DESIGN

Taking ideas to market

technology SCOTLAND with ENIGMA PEOPLE SOLUTIONS

NOVEMBER 1st - EDINBURGH

Scotch Whisky Experience, Royal Mile

Scintilla

ENIGMA PEOPLE SOLUTIONS

SPACE solutions

technology SCOTLAND

Championing key enabling Technologies

Stephen Taylor, CEO

Emma Dixon, PM

Key Enabling Technologies

- Advanced Materials
- Industrial Biotechnology
- Micro and Nano Electronics
- Nanotechnology
- Photonics
- Advanced Manufacturing Technologies

Agenda

- 5:00pm: Welcome & Networking
- 5:30pm: Opening — Stephen Taylor, Technology Scotland
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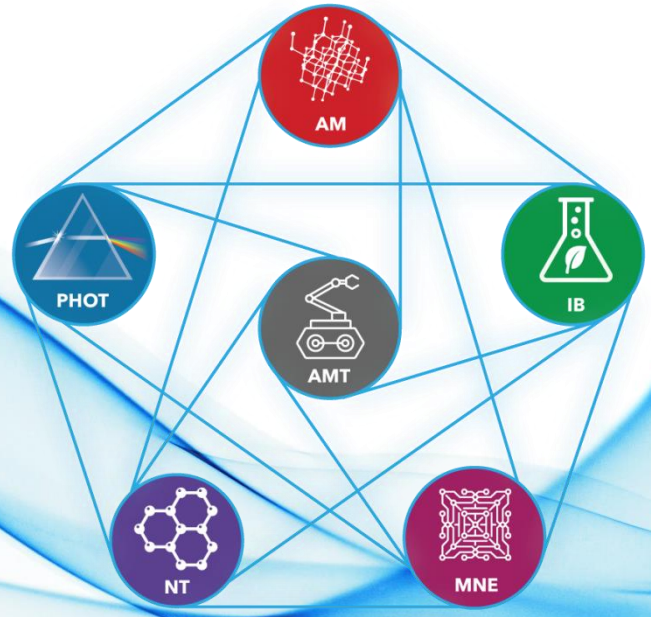
What is Technology Scotland?

The Home of Scottish Technology Companies

Building clusters around themes :-

- Technology (KETs)
- Markets
- Capabilities



Technology Scotland – Scotland's KET Cluster Management Organisation

Technology Scotland Main Objectives

- To foster ***Innovation*** in Scottish technology companies
- To encourage ***Collaboration*** amongst cluster members
- To help generate ***Business*** opportunities
- To promote ***Economic Development***
- To provide ***Advocacy*** for members to local and national government agencies

Technology Scotland – Scotland's Leading Technology Cluster Organisation

Now over 100 Members including

Special Interest Groups (SIGs)

SIGs established to date

- Scottish Optoelectronics Association (SOA)
- Compound Semiconductor Applications (CSA)
- Mobility as a Service (MaaS)
- Tech Design Scotland (TDS) – in Planning!

Technology Scotland – Listening to members

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Scotland's Technology Sector

- **Electronics**, from earphones to industrial control and defence systems
- **Photonics**, from lasers to displays
- **Semiconductors**, and other components for electronic and photonic systems
- **Embedded Software**
- **Advanced Materials**
- **Nanotechnology**

World view of Scotland!

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TechWeek europe

Key Applications Areas for Scotland

CONSUMER

SUBSEA

CIRCULAR ECONOMY

COMMUNICATIONS

DEFENCE & SECURITY

SPACE

ENVIRO MONITORING

SEMICONDUCTOR SUPPLY CHAIN

Key Facts for the Scottish Technology Sector

technology SCOTLAND

- The Technology Sector - a small but precious jewel in Scotland's economic crown
- Strong contribution to innovation and exports and with high salaries
  - Approximately 400 enterprises (or sites of large enterprises)
  - Turnover ~ £4.0 Bn
  - Exports ~ £2.5 Bn
    - Represents almost 10% of all Scottish exports
  - Gross Value Added ~ £1.5 Bn
    - Over 1% of Scotland's total economy (GDP)
  - Business Expenditure on R&D (BERD) ~ £160M
    - BERD represents 4.4% of turnover for the sector
    - Equates to about *one sixth* of all Scottish BERD
  - Employment ~ 15,000
  - Average gross salary ~ £36k = 67% above Scottish average

Source: based primarily on analysis of company accounts from Companies House data, with additional data derived from the Office of National Statistics (ONS) data

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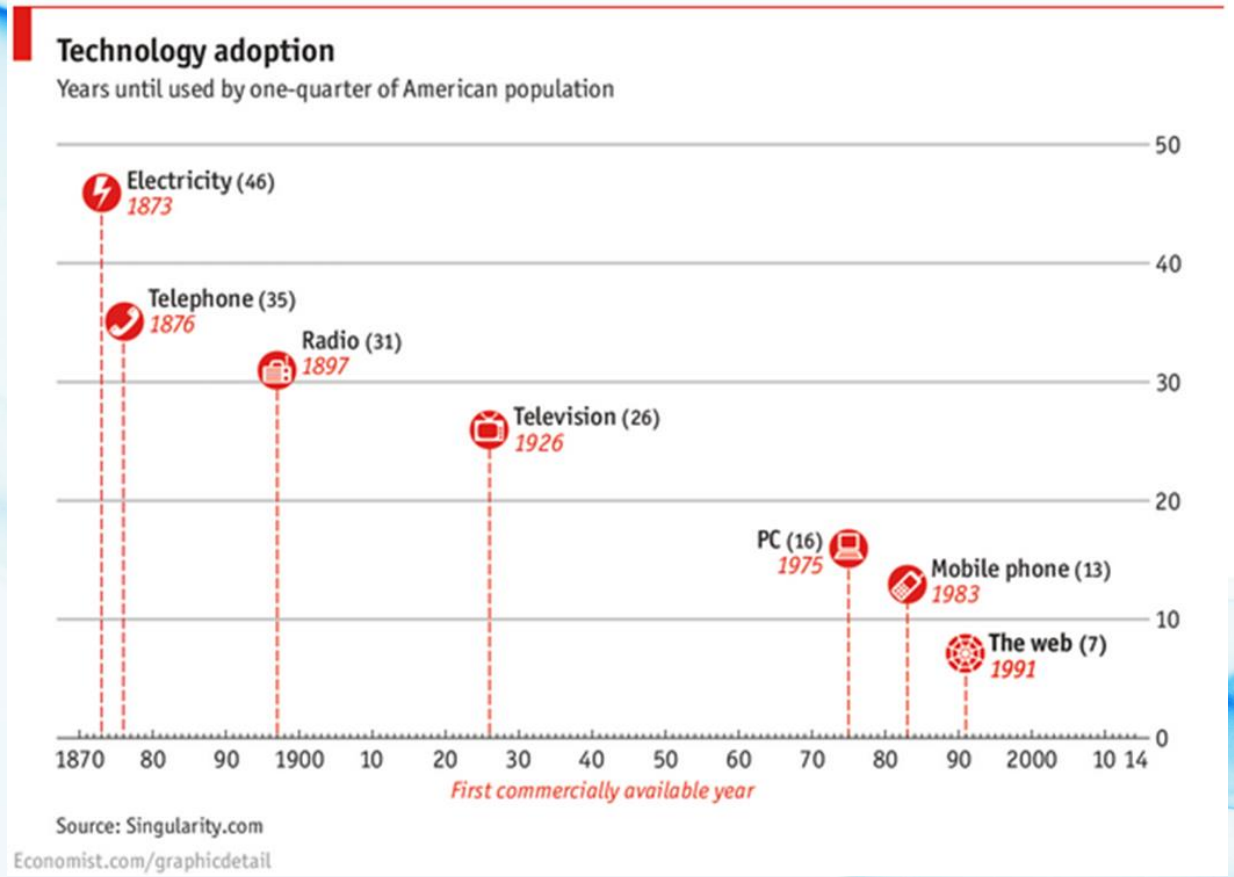
Design Cluster

Scotland's Core Design Capabilities

- Strong University and R&D Base
- Sensing Technologies
- Optical / Photonics Design
- Electronic & ASIC Design
- Industrial Design
- Software / Signal Processing / Algorithms
- Project Management
- New Product Introduction

Why Design is Important?

Rapid acceleration of technology adoption



Design – Speed is essential

Demand for a Design Cluster?

Concept raised by several companies

- The Technology Scotland Design Cluster / SIG will work to promote innovation and sustainable growth, primarily in small and medium-sized companies.
- We aim to embed design capabilities in SME's through a broad dialogue-based interface with businesses
- Disseminate knowledge through various projects, activities, and events and on the TS website through case studies and news update.
- Develop training in design thinking and design methods for leaders, innovators and development managers
- Match making between SME's and design agencies
- Research projects measuring design capabilities and the value of design

Scottish Design Cluster – Raising Scotland's Design Capabilities

Possible Model - Scottish Design Cluster

- It would
  - Operate under the Technology Scotland Umbrella
  - Create it's own brand identity
  - Have it's own allocated TS Program Manager
- Members should
  - Share best practise
  - Identify themes for events and workshops
  - Collaborate on bigger projects
- Technology Scotland would
  - Provide Executive Management input
  - Link the Design SIG to other established programs and activities
  - Promote participation through relevant communications channels

Scottish Design Cluster – Critical to keep Scotland at the leading edge

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Championing key enabling Technologies

Summary

Technology Scotland Value Proposition

- Cluster organisation benefiting members
- Innovative Scottish Tech Community
- Free Community Membership
- SIGs, Workshops & Events
- Join this evening

Technology Scotland Role

- Act as Scotland's Technology Cluster Management agency to stimulate discussion and collaboration among members
- Help members identify projects and [illegible] that will generate economic activity
- Work in partnership with [illegible] such as The IoS, CEED, Scotland IS etc
- Provide an independent voice for the technology community in Scotland
- Act as a conduit to and from the Technology Advisory Group, Scottish Enterprise, and Public Sector support.

Technology Scotland – Connecting ☑ Industry ☑ Academia ☑ Government

Technology Scotland Membership

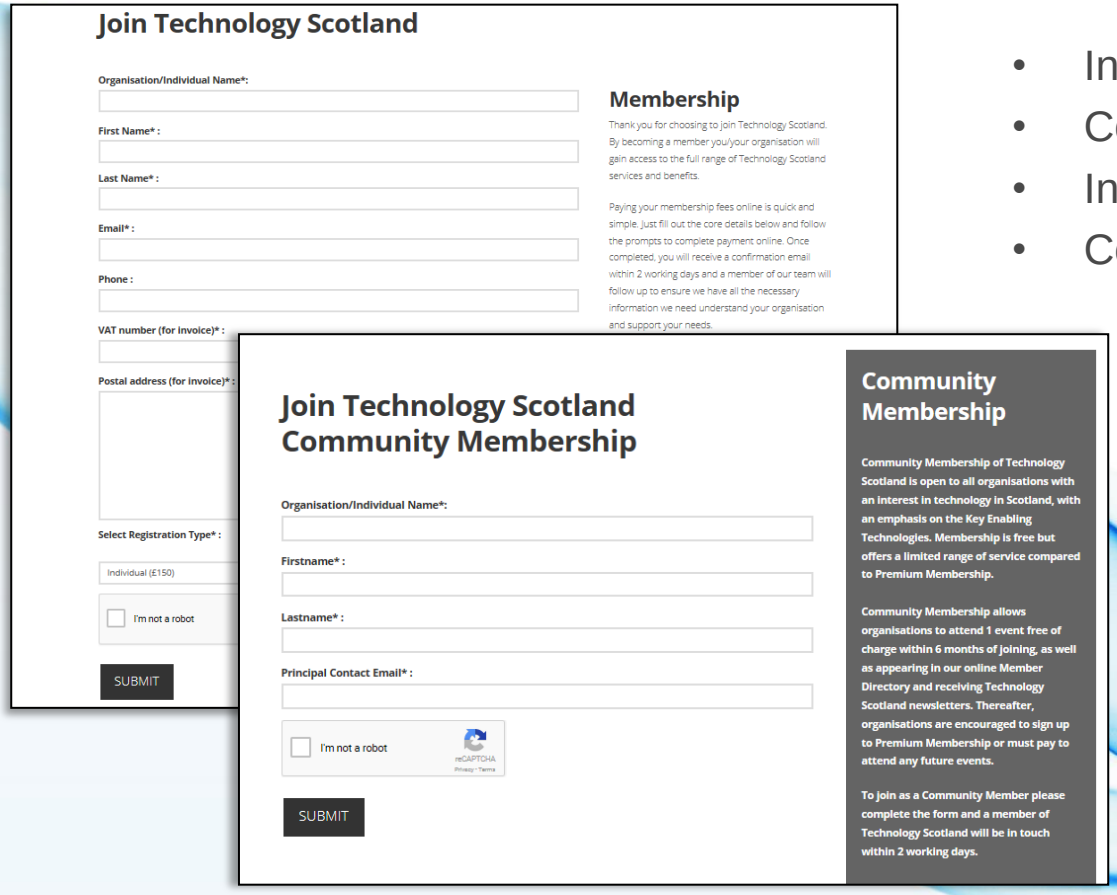
If you're not already a member, we would appreciate if all attendees sign up to Technology Scotland as either a Community Member or Premium Member.

- Community Membership is free to all
- Depending on what membership path you choose, there are a wealth of benefits available, including: -
- Membership of, and full access to other TS Special Interest Groups such as the SOA , Compound Semiconductor Applications (CSA), and Mobility as a Service (MaaS)
- Attendance at any TS or TS SIG event completely free of charge or at a significantly discounted rate
- A range of marketing and promotional opportunities through local, national and international representation, including
  - Coverage at TS and partner events
  - Speaking opportunities
  - Promotion through TS website, social media channels, newsletter and more
- Access to partner organisations and other UK and EU Clusters
- Exclusive offers and opportunities, such as a 50% discount on EPIC membership for Premium Technology Scotland members.

Technology Scotland – Benefits all members

Technology Scotland Membership

Joining Technology Scotland is simple!



- Individual Community Members
- Corporate Community Members
- Individual Premium Members
- Corporate Premium Members

https://www.technologyscotland.scot/join-technology-scotland/

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Lets talk...

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https://www.linkedin.com/company/10387387

info@technologyscotland.scot

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Enigma People Solutions

Specialists in:

Electronics
Photonics
Semiconductors

Ben Hanley, Director

ENIGMA
PEOPLE SOLUTIONS

Has Silicon Glen Reinvented Itself?

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Graduate Demand At Hottest For Years

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It’s About People, Stupid!

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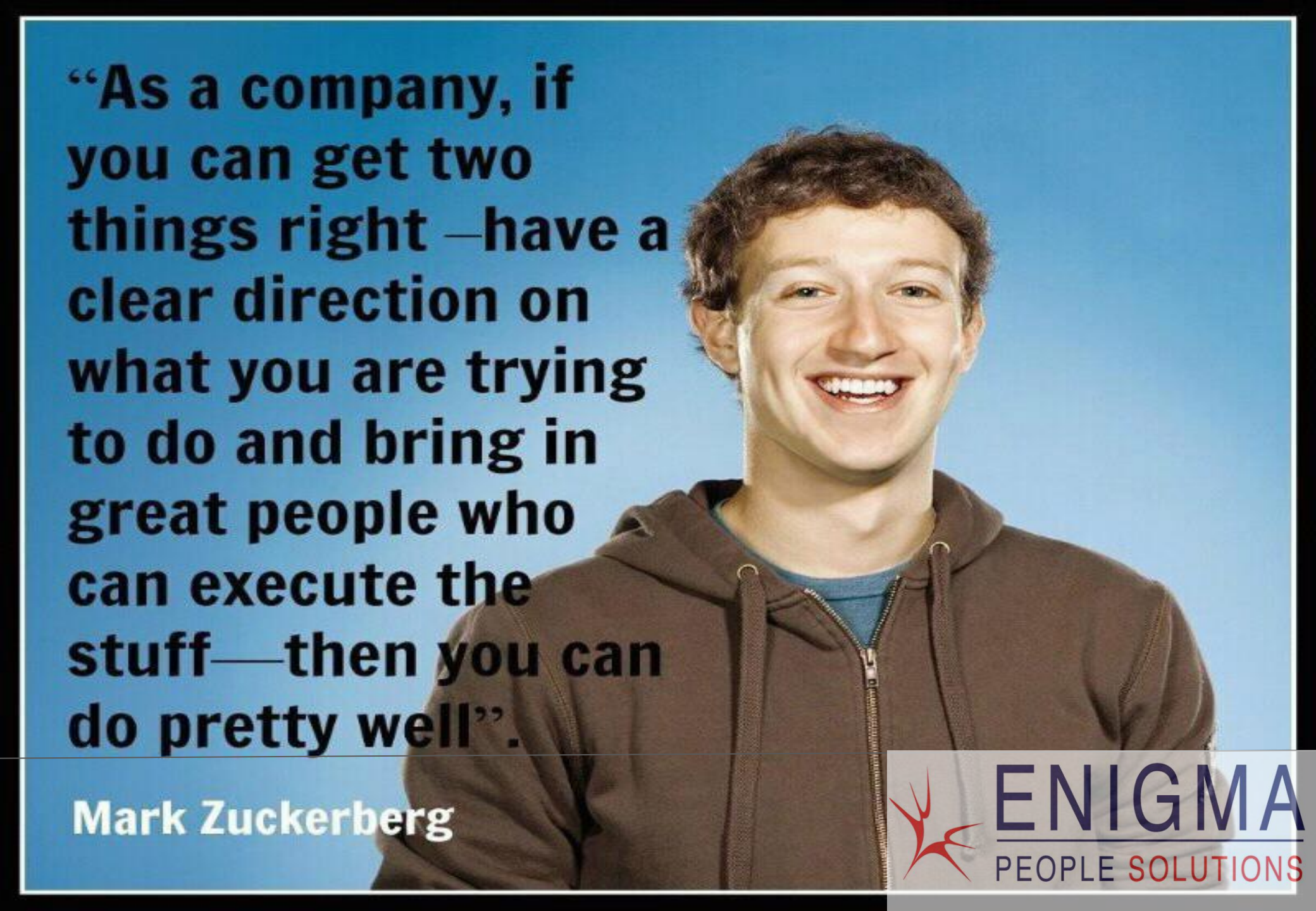
“As a company, if you can get two things right –have a clear direction on what you are trying to do and bring in great people who can execute the stuff—then you can do pretty well”.
Mark Zuckerberg
ENIGMA
PEOPLE SOLUTIONS

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Ben Hanley, Director

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Grant King
Design & Development Director, Wideblue

Biography

As Wideblue's Design and Development Director, Grant is responsible for implementing the industrial design, product design and engineering development required to take a customer's technology from concept to commercialisation. Grant has over 30 years of experience in designing and developing products for the computer, electronics, photonics and telecoms industries.

Prior to helping found Wideblue, Grant created and ran Polaroid's European Design Centre, leading the technical team that created Polaroid's first hand held digital imaging and printing system.

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wideblue
making technology happen

How do you know what to design in the first place?

Grant King

1 Nov 2016

Introduction

Visions of the future?

Everything is clear in hindsight but less obvious when trying to imagine the future

"If you asked people what they wanted they would have said faster horses. "

– Henry Ford

Henry Ford got it right but perhaps the exception rather than the rule…

Important to know the difference between what you know and what you think

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What is design anyway?

Philippe Starck
Juicer
£50 – £950 (Limited Edition)

Supermarket
Juicer
£3.50

Angel Juicer AG-20K
£9,750

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Where do product ideas come from?

A product that transforms an existing business

- One stop street photography
- Game changing business idea
- Limited technical skills
- Few barriers to entry
- Bigger company can create more complete product

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Making technology happen

Where do product ideas come from for products of the future?

They come from a vision of the future

"If you asked people what they wanted they would have said faster horses. "

– Henry Ford

Henry Ford got it right…

"I think there is a world market for about 5 computers."

– Thomas J Watson, IBM

But other successful business leaders have got it badly wrong

"There is no reason for any individual to have a computer in his home."

– Ken Olsen, DEC

"640K ought to be enough for anyone."

– Bill Gates, Microsoft

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Let's look at a specific example…

The Apple Newton

- First "PDA"
- Hand held computing
- User Interface
- Moderately successful
- Estimated number of units

200K total sales

An incomplete product missing some vital ingredients

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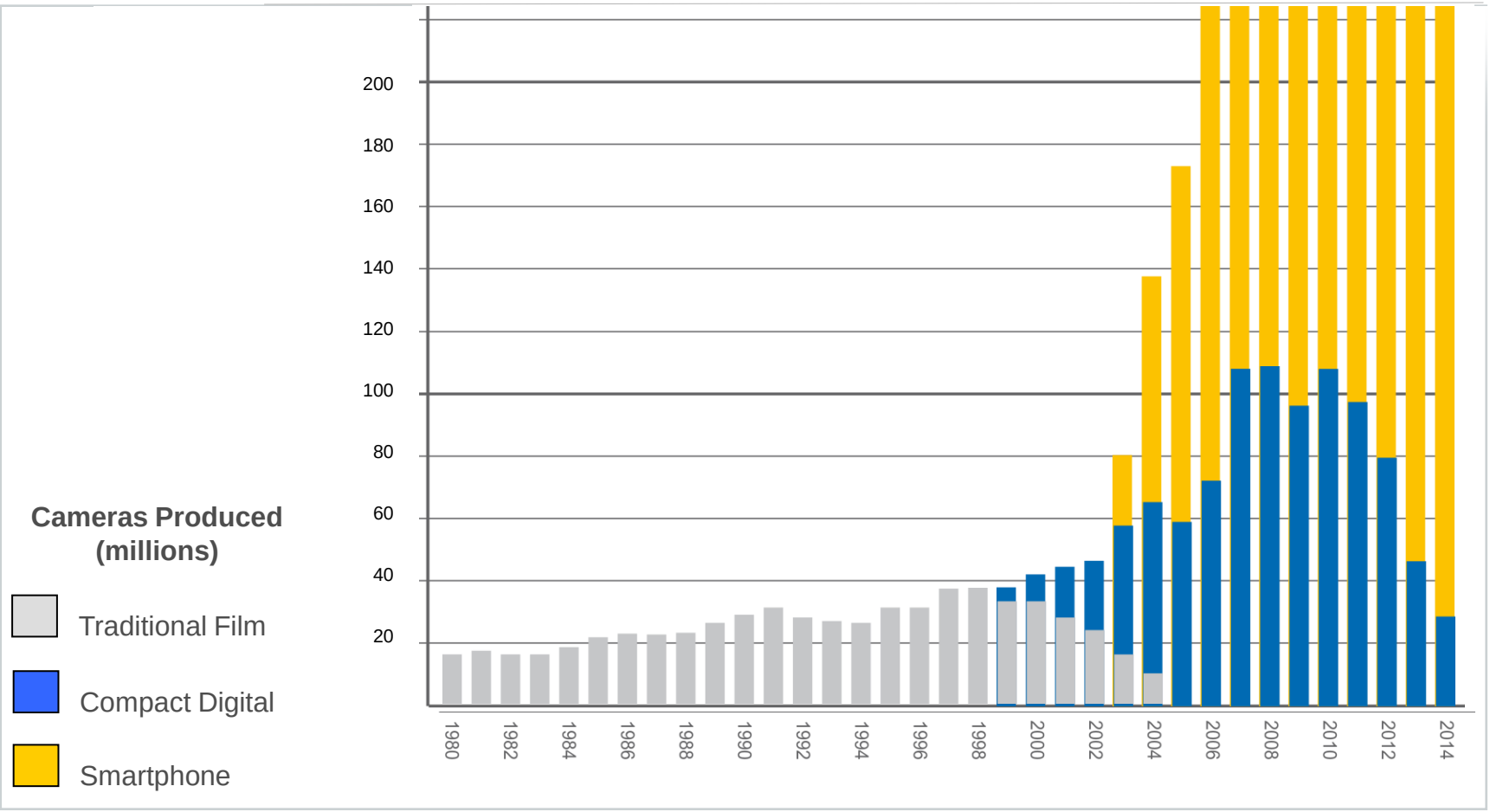
Let's look at how the environment was changing…



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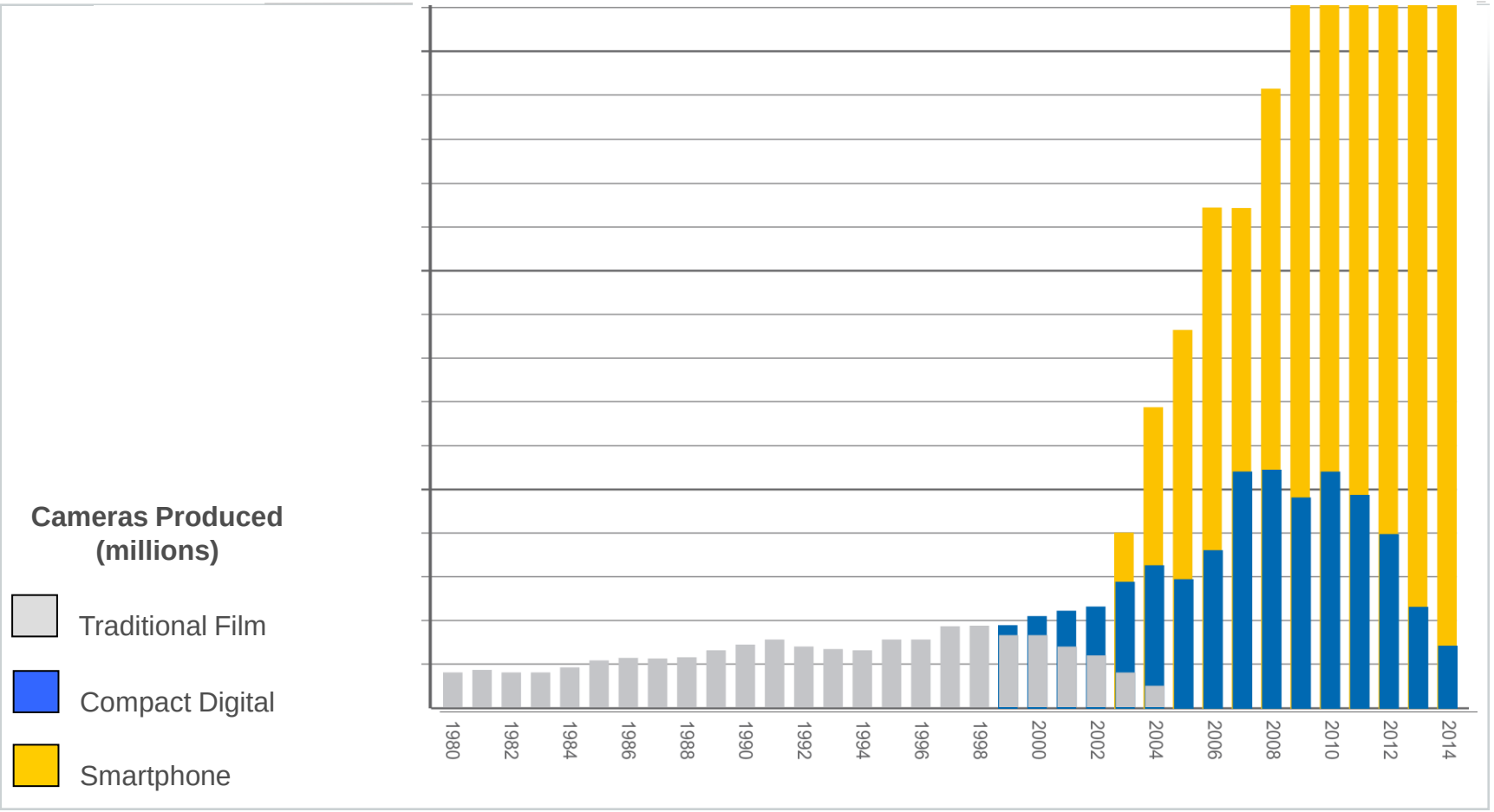

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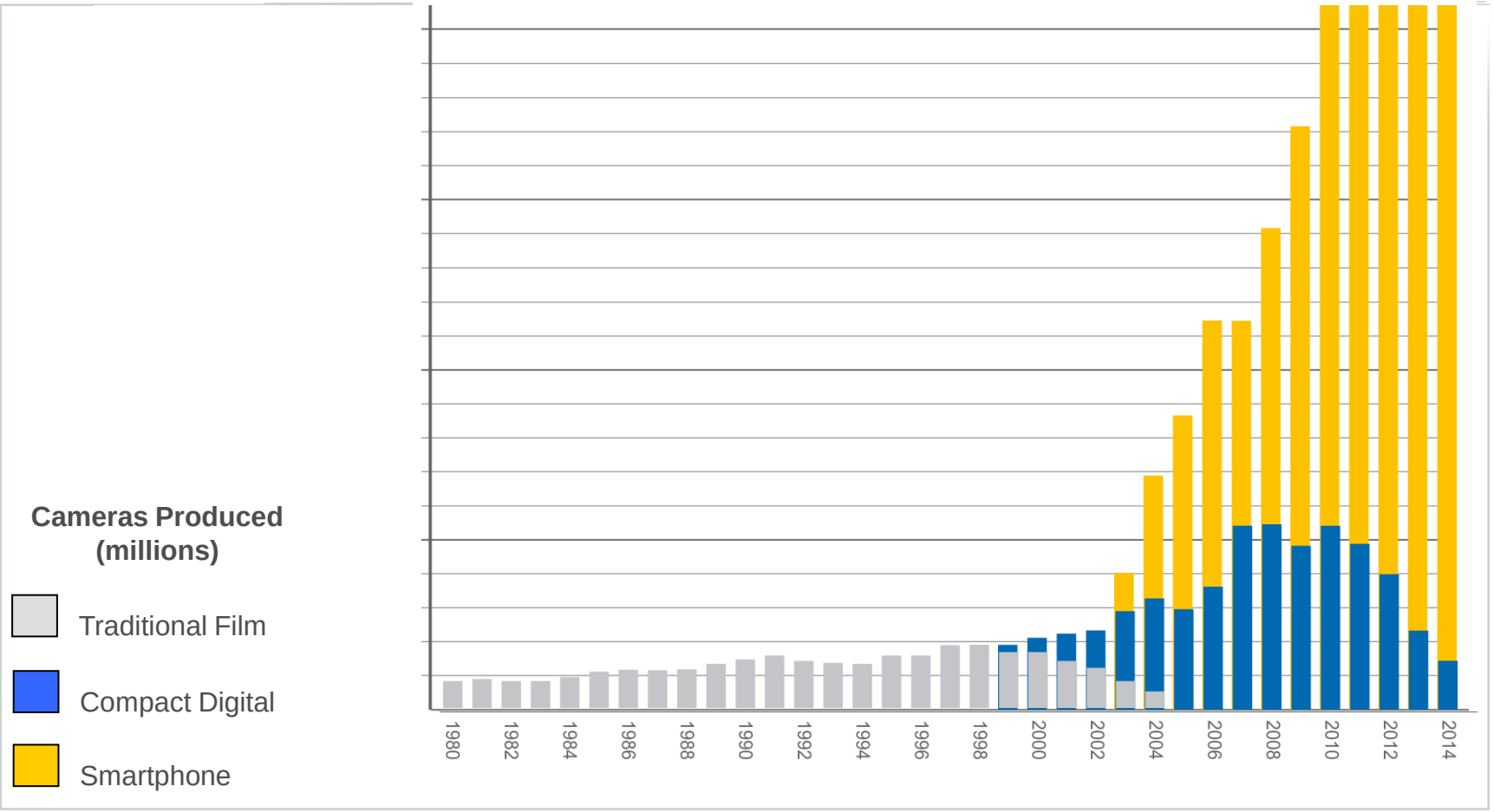

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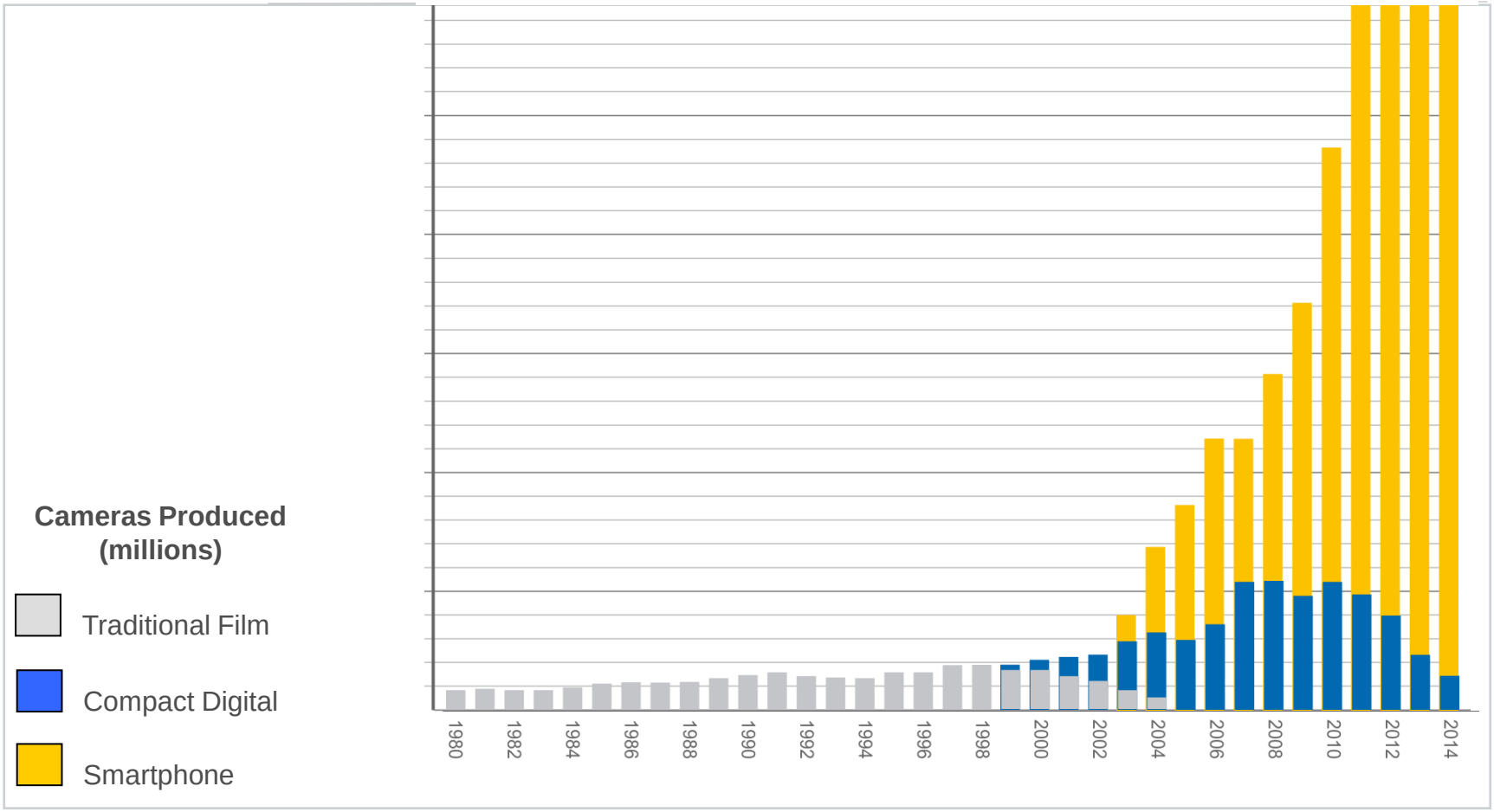

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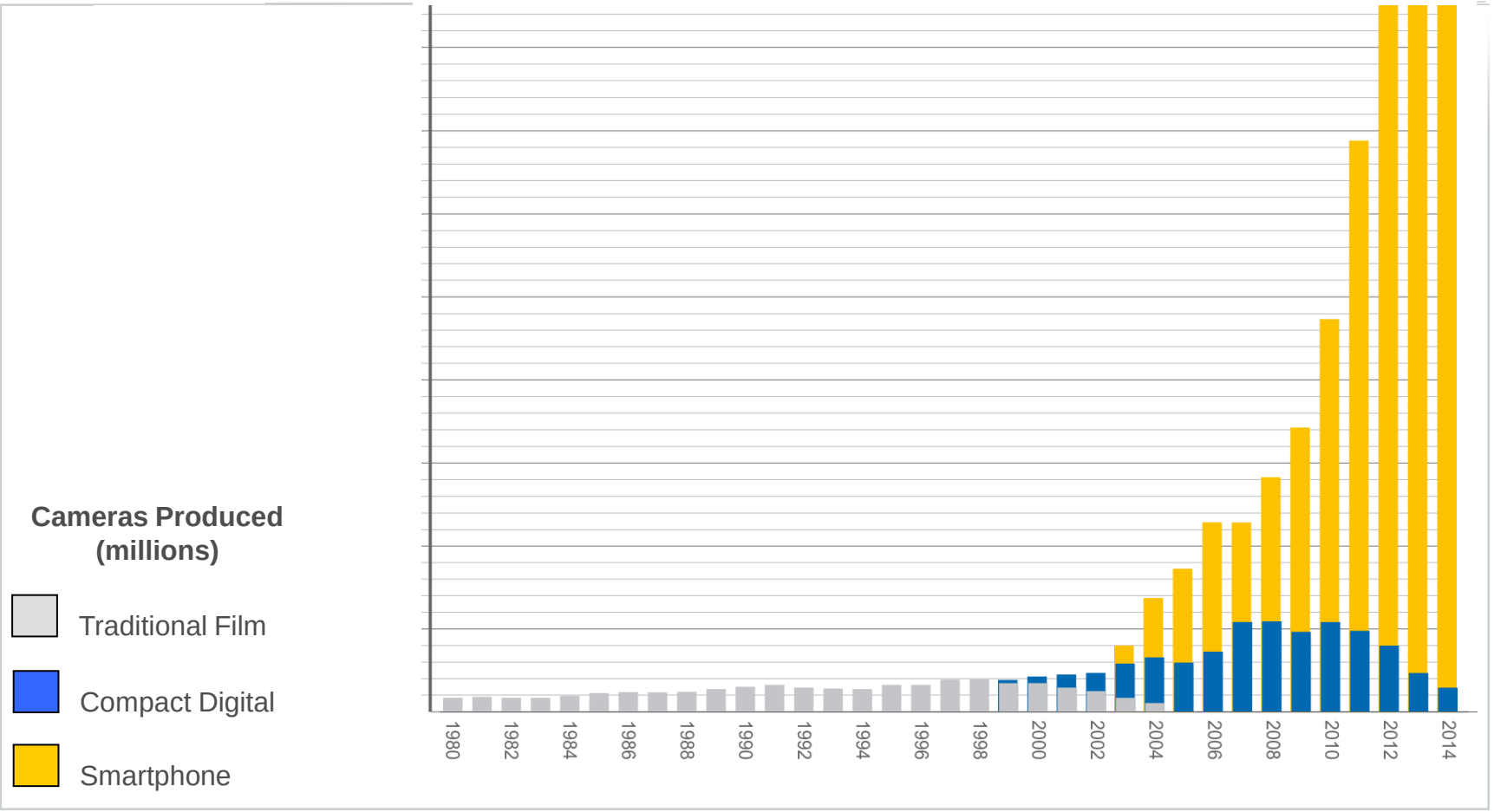

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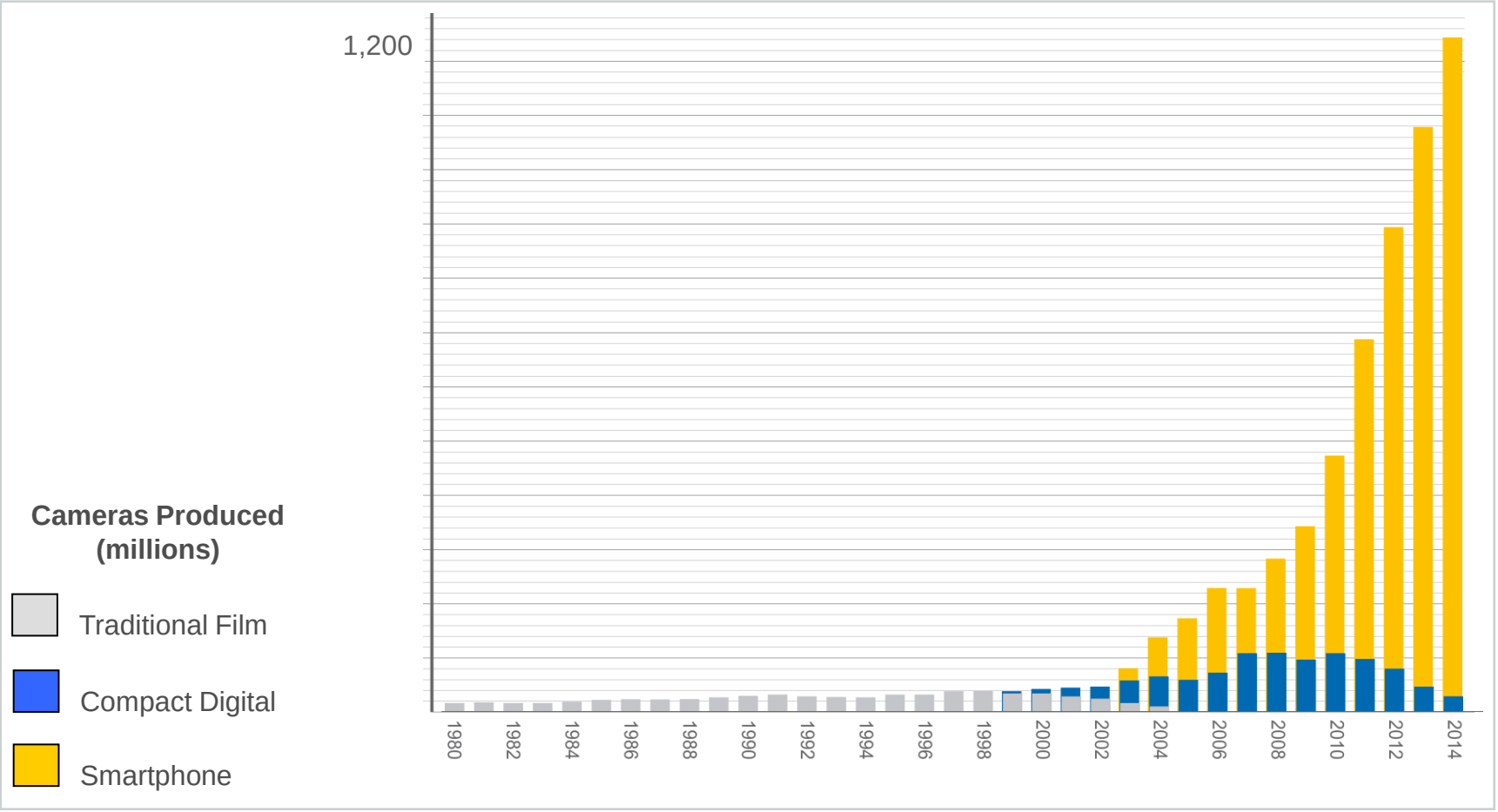

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What effect did phone cameras have?

2005

Pope announced in St. Peter's Square

2013

Pope announced in St. Peter's Square

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What happens when you get it right…

Lets look at what happens when you fill in the missing ingredients and create a more complete product

Not the best phone

Not the best PDA

Not the best camera

But arguably the most complete product

iPhone 5S

Pre-orders top 2 million in first 24 hours
First weekend sales top 9 million

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Some design learnings…

- Need to have a vision of the future
- Need to understand your market and what type of product you need
- Need to understand the type of design required
- Need to understand the business plan
  - Long or short term
  - Barrier to entry
  - Hi or low tech
- Need to engage with the market
- Safer to advance in stages

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Making technology happen

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Lynne Cadenhead
Nano-lit Technologies &
Chair of Women's Enterprise Scotland

Biography

A serial entrepreneur, Lynne has over 20 years investment experience, investing in, mentoring and nurturing a range of early stage technology and retail companies throughout the UK. She has worked with a wide portfolio of technology companies – from pharmaceuticals and polymers, to prosthetics and optics – and has also managed two early stage technology venture capital funds, served on over 30 boards and started up her own games company.

Lynne served as a member of the Scottish Executive Scottish Industrial Development Advisory Board (SIDAB) for eight years and was previously Chairman of Connect, the Scottish technology networking organisation. She was also an early investor and first Chairman of Touch Bionics, the world-leading upper limb prosthetics company, recently sold for £27.5 million.

Currently Lynne is the CEO of a start-up company developing unique biometric security software which fuses advanced biometrics and AES256 encryption to create the world's first Person to Person (P2P) Secure Email Tunnel. Simple, safe, secure global email communications with applications in defence, finance and healthcare.

Lynne is an investor and Director of Emotional Sciences, an artificial intelligence company using computational linguistics to detect emotions and the causes of emotion. The products enable people to read between the lines of what is being communicated and determine what people are really feeling at an emotional level. There are multiple applications, including wellness in the workplace and cyber security.

She is also a long-standing member of the Edinburgh Napier University Campaign Board, Chairman of UNICEF Scotland Advisory Board and Chairman of Women's Enterprise Scotland, the community investment company which works to unlock the economic potential of women in business

Scintilla

UK and European Patent Attorneys

Design: Taking Ideas to Market

Technology Scotland

1 November 2016

Peter McBride

Tel: 0141 255 0295 ¦ E-mail: peter.mcbride@scintilla-ip.com

Intellectual Property (IP)

Scintilla

The Major Categories

- Patents
- Trade Marks
- Copyright
- Designs
- Trade Secrets
- Know-how and confidential information

Tying it all Together

- Products of your “intellect”
- Different laws covering different aspects
- Multiple forms of IP can apply to a single product or service.

Managing IP

Scintilla

Your IP

- Identify
- Manage
- Secure
- Exploit

Third Party IP

- Defend
- Inform

Collaboration

- To be embraced!
- Have sensible chat about IP before starting serious collaboration
- Think through the dynamics of securing and managing IP, from perspective of all parties.
- Understand the other side’s viewpoint and expectations.

*

About Us

- UK & European Patent Attorneys
- European Trade Mark an Design Attorneys
- General IP audits and advice
- Specialist services and technical expertise in electronics and software fields

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SPACE SOLUTIONS

Inspiring People by Design

Design: Taking ideas to Market

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@spaces_solutions

what
we do
what we
deliver

commer
cial

cultural
success

Types of Space

Collaborat
ive

Focus

Flexible

Meeting

Shared

Personal

Client

attra
cting
retainin
g talent

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Lets talk...

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