.

To conclude this brief overview, given that we are still at the stage of thinking through the various possibilities, it seems important to us to stress that in both real life and virtual exhibitions, the way information is received depends both on the design of the exhibition and the possibilities for interaction provided to visitors. From this standpoint, a great deal of thought is still required to facilitate take-up and mediation activities that consist in more than simply wandering around a space against a given backdrop …

References:

Bourgeaux, Laure, 2009. *Musées et bibliothèques sur Internet : le patrimoine au défi du numérique*, Université Paris 1, Panthéon – Sorbonne, Master 2 Histoire et politique des musées et du patrimoine.

Davallon, Jean, 1999. *L’exposition à l’œuvre : stratégies de communication et médiation symbolique*, Paris: L’Harmattan.

Gautier, France, 2002. *Concevoir une exposition virtuelle en bibliothèque : enjeux et méthodologie*, dissertation surpervised by Jacques Gana, Enssib.

Jacobi, Daniel et Jeanneret, Yves, 2013. Du panneau à la signalétique. Lecture et médiations réciproques dans les musées, *Culture & Musées*, special issue, *La muséologie, 20 ans de recherches*, p. 47–71.

Magro, Sébastien, 2015. De l’usage des réseaux socio-numériques comme supports d’une médiation culturelle en ligne, *La Lettre de l’OCIM*, 162 URL: http://journals.openedition.org/ocim/1593.

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แบบฝึกหัดส่วนที่ 4

1. จงอธิบายความแตกต่างของ AR และ VR
2. ท่านจะดึงดูดกลุ่มเป้าหมายด้วยเทคโนโลยีได้อย่างไร
3. จงแสดงตัวอย่างการนำเทคโนโลยีมาใช้กับการออกแบบนิทรรศการ
4. จงอธิบายผลกระทบของเทคโนโลยีที่มีต่อนิทรรศการในปัจจุบัน
5. ท่านคิดว่าในโลกยุคใหม่การจัดนิทรรศการจะออกมาในรูปแบบใด จงอธิบายโดยสังเขป

บรรณานุกรม

1. Flipped Classroom: https://canvas.instructure.com/courses/974952/pages/flipped-classroom (online; accessed on 21-07-2017)
2. Ubiquitous Learning: https://elearningindustry.com/ubiquitous-learning-every-education-organization-needs-know (online; accessed on 21-07-2017)
3. Social Network: http://www.bbc.com/future/story/20120411-rethinking-the-social-network (online; accessed on 21-07-2017)
4. The Communication Process : http://open.lib.umn.edu/communication/chapter/1-2-the-communication-process (online; accessed on 21-07-2017)
5. Why Don't You? Museum Infographic: https://museumsaskew.com/2013/06/14/why-dont-you-museum-infographic (online; accessed on 21-07-2017)
6. Protecting the Royal Albert Hall [Infographic] : https://www.ifsecglobal.com/protecting-the-royal-albert-hall-infographic (online; accessed on 21-07-2017)
7. การเขียนโครงการ: http://www.tadafinallyfinished.com/thesis-proposal.html (online; accessed on 21-07-2017)
8. การจัดแบ่งงาน: https://www.wikijob.co.uk/content/interview-advice/competencies/teamwork (online; accessed on 21-07-2017)
9. การติดตามงาน: https://www.projectmanager.com/blog/milestones-project-management (online; accessed on 21-07-2017)
10. นิทรรศการและการตลาด: https://themarketingpeople.com/what-is-the-best-marketing-strategy-for-an-exhibition-in-2016 (online; accessed on 21-07-2017)
11. การจัดพื้นที่: https://www.senatehouseevents.co.uk/features/how-plan-exhibition (online; accessed on 21-07-2017)
12. การจัดแสงและเงา: https://www.canva.com/learn/light-and-shadow (online; accessed on 21-07-2017)
13. Warm and cold colors. : https://www.truth-is-beauty.com/please-explain-warm-and-cool.html (online; accessed on 21-07-2017)
14. Color temperature. : http://www.ledcornbulbs.com/about-us/How-to-choose-the-right-color-temperature-for-your-LED-lights--100.html (online; accessed on 21-07-2017)
15. Shading: http://snoosnooandsnacks.tumblr.com/image/158302763996 (online; accessed on 21-07-2017)
16. เทคโนโลยีการแสดงผลภาพ (AR/VR) : https://medium.com/iotforall/whats-the-difference-between-vr-ar-mr-and-360-139fcf434585 (online; accessed on 21-07-2017)
17. เทคโนโลยีการแสดงผลภาพ (AR/VR) 2 : https://www.marxentlabs.com/what-is-virtual-reality (online; accessed on 21-07-2017)
18. การสร้างปฏิสัมพันธ์กับกลุ่มเป้าหมายด้วยเทคโนโลยี: https://edtechnology.co.uk/Article/interactive-tech-in-the-classroom-its-all-about-engagement (online; accessed on 21-07-2017)
19. การใช้เทคโนโลยีเพื่อเพิ่มประสิทธิภาพนิทรรศการ: https://www.rapiergroup.com/news/5-next-level-tech-ideas-exhibition-stands (online; accessed on 21-07-2017)
20. การจัดนิทรรศการแบบวิชวล (Virtual Exhibition) : https://anthology.hypotheses.org/342 (online; accessed on 21-07-2017)