



DESIGN TO THE POWER OF TEN

UX Futures November 5th, 2014

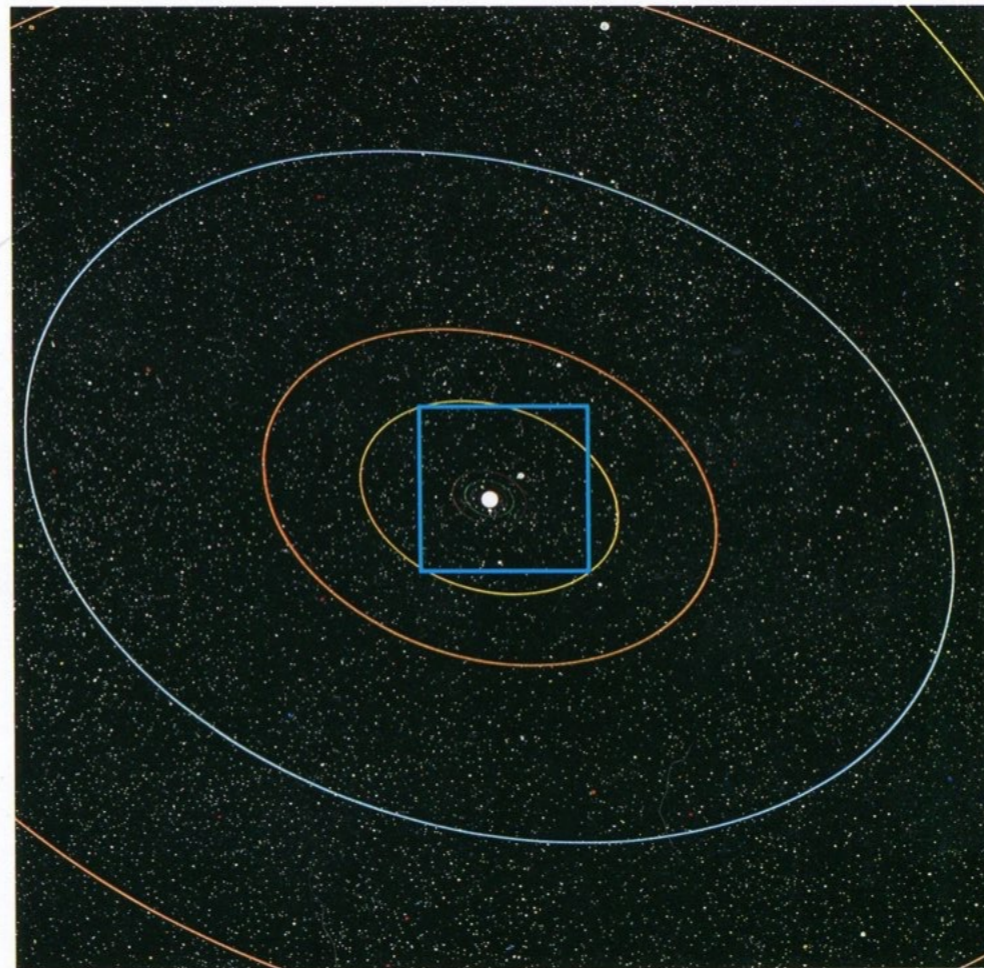
Andy Polaine

andy@polaine.com | Twitter: @apolaine

P O W E R S O F T E N

About the Relative Size of Things in the Universe

PHILIP MORRISON AND PHYLIS MORRISON
AND
THE OFFICE OF CHARLES AND RAY EAMES



Powers of Ten by Ray & Charles Eames



POWERS OF TEN

<http://www.eamesoffice.com/the-work/powers-of-ten/>



**A FILM DEALING WITH
THE RELATIVE SIZE OF THINGS
IN THE UNIVERSE**

**AND THE EFFECT
OF ADDING ANOTHER ZERO**

1 meter



10⁰
meters

10 meters



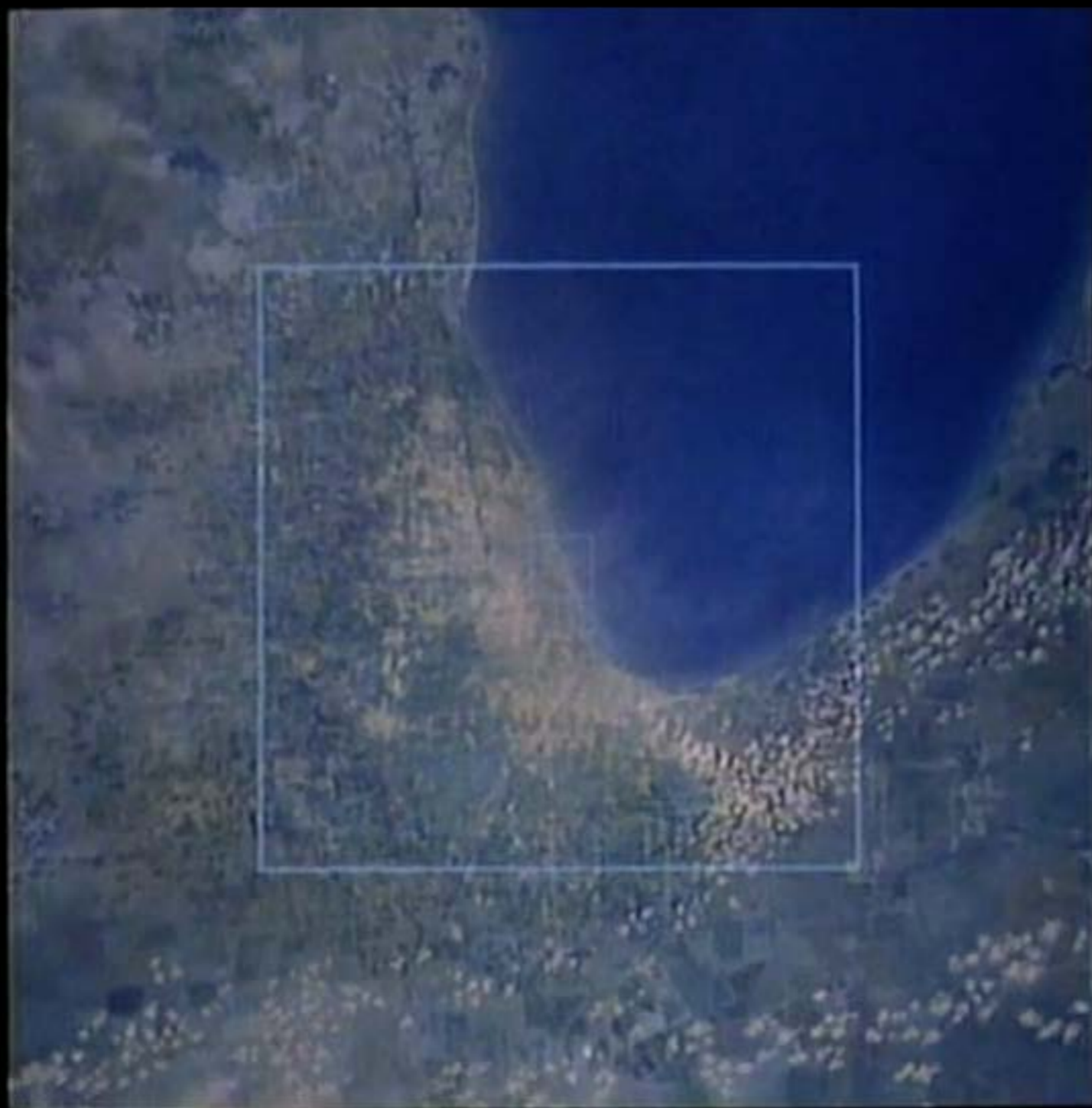
1
10
meters

100 meters



**2
10
meters**

100,000 meters



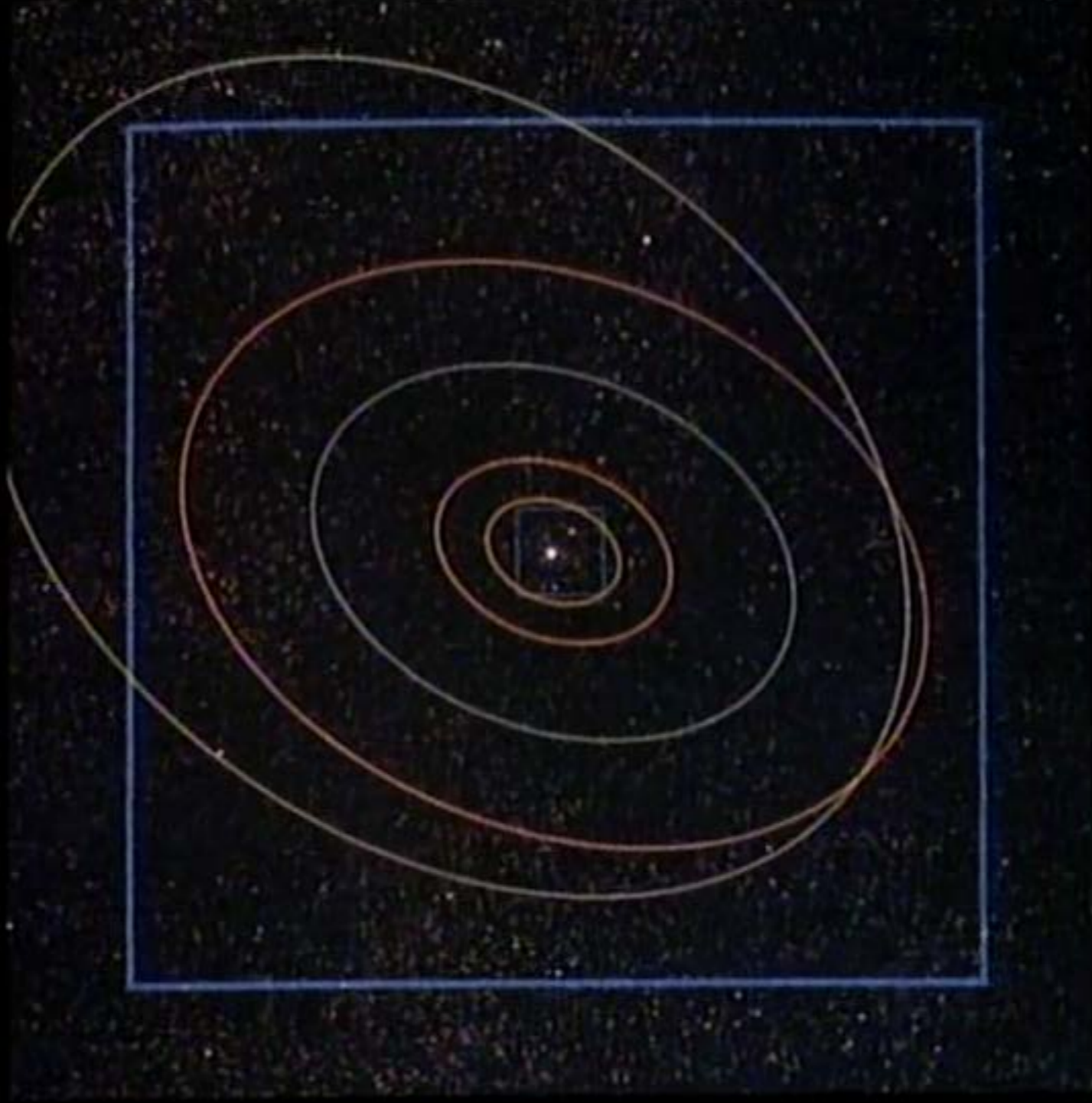
**5
10
meters**

10 million meters



**10⁷
meters**

10 million million meters



**10¹³
meters**

100,000 light years



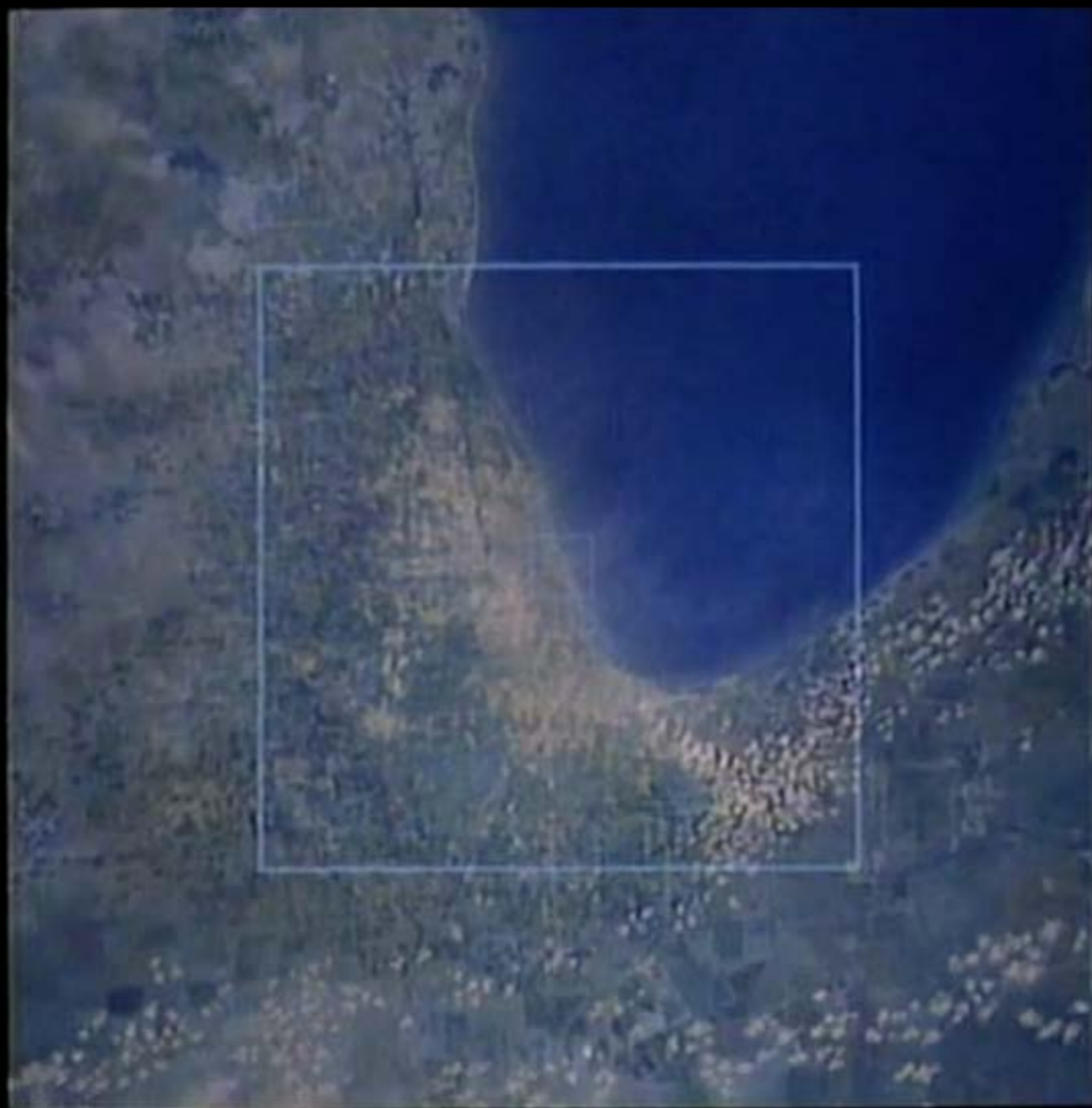
21
10
meters

10 million meters



**10⁷
meters**

100,000 meters



**5
10
meters**

100 meters



**2
10
meters**

10 meters



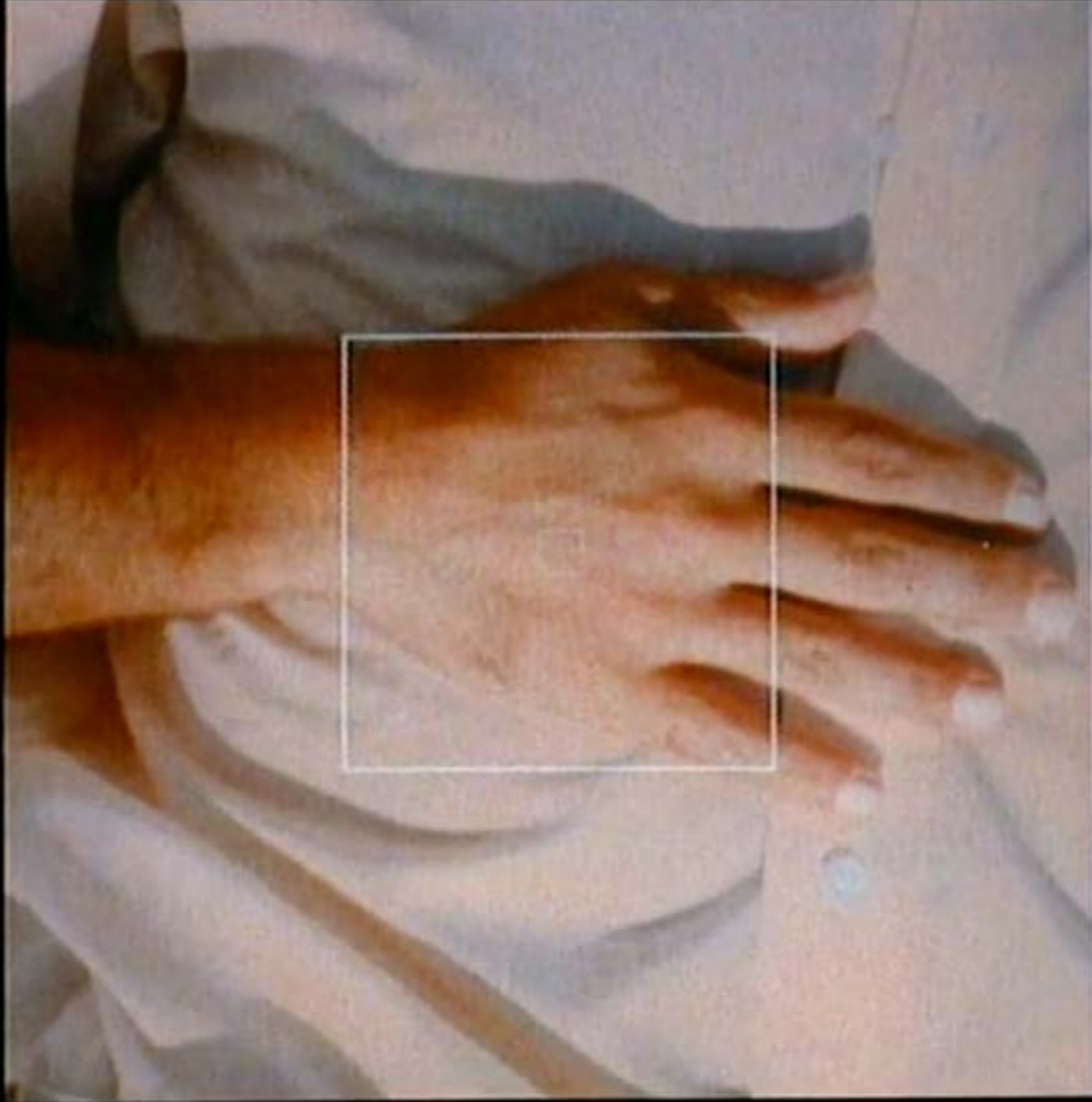
1
10
meters

1 meter



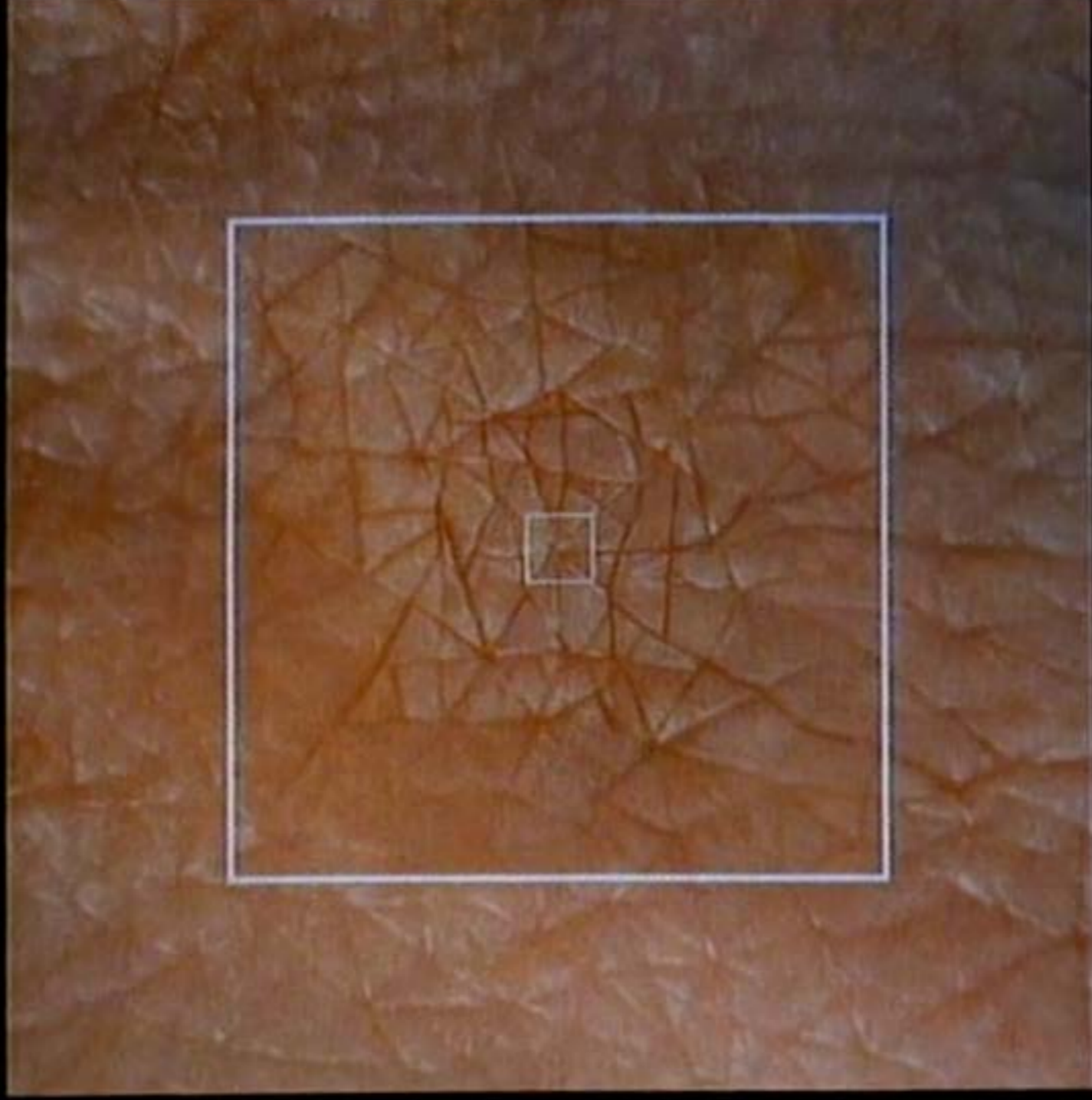
10⁰
meters

1 meter



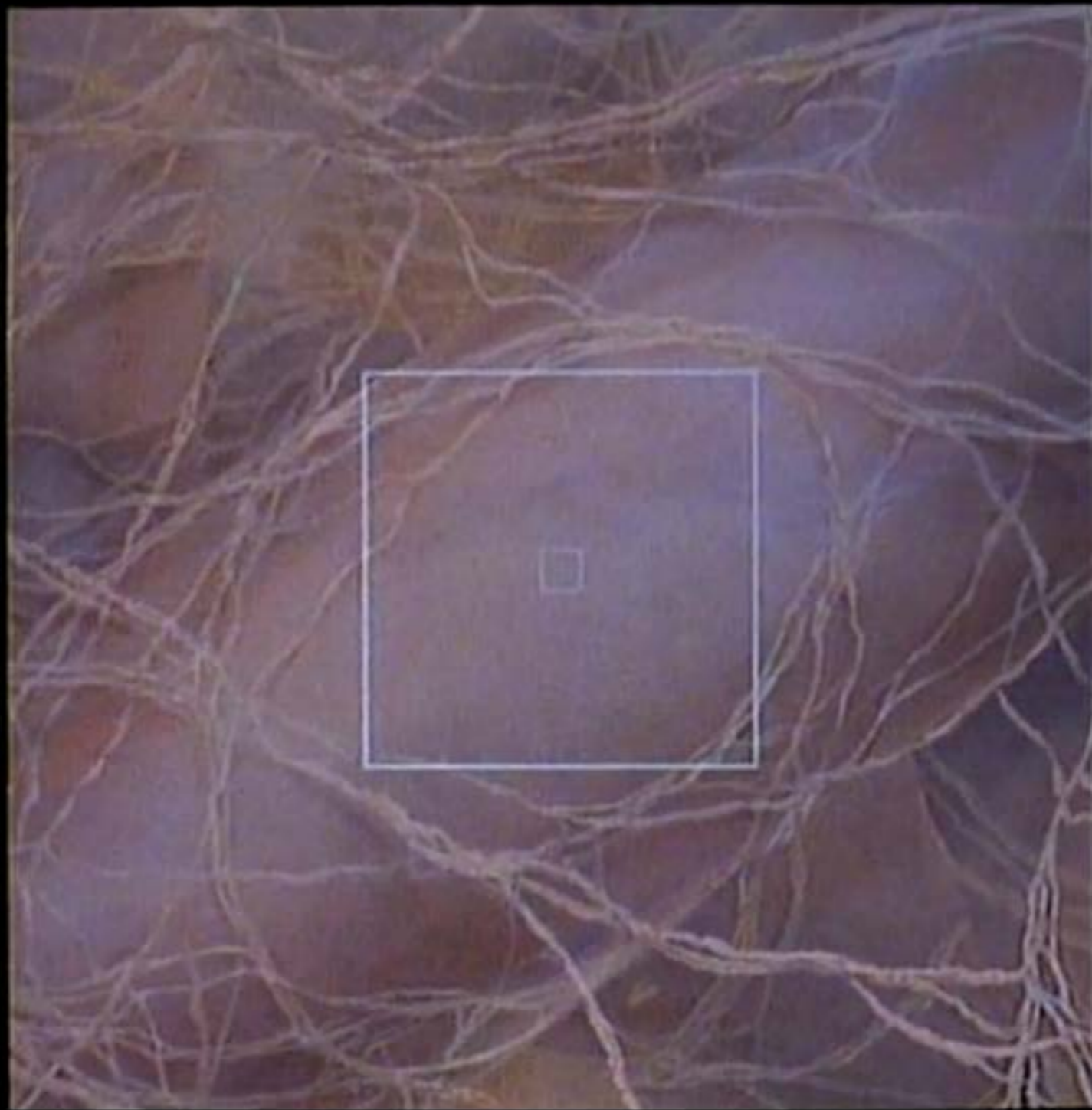
**10⁰
meters**

10 centimeters



**10⁻¹
meters**

100 microns



**10^{-4}
meters**

100 ångstroms



-8
10
meters

0.001 ångstroms



-13
10
meters

THE DHL CHECKBOX
& THE BENT LAMP



I sent this Louis Poulsen PH 5 Lamp to the UK



But it arrived like this



DHL ONLINE FRANKING.
FASTER. EASIER. LOWER COST.

DHL postage calculator

Parcel-Shipment Express-Shipment

Country:

Weight:

Size:

Including liability of up to EUR 500 and Track & Trace

Product recommendation:

DHL PAKET International

> Product details

Retail-Price: 42,00 EUR

Online-Price: 40,00 EUR

[Buy online](#)

Price:

- Optionale Services

Pick-up: from EUR 3,00 (plus Online-Price)

DHL Paket App



Shipment tracking and many more services on your iPhone and Android smartphone.

> Download now

DHL recipient service



Whether it be a Packstation or delivery to a preferred neighbour - get full flexibility with DHL recipient service.

> More information

Paket Express Logistics

Track your shipment

Shipment number(s)

Reference

- > Help
- > Advanced search

[Search now](#)

DHL near you

Enter your postcode and/or city:

What are you looking for?



> Packstation



> Retail outlets



> Paketbox

Annual General Meeting 2013



29 May: Annual General Meeting for the Financial Year 2012.

> More

DHL Paket

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- > Receive packages
- > For Business customers

DHL Express

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- > Export Services
- > Import Services

DHL Logistics

- > Air Freight
- > Sea Freight
- > Road and rail transport

Contact

- [DHL Paket](#)
- [DHL Express](#)
- [DHL Logistics](#)

One checkbox propelled me into another world



www.parcelforce.com

Parcelforce Worldwide
Claims Centre
PO BOX 491
Wakefield
WF1 9AP

Telephone: 01924 294280
Fax: 01924 294301
www.parcelforce.com

25.09.12

Dear Sir/Madam

Thank you for your claim form that you have recently sent to our Claim Centre.

Regretfully, we are unable to accept a claim on an import Express Mail item. Any claim for delay, loss or damage needs to be submitted by the sender in the county of origin and I have therefore returned your claim form to you.

I am sorry for any further inconvenience this will cause.

Yours faithfully

Parcelforce Worldwide Claims Manager



DHL Vertriebs GmbH

DHL Vertriebs GmbH - Kundenservice - 22795 Hamburg

Herrn
Andrew Polaine

Ihr Zeichen

Unser Zeichen en581E120111783

Telefon 01805 345 2255

Datum 24.10.12

Betrifft Postpaket Premium Nr. 968530421687, eingeliefert am 15.09.2012 in Deutschland an
Manchester, Großbritannien

Sehr geehrter Herr Polaine,

wir haben Ihre Anfrage bezüglich der oben genannten Sendung erhalten.

In der Zwischenzeit haben wir den Vorgang für Sie überprüft und bei der zuständigen Postgesellschaft in Großbritannien nachgefragt. Von dieser erhielten wir die Information, dass Ihre Sendung von einem Empfangsberechtigten unbeanstandet entgegen genommen worden ist.

Da bei der zuständigen Postgesellschaft im Ausland innerhalb der vorgeschriebenen Meldefrist keine Schadenmeldung eingegangen ist, bitten wir um Verständnis, dass diese Sendung somit entsprechend unseren Allgemeinen Geschäftsbedingungen PAKET INTERNATIONAL als ordnungsgemäß ausgeliefert gilt.

Für die Zukunft hoffen wir, Sie wieder zu unseren zufriedenen Kunden zählen zu können und Sie von der Qualität unserer Dienstleistungen zu überzeugen.

Mit freundlichen Grüßen

Ihr
DHL Kundenservice

958-956-800 / 999-356-008 07.10

Hausadresse
Weidestr. 122 d
22083 Hamburg

Telefon 01805 345 22 55*
*0,14€/Min.aus d.dt.Festnetz;
Mobilfunk max.0,42€/Min.

Telefax 01803 002 600**
**0,09€/Min.aus d.dt.Festnetz;
Mobilfunk max.0,42€/Min.

Sitz Bonn
Registergericht Bonn
HRB 19565
USt-IdNr.
DE 813312787
St-Nr.
205/5777/4144

Kontoverbindung
Postbank Köln
Konto 235506
BLZ 370 100 50

Geschäftsführung
Dr. Andrej Busch
Norman Chmiel
Katja Herbst
Dr. Joachim Wessels

IBAN
DE88 3701 0050
0000 2355 06
SWIFT BIC
PBNKDEFF370

Deutsche Post AG
Sitz Bonn
Registergericht Bonn
HRB 6792

Vorstand
Dr. Frank Appel, Vorsitzender
Ken Allen
Roger Crook
Bruce Edwards
Jürgen Gerdes
Lawrence Rosen
Angela Titzrath

Vorsitzender des Aufsichtsrates
Prof. Dr.
Wulf von Schimmelmann

www.dhl.de



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Registered Number 4138203. Registered in England and Wales. Registered office: 100 Victoria Embankment, London, EC4Y 0HQ.
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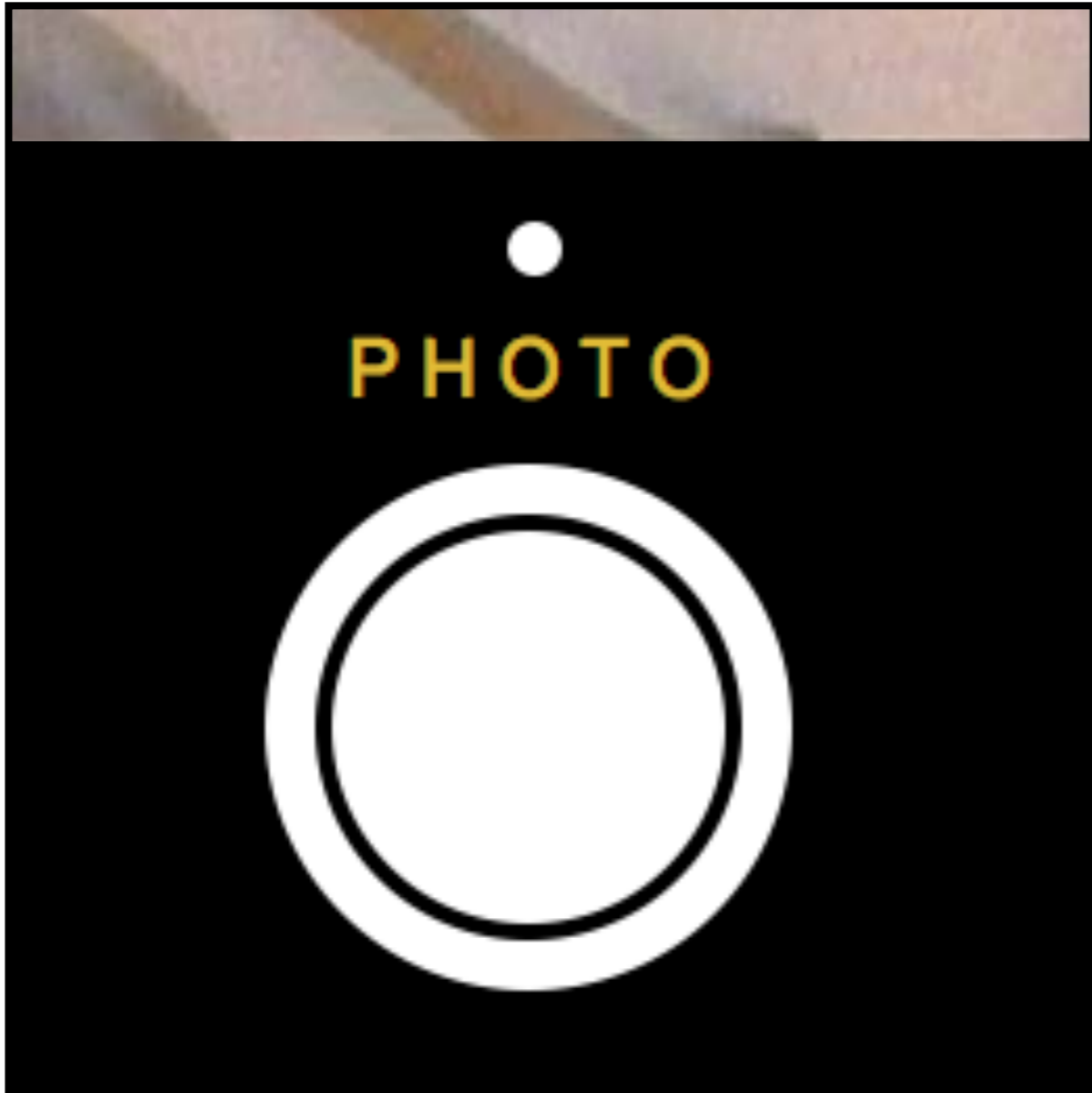
I ended up caught between two sets of regulations and policies

DESIGN TO THE
POWER OF TEN



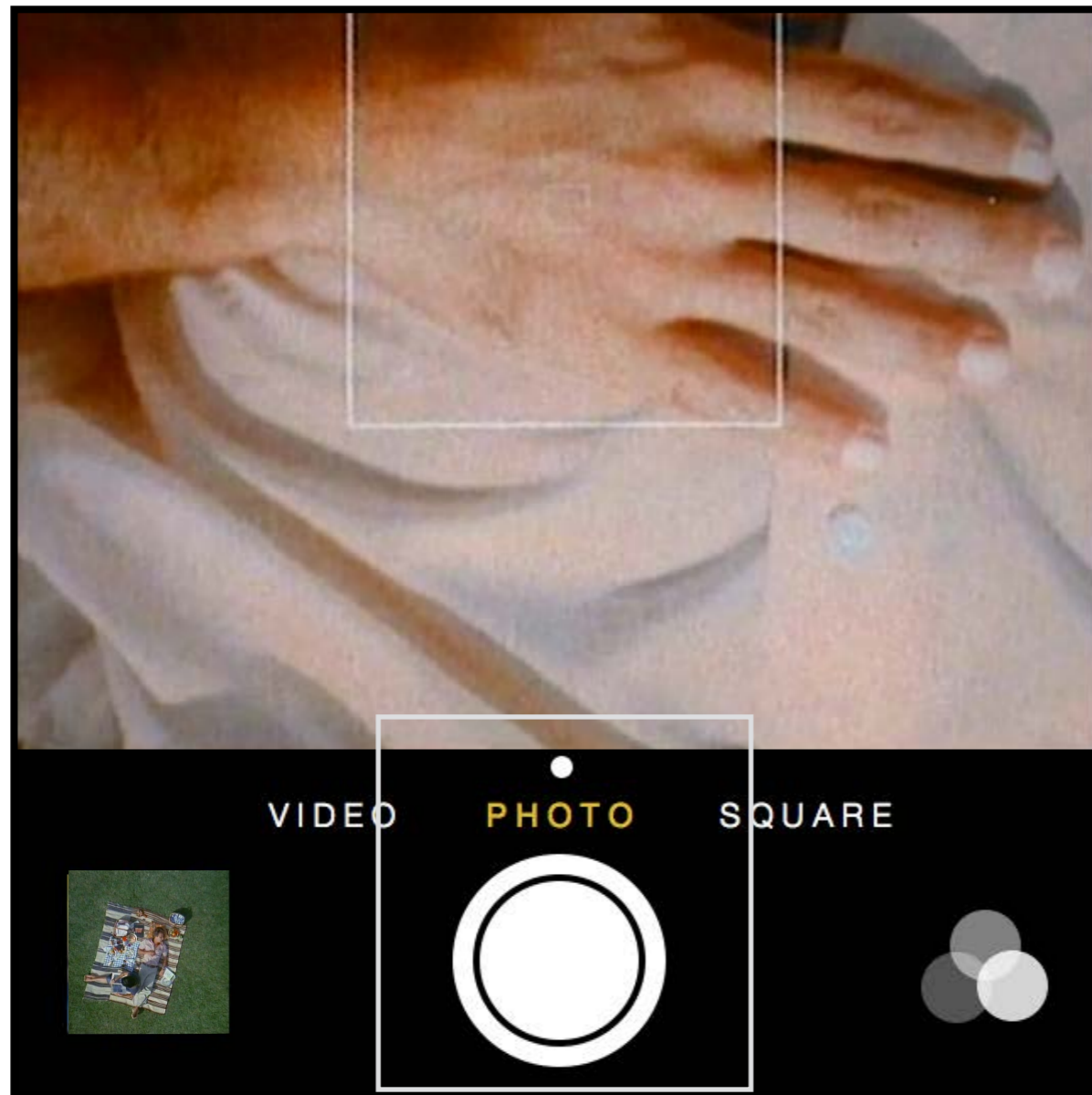
LOW LEVEL

APIs & libraries are UX for programmers & engineers



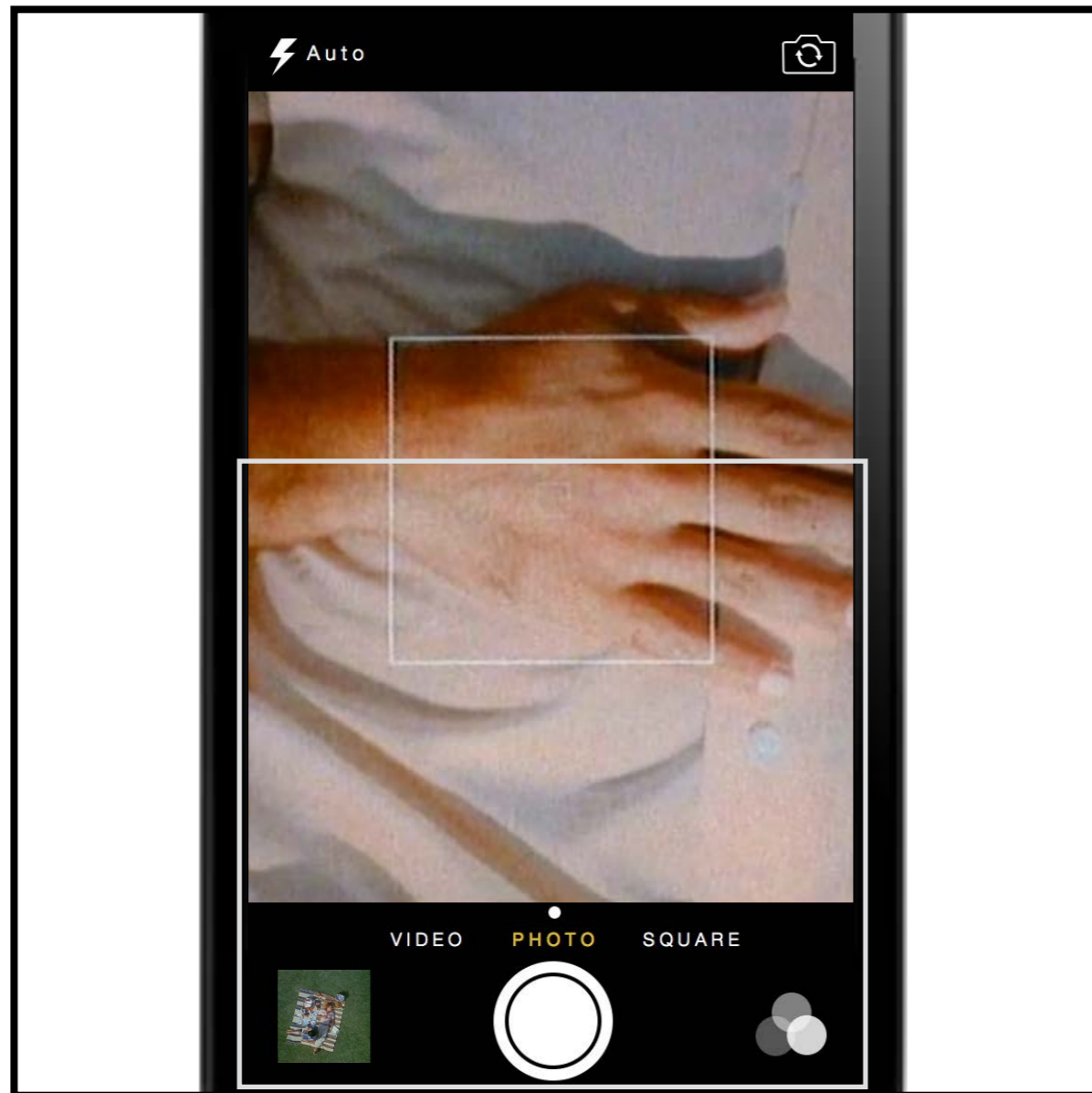
UI ELEMENT

Fingertip



UI CLUSTER

Finger



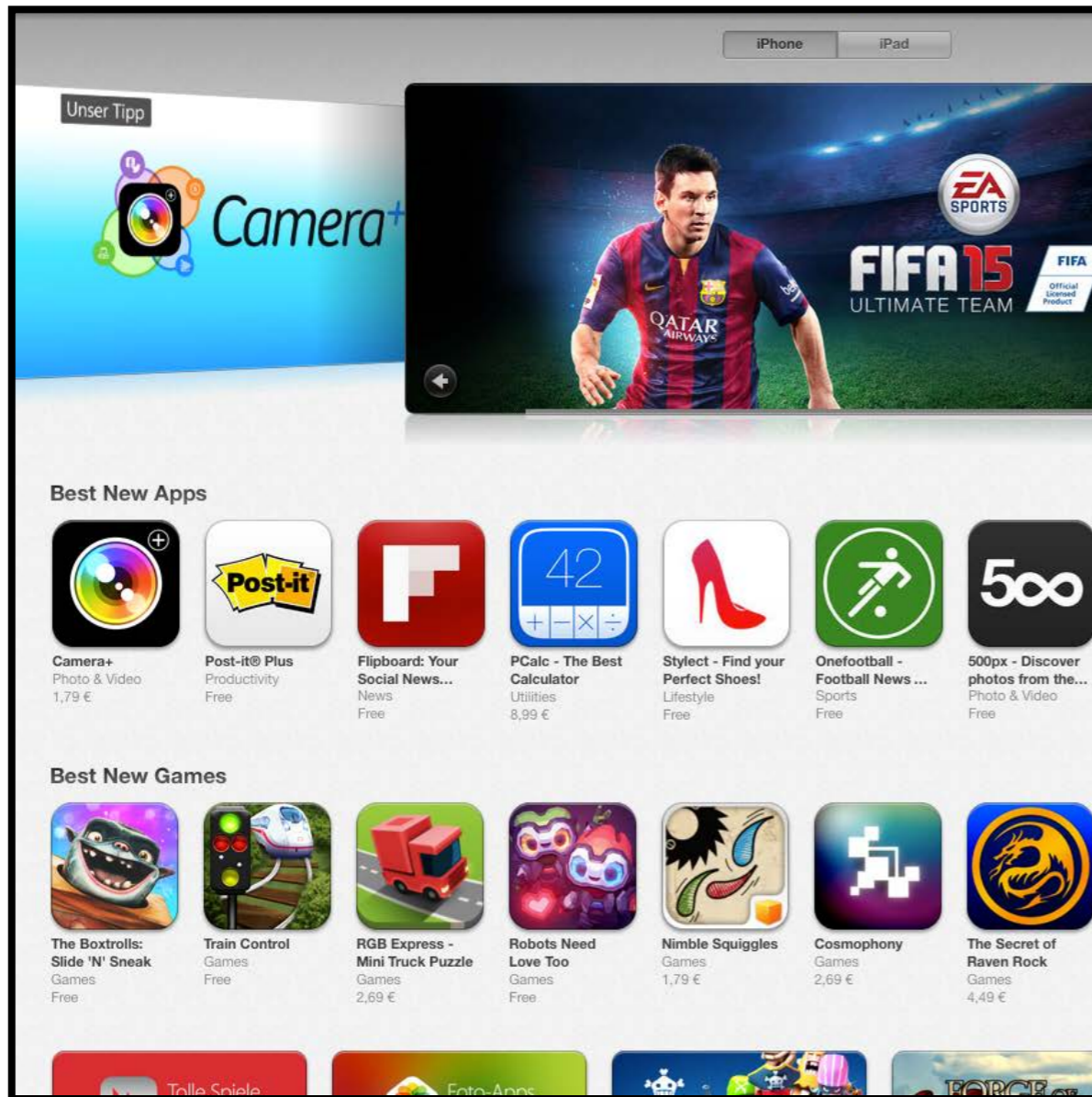
APP

Hand



DEVICE

Hands



STORE

Wallet



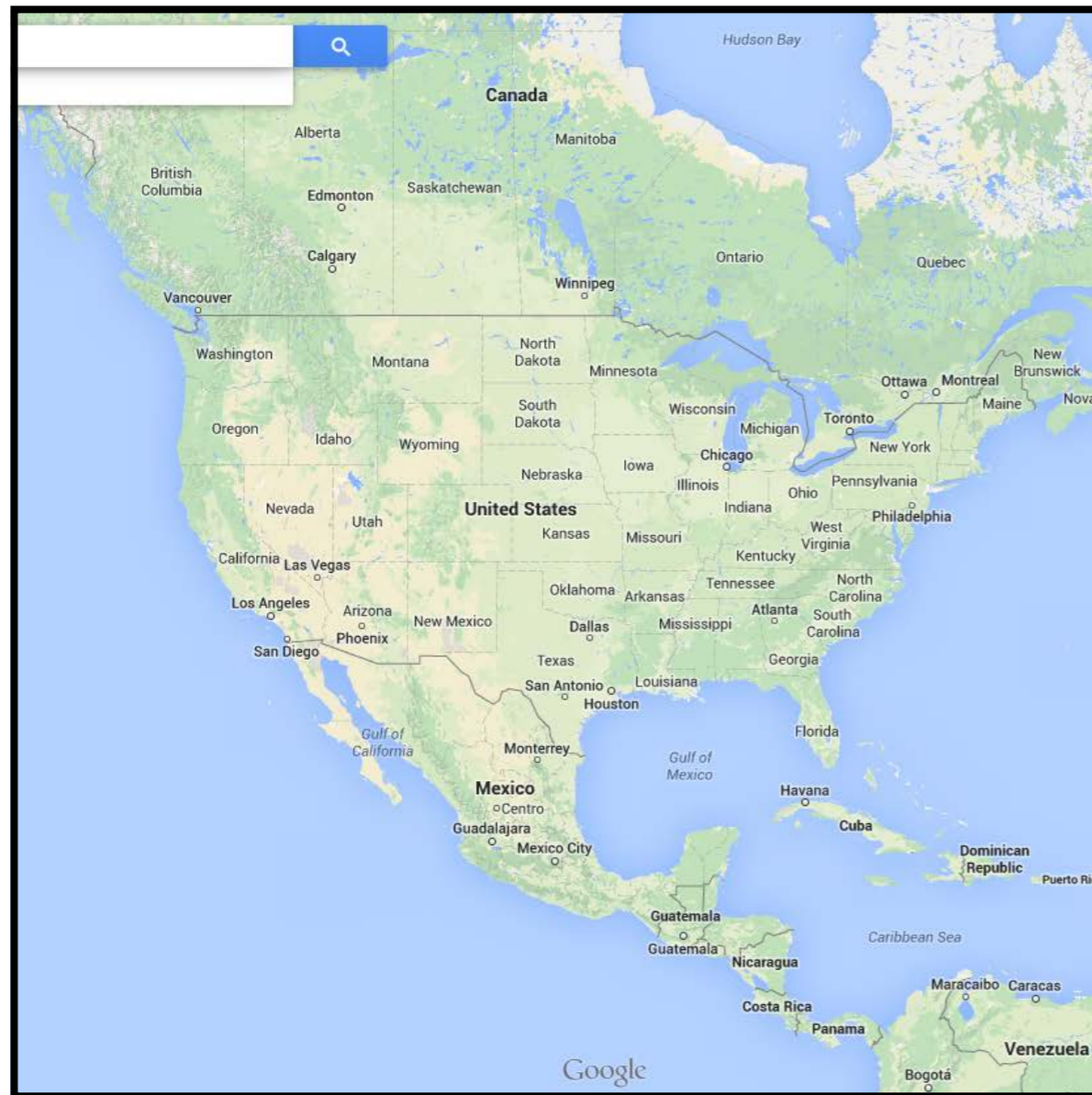
ECOSYSTEM

Life



NETWORK

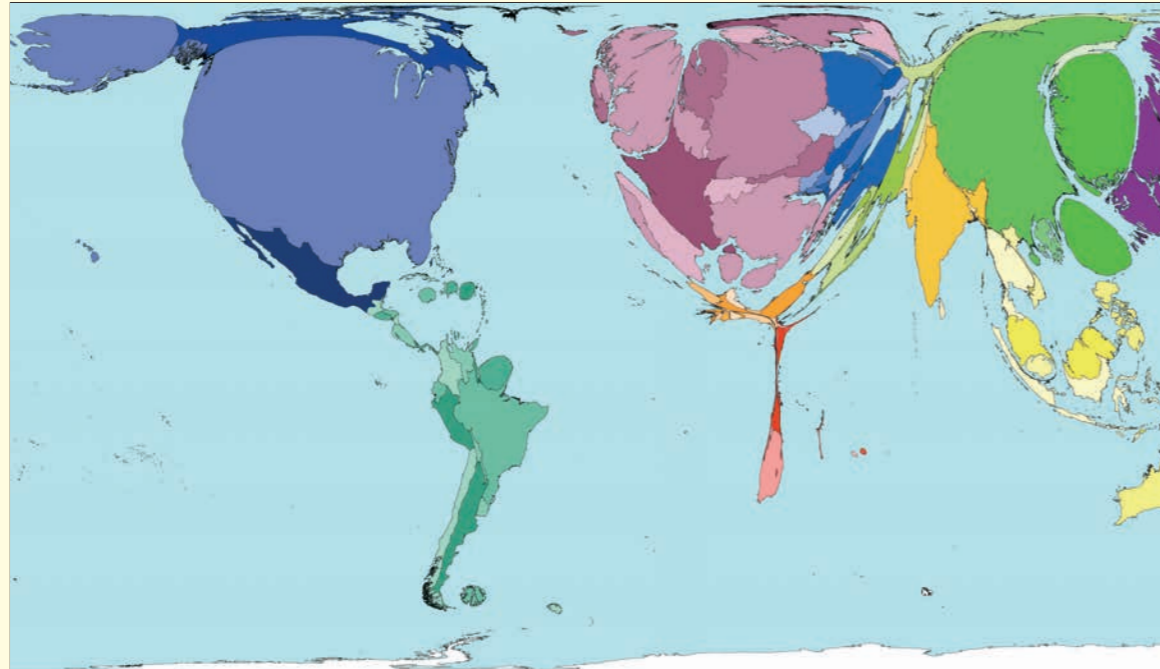
Lives



NATIONAL REGULATORY SYSTEMS

Population

Internet Users 2002



Land area

Technical notes

- Data are from the United Nations Development Programme's 2004 Human Development Report.
- Internet users have access to and use the Internet.
- See website for further information.

MOST AND FEWEST INTERNET USERS

Rank	Territory	Value	Rank	Territory
1	Iceland	648	191	Bangladesh
2	Sweden	573	191	Congo
3	Republic of Korea	552	193	Niger
4	United States	551	193	Central African Republic
5	Denmark	513	195	Burundi
5	Canada	513	196	Iraq
7	Finland	509	197	Democratic Republic of C
8	Netherlands	506	198	Ethiopia
9	Singapore	504	199	Myanmar
10	Norway	503	199	Tajikistan

Internet users per 1000 people in 2002

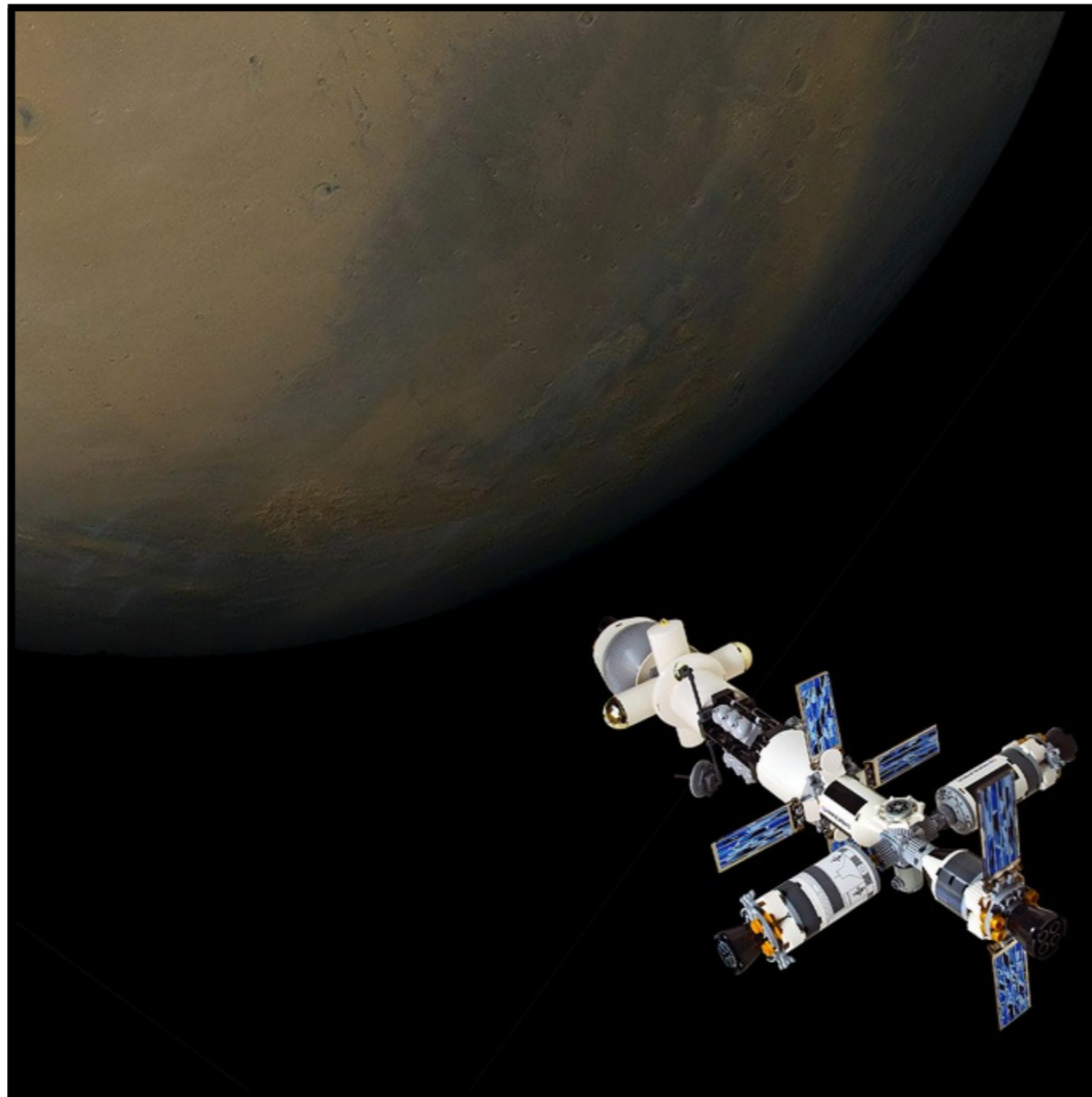
GLOBALISATION & INTERNATIONAL LAW

Populations & Governments



CLIMATE CHANGE
WEALTH
POVERTY
HEALTH
DEVELOPMENT
PEACE
SECURITY

Terrestrials



SPACE

Extra Terrestrials?

ONE TOUCHPOINT
CAN WRECK AN
ECOSYSTEM



American Airlines

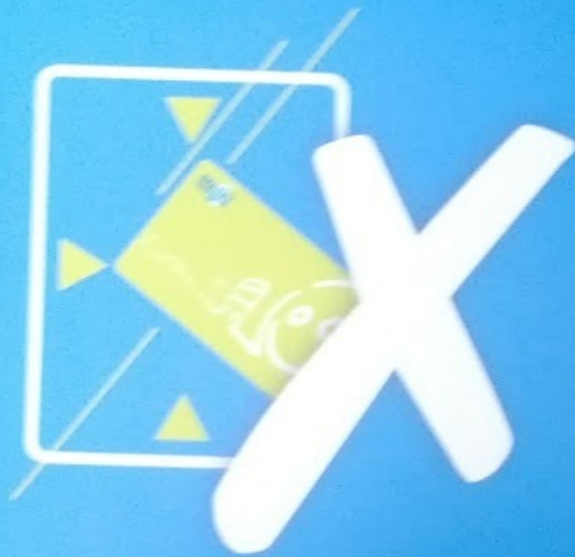
Nice touchpoint, now what about the rest of the experience?



Hi MYKI! You look modern and cool. Just tap then?



Oh. Okay.



**Don't
swipe.**

How about swiping? No?



**Don't
wave.**

Wave it about a bit?



Sorry, can't quite read that...

and top up here

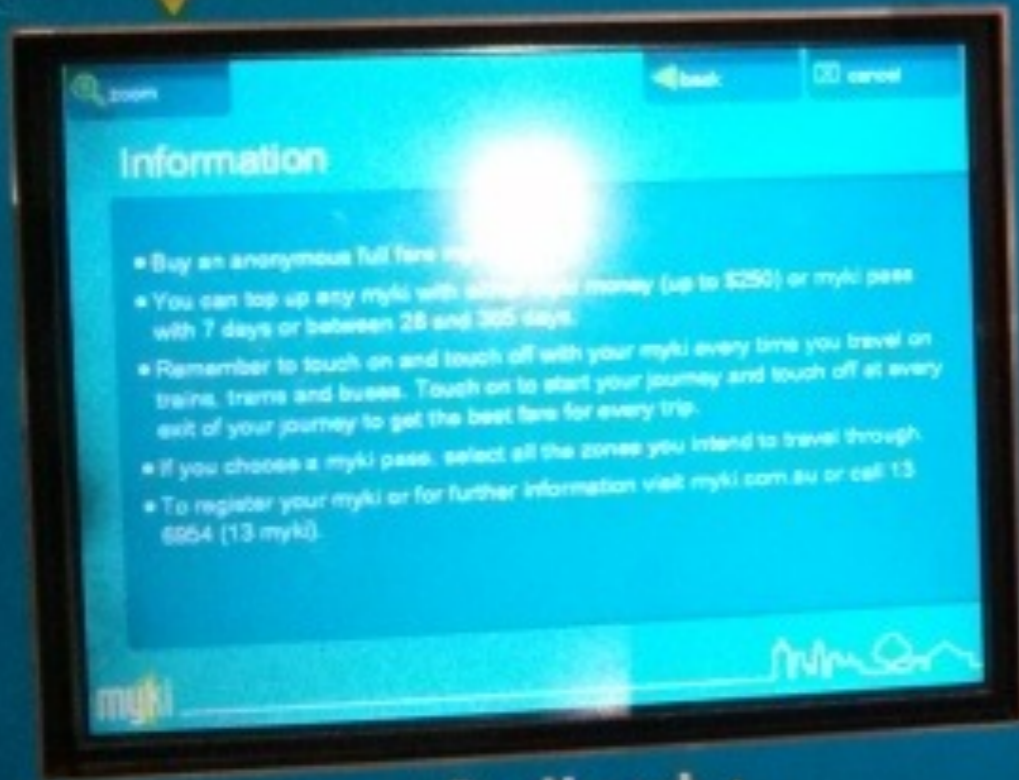
myki.com.au
call 13 6954 (13 myki)

and eftpos

Coins

10¢
20¢ \$1
50¢ \$2

Zoom



Place myki here



Maximum \$10 change



Notes



Collect

Maybe the machine will help? Oh dear.



Search this site... [search icon]

Home

Tickets

Getting around

News & events

Projects

About PTV

Customer service

Journey planner

Timetables

Next 5 departures

Live travel updates

myki

Page not found

This may have occurred for one of the following reasons:

- You clicked on an outdated link or bookmark*
- You mistyped the address
- A technical error has occurred.

*If you reached this page via a link on this website, please let us know by filling out a [feedback form](#).

> [Public Transport Victoria homepage](#)

Journey planner

[Timetables](#)

[Next 5 departures](#)

[Live travel updates](#)

[myki](#)

Tickets

[V/Line tickets](#)

[Concessions](#)

[myki](#)

[Metropolitan zones](#)

Getting around

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[Lost property](#)

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Copyright 2013



I'll try the official website. Oh.



Aha! Slow card readers huh?

Space shuttle launch

\$426 million

Mars Rover mission

\$777 million

Market value of Virgin Australia airline

\$1.46 billion

Total assets of Ford Motor Company, Australia

\$1.5 billion

Original budget, AU\$350 million. AU\$1.5 billion later...

MACRO & MICRO

OR

META VS MATTER*

DARK MATTER
AND TROJAN
HORSES

A STRATEGIC
DESIGN
VOCABULARY

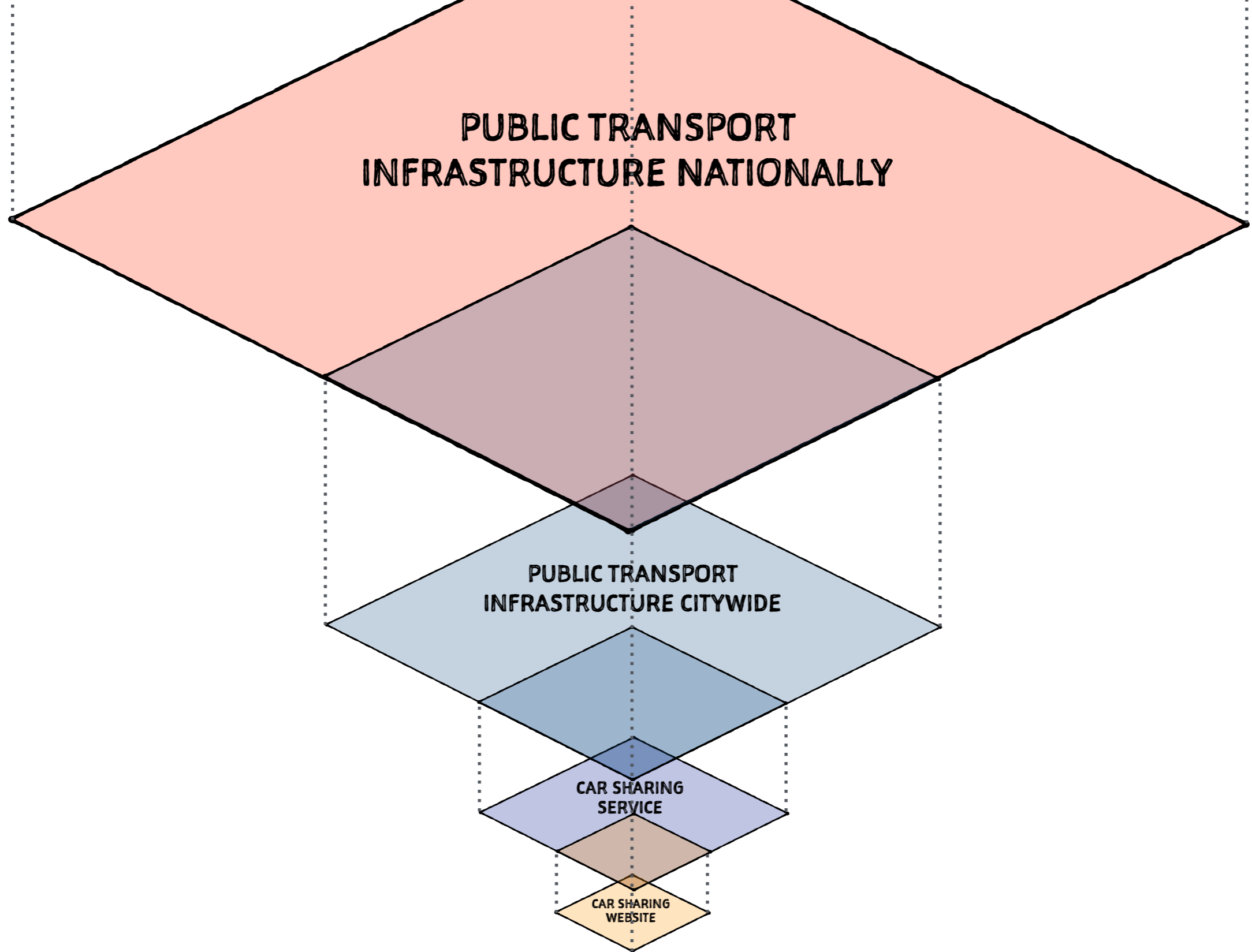
DAN HILL

MacGuffins, Trojan Horses and Dark Matter

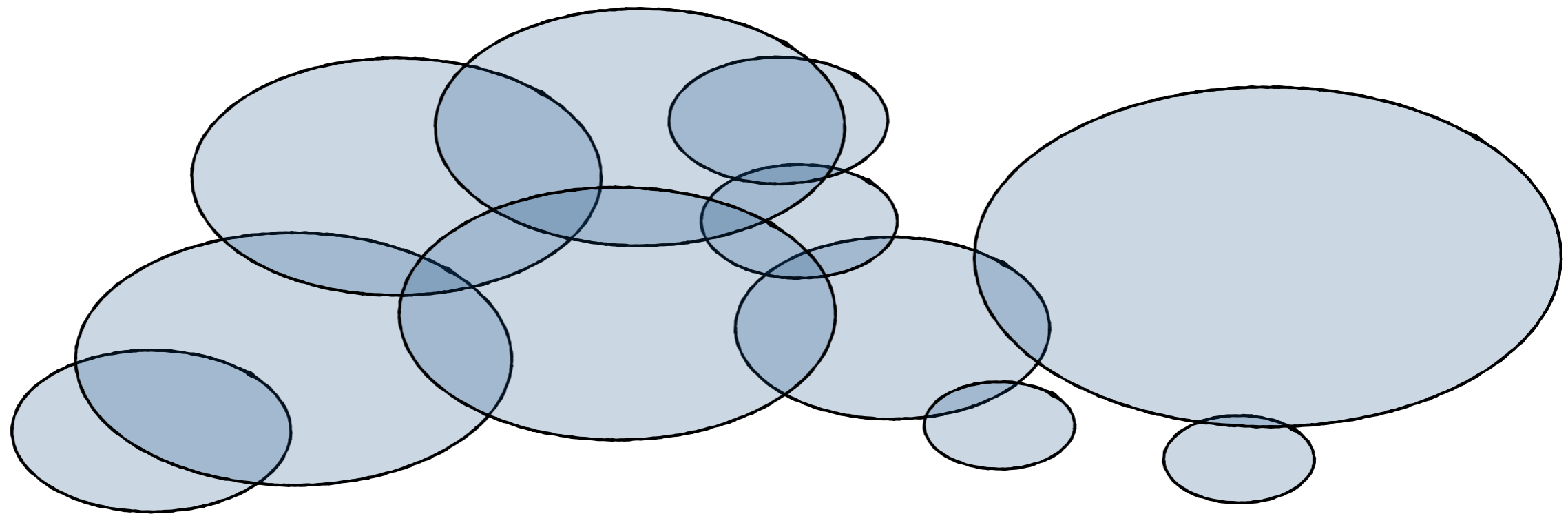
“If it’s too easy to get an idea accepted, you’re probably doing it wrong. You’re probably not disturbing the dark matter enough.”

- Dan Hill, Dark Matter and Trojan Horses

MOVING BETWEEN
THE LAYERS



Zooming out increases area of complexity, not just the level



**PUBLIC TRANSPORT
INFRASTRUCTURE CITYWIDE**

Each layer is has overlapping scope and elements

**PUBLIC TRANSPORT
INFRASTRUCTURE NATIONALLY**

**PUBLIC TRANSPORT
INFRASTRUCTURE CITYWIDE**

**CAR SHARING
SERVICE**

**CAR SHARING
WEBSITE**

Reality is more complex - boundaries are blurred, layers entwined

HELP! THESE
PROBLEMS ARE TOO
COMPLICATED!



CLIMATE CHANGE
WEALTH
POVERTY
HEALTH
DEVELOPMENT
PEACE
SECURITY

Wicked Problems



G

A million acts of design and thoughtlessness



Outsourced industrial production

Intolerable Beauty: Portraits of American Mass Consumption
(2003 - 2005)



Cell phones #2, Atlanta 2005 44 x 90"

Your old cell phones

“Fixing climate change or the world financial crisis is not your f*****g job!”

What are the limits of service or UX design?



Whose job is it then?

(SERVICE) DESIGN & THE CIRCULAR ECONOMY

ring
s to life



Matthew Polaine
Lead Researcher, The Circular Economy, BT

Nesta...

British Telecom and The Circular Economy



MAKES SENSE 'CAUSE IT FITS THROUGH A

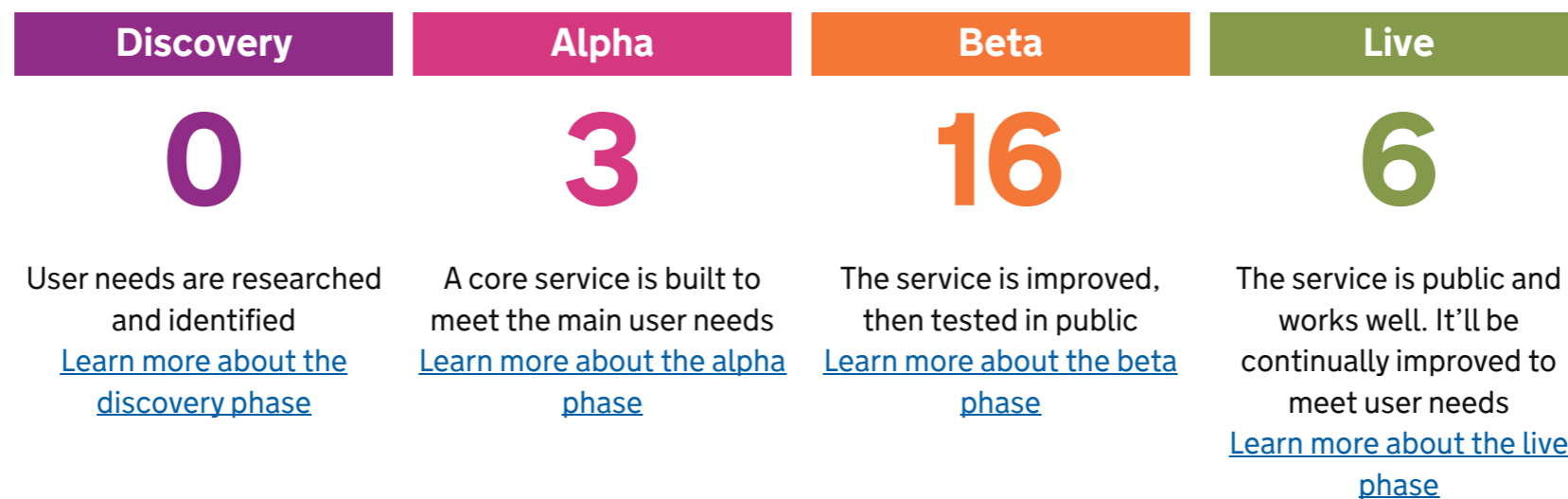
LETTERBOX

Smaller package, less waste, fewer returns, better CX

GOVERNMENT

Digital Transformation

Government is building digital services that are simpler, clearer and faster to use. We're starting with these 25 services. You can follow our progress on this page.



Digital services so good people prefer to use them

The [Government Digital Strategy](#) and [departmental digital strategies](#) commit us to the redesigning and rebuilding of 25 significant 'exemplar' services. We're going to make them simpler, clearer and faster to use. All these are to meet the [Digital By Default Service Standard](#) by April 2014 and be completed by March 2015.

This dashboard shows you which transactions are in the programme, what progress is being made, and the estimated scale of the digital service.

You can read more about the transformation programme on [our blog](#).

Digital services so good people prefer to use them

This month's highlights

- [Civil claims](#) went live
- [Prison visit booking](#) went live

Next month

Visit someone in prison

Make a request to visit someone in prison in England and Wales.

[Contact the prison](#) if you can't request a visit using this service.

[Start now](#) >

[Before you start](#) [What you need to know](#)

You don't need a Visiting Order (VO) number to request a visit.

You'll need:

- the prisoner number
- the prisoner's date of birth
- the dates of birth for all visitors coming with you

You can only visit a prisoner if they want you to visit them. Your identity will be checked on arrival to make sure you're on the visitor list.

Your visit will be confirmed by email within 3 working days.

[Is there anything wrong with this page?](#)

Last updated: 12 September 2014

Using design tools and research to show the silos and joins

“We do not want to continue running government as a series of disjointed silos. Instead, we are increasingly focusing on an idea called ‘Government as a platform’”.

– Sir Jeremy Heywood, Cabinet Secretary & Head of the Civil Service

UX/Service Design as a Trojan Horse for cultural change

HUMANITARIAN AID,
PEACE,
DEVELOPMENT &
SECURITY



**The Security Needs Assessment Protocol:
Improving Operational Effectiveness through
Community Security**

Derek B. Miller and Lisa Rudnick

UNIDIR & The Policy Lab



SERVICE DESIGN FOR HUMANITARIAN AID

Relief disbursement can often be turbulent for program administrators and beneficiaries alike. We helped design mobile financial services for those most in need and hardest to reach.

[VIEW CASE STUDY](#)

Reboot.org - Service design for humanitarian aid

WE ALREADY HAVE
MOST OF THE TOOLS

Rail Europe Experience Map

Guiding Principles

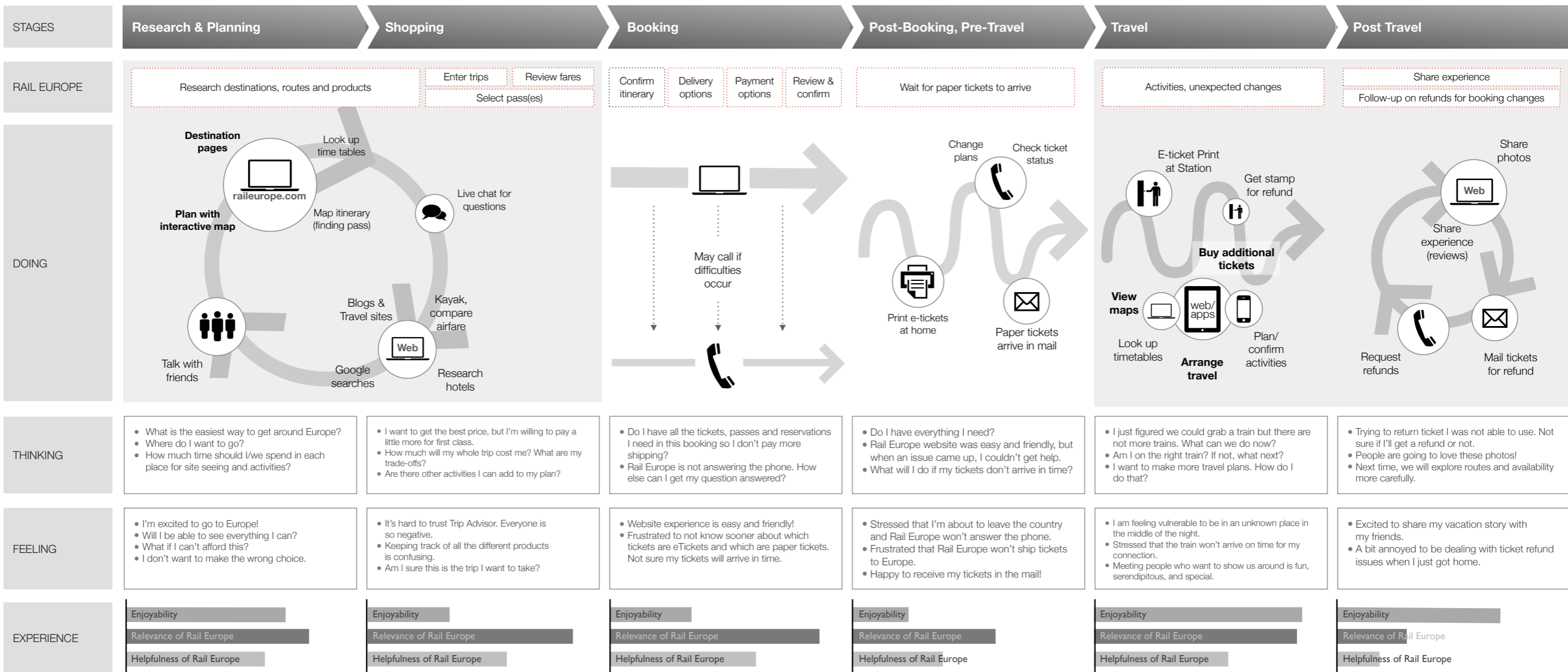
People choose rail travel because it is convenient, easy, and flexible.

Rail booking is only one part of people's larger travel process.

People build their travel plans over time.

People value service that is respectful, effective and personable.

Customer Journey



Opportunities

GLOBAL	PLANNING, SHOPPING, BOOKING	POST-BOOK, TRAVEL, POST-TRAVEL
<p>Communicate a clear value proposition.</p> <p>STAGE: Initial visit</p>	<p>Enable people to plan over time.</p> <p>STAGES: Planning, Shopping</p>	<p>Improve the paper ticket experience.</p> <p>STAGES: Post-Booking, Travel, Post-Travel</p>
<p>Help people get the help they need.</p> <p>STAGES: Global</p>	<p>Visualize the trip for planning and booking.</p> <p>STAGES: Planning, Shopping</p>	<p>Accommodate planning and booking in Europe too.</p> <p>STAGE: Traveling</p>
<p>Support people in creating their own solutions.</p> <p>STAGES: Global</p>	<p>Arm customers with information for making decisions.</p> <p>STAGES: Shopping, Booking</p>	<p>Proactively help people deal with unexpected changes.</p> <p>STAGES: Post-Booking, Traveling</p>
<p>Make your customers into better, more savvy travelers.</p> <p>STAGES: Global</p>	<p>Connect planning, shopping and booking with a single experience.</p> <p>STAGES: Planning, Shopping, Booking</p>	<p>Communicate status clearly at all times.</p> <p>STAGES: Post-Booking, Post-Travel</p>
<p>Engage in social media with explicit purposes.</p> <p>STAGES: Global</p>	<p>Aggregate shipping with a single experience.</p> <p>STAGE: Booking</p>	

Customer journey and experience mapping

Information sources

Stakeholder interviews
Cognitive walkthroughs

Customer Experience Survey
Existing Rail Europe Documentation



Linear process

Non-linear, but time based

Service Blueprint

Ungdomspakken



		Lære om					Bli kunde										Bruke			Utvikle		Forlate							
		Gjør det enkelt å fortelle om og anbefale pakken til venner, og enkelt for foreldre å gi pakken til sine barn.					Reduserer antall valg og antall steg kunden må foreta for å bli kunde til et minimum.										Få unngjørt alle kjedelige valg eller bekreftelser ved førstegangs innlogging. Gjør det enkelt å flytte penger inn på konto og å spre det nye kontonummeret.			Informér om mulighetene for å forbli Gjensidige-kunde; BSU, førstehjemsån, ...		Gjør det lett å komme tilbake							
Kunderferd	Opplyselse	Få pakken fra foreldrene, med gratis innbo-forsikring	Får tips av en venn som allerede har pakken	Undersøker alternativer på nettet	Deltar i ... (aktivitet som er del av viral markedsføring)	Går inn på altiorden.no	Fyller inn gtt skjema på nettet, og klikker Kjøp!	Mottar bekreftelse på SMS og på epost.	Forventer å få pakken innen 7 dager.	Mottar melding om pakke fra Posten. Tar med pass og henter pakken.	Åpner pakken, får raskt forklart hvilke steg som gjenstår.	Logger inn på gjensidige.no og bekrefter avtale	Oppretter konto og bestiller kort	Forventer å få kortet innen 3 dager	Åpner konvolutten, får raskt forklart hvilke steg som gjenstår.	Logger inn på gjensidige.no, aktiverer kort og henter PIN-kode	Får bekreftelse på samtykker i posten	Får EU-kortet i Posten fra NAV	Overfører penger fra annen bank	Si opp gamle forsikringer	Bruke "Kreditt når ubehlet er ute"								
	Anskaffelse	"Jeg slipper å betale alt selv og slipper å velge"	"Hun sa det var veldig fort gjort, og har alt du trenger til en grei pris"	"På gjensidige.no fant jeg raskt en pakke som gjør at jeg slipper å tenke, til en grei pris"			"Jeg forstod hva pakken inneholdt og kunne kjøpe den der og da."	"Nå vet jeg at pakken er på vei, og når den kommer"		"Pakken kom litt fortere enn de hadde lovet"	"Dette ser enkelt ut, ikke lenge igjen nå"	"Jeg får gjort unna alt det kjedelige med noen få klikk"	"Det er lett å se hvordan jeg skal komme i gang"		"Kortet kom også litt fortere enn de hadde lovet, og jeg ser hva som gjenstår"	"Bruksanvisningen forklarer hva jeg skal gjøre, hvorfor og hvordan"	"Jeg forstår hva dette brevet gjelder og hvorfor jeg får det"	"Dette hadde jeg aldri tenkt på uten Gjensidige"	"De gjorde det lett for meg å flytte pengene, og distribuere kontonummeret mitt"			"Jeg tar bare én telefon så har jeg pengene på konto innen 30 minutter"							
	Trykksaker		Snakker m/venner							Utleveringsseddel	Velkomstpakke				Brev m/VISA-kort		Samtykke-bekr.	Brev m/EU-kort	Bytte bank-skjema										
	Internett		DM til foreldre																										
	Telefon																												
Mobil																													
Sted																													
Bakslage-plasser																													
Forsikring		<ul style="list-style-type: none"> • Sendt ut DM til foreldrene om tilbudet • Sørg for at selgerne kan fortelle om pakken til foreldre • Hånder mottak av SMS til 1960, og mottak av bestilling via svardele fra DM 	<ul style="list-style-type: none"> • Pakken ligger tilgjengelig som et produkt på forsiden under både Forsikring og Bank • Banner i kampanjefelt • Elektronisk DM • Søkemotor-optimalisering 				<ul style="list-style-type: none"> • Sjekk om kunden er "nå" eller ønsket • Innfri internett-rabatt • Hånder samtykke-erklæring • Sendt bestillingsdata til EDB 	<ul style="list-style-type: none"> • Sendt velkomst-SMS og med forventet leveringstid og informasjon om EU-kortet • Undertrykke utsendelse av reisekort i S2000 • Trykke opp reisekort hver måned og sende til EDB 	<ul style="list-style-type: none"> • Opprette eFaktura for forsikringspremie slik at denne ligger klar når kunden logger inn i netbanken 				<ul style="list-style-type: none"> • Hånder samtykke for e-dokumenter 	<ul style="list-style-type: none"> • Hånder eFaktura 															
Bank							<ul style="list-style-type: none"> • Hånder merking av kunde 	<ul style="list-style-type: none"> • Undertrykke vanlig epost-utsendelse • Sendt velkomst-epost med forsikringsbevis, forventet leveringstid og passord 				<ul style="list-style-type: none"> • Hånder akseptert avtale 	<ul style="list-style-type: none"> • Automatisk opprettelse av konto og bestilling av kort 	<ul style="list-style-type: none"> • Sørg for merking av kunden slik at TAG sender ut riktig følgebrev med kortet 					<ul style="list-style-type: none"> • Hånder aktivering av kort • Hånder henting av PIN-kode 	<ul style="list-style-type: none"> • Sendt e-post med nytt kontonummer (som kan videregives) med vedlagt "Bytt bank"-skjema ferdig utfyllt 			<ul style="list-style-type: none"> • Ta i mot henvendelse til 03100 og vise vei frem til å opprette kontokreditt • Sendt ut kreditt-bekreftelse på SMS 						<ul style="list-style-type: none"> • Be om samtykke til å ta vare på opplysninger for fremtidig tilbud
3. part								<ul style="list-style-type: none"> • EDB registrerer ny bankkunde og sender datapakke direkte til S2000 for registrering • Lindorf sjekker for betalings-merknings 	<ul style="list-style-type: none"> • EDB pakker og sender ut pakken som PUM • NAV sender ut EU-kortet innen 10 dager 	<ul style="list-style-type: none"> • Posten kontrollerer pass og leverer ut pakken • EDB håndterer identifikasjon etc. for PUM 																			



Rapid, inexpensive experience prototyping & iterative development

Streetcar ROI: Triple Bottom Line

Streetcar

Economic

Announced profitability within 18 months of launch.

Largest club of its kind in the UK.

Environmental

Takes an average of 6 privately owned cars off the road per Streetcar.

Users drive 69% less.

Social

Expands mobility options of individuals and connectivity between transport modes.
Reduces congestion and local pollution.

Customer

A car owner spends on average £4,281.72 per year vs Streetcar users at £2,523.20 per year.

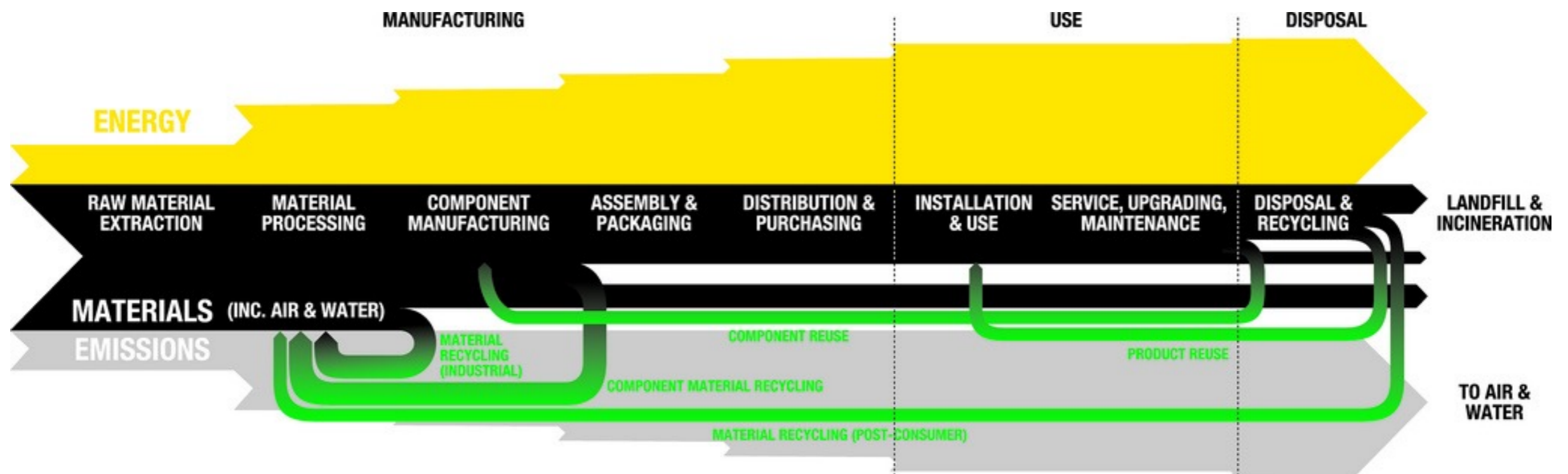
(Royal Automobile Club figure)

63.5% of car club members either give up their cars or don't buy a private vehicle.

Re-thinks a behavioural norm (hassle-free mobility).

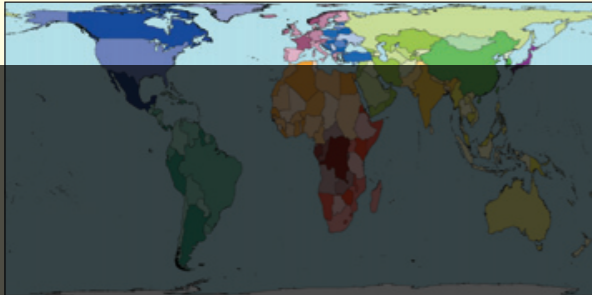
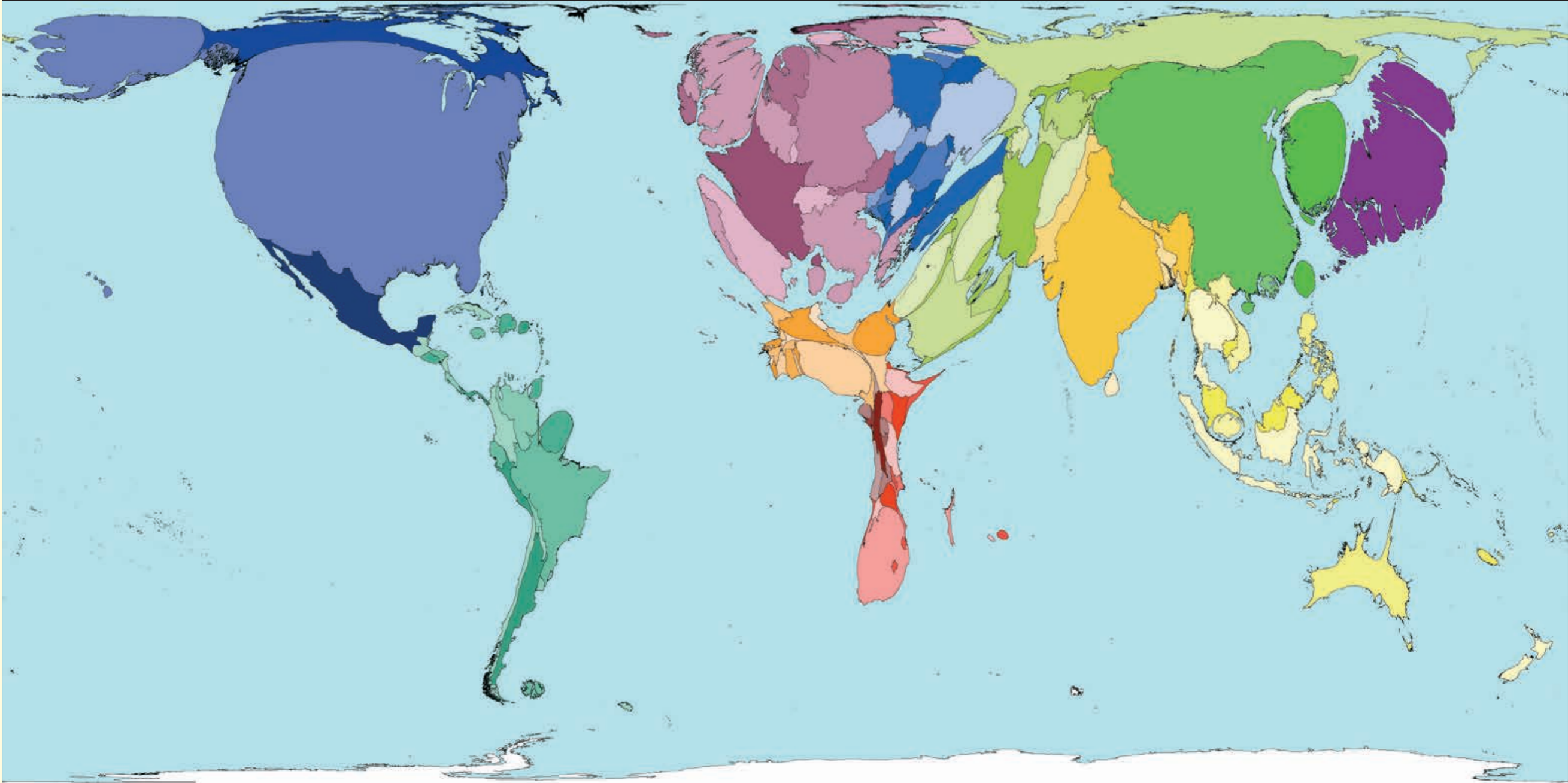
Supports a new social status.

Triple Bottom Line ROI



Life Cycle Analysis

Fuel Use



Land area

MOST AND LEAST FUEL USE

Rank	Territory	Value	Rank	Territory	Value
1	Luxembourg	13077	191	Haiti	286
2	Guatemala	12470	192	Yvli	245
3	Equatorial Guinea	12091	193	Madagascar	244
4	Iceland	11970	194	Myanmar	239
5	Bahrain	11304	195	Niger	236
6	Qatar	10845	196	Yemen	224
7	Israel	10780	197	Guinea-Bissau	210

Visualisation of macro effects

Technical notes
 • Data are from the United Nations Development Programme's Human Development Report.

A blue rectangular panel with a glowing red 'I' on the left and '58' on the right. The characters are rendered in a simple, blocky font and have a soft red glow around them. The background is a solid, slightly textured blue color.

I 58

Making invisible micro behaviours visible

Volksabstimmung und Großdeutscher Reichstag

Stimmzettel

Bist Du mit der am 13. März 1938 vollzogenen

Wiedervereinigung Österreichs mit dem Deutschen Reich

einverstanden und stimmst Du für die Liste unseres Führers

Adolf Hitler?

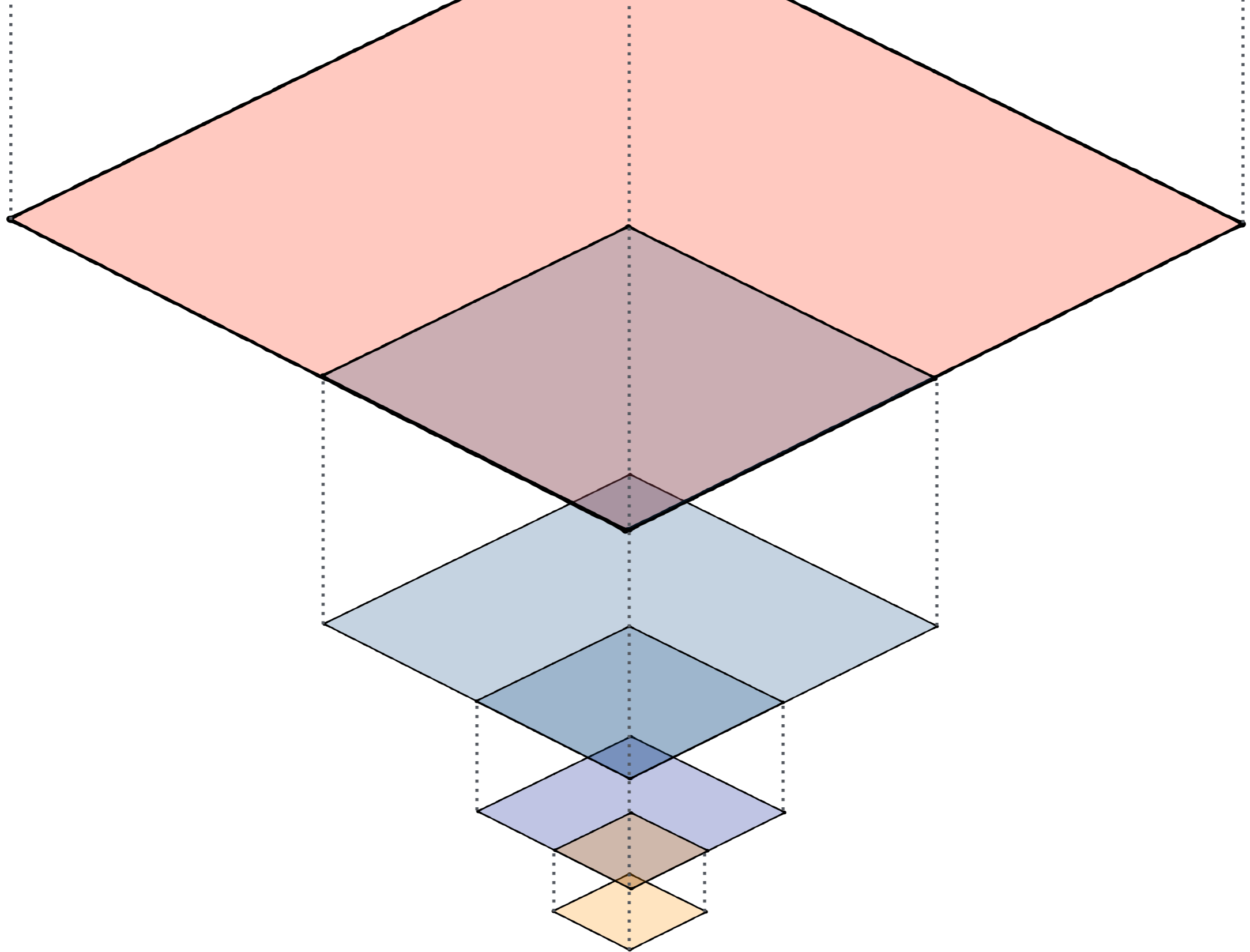
Ja



Nein



Design to influence behaviour is not new



Fluidly move between and across the layers - macro to micro



Design for the connections in-between, you must



A future in which services designed with as much care as products



THANK YOU!

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