



Thursday 29th September 2016

Welcome

Phil Worms



Agenda

10.35 am - Introduction – *Polly Purvis, CEO ScotlandIS*

10.40 am - The Digital Landscape – *Maggie Morrison, VP, CGI*

10.55 am - The Digital Xtra Fund – *Ian Ritchie CBE*

11.15 am - Break

11.30 am - Spotlight on Three Projects

- Inverness College – *Nicola Macdonald*
- Scottish Libraries & Information Council – *Gillian Daly*
- Edinburgh College – *Samantha Blyth*

12.15 am - Q&A Panel Session

12.30 am - Lunch, Networking & Demonstrations

Polly Purvis

CEO, ScotlandIS



Scotland's Digital Landscape

Maggie Morrison

VP, Public Sector, CGI



Scotland – The Good News

- 80,000 working in digital technology*
- Forecast to grow 15% to 92,000 by 2020
- Contributes £5 billion (4%) GVA to the Scottish economy
- Requires an additional 11,000 new entrants each year
- 83% of Employers want to grow Tech Staff Numbers in next 12 months
- 81% of Tech Businesses are expecting sales to increase over the next 12 months.

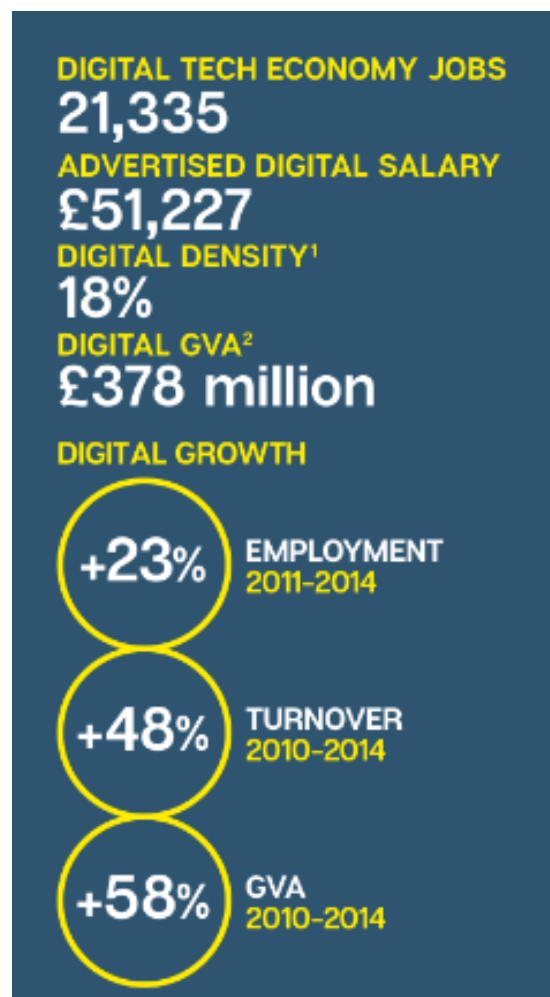


*32,000 in Tech Sector 48,000 in other sectors *Sources: ScotlandIS, SDS*

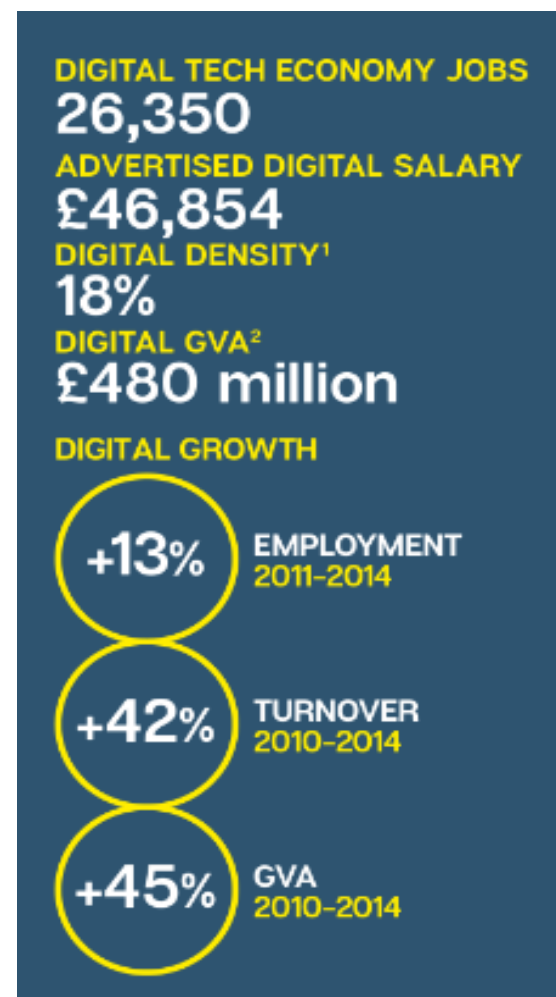
Scotland – The Good News

Tech Nation Report 2016 (2010-2014)

- Edinburgh – 3rd Highest Salaries in UK
- Dundee - At 129%, it had the 3rd highest growth in turnover in the UK
- Glasgow – Rated #1 for Expertise in FinTech



EDINBURGH



GLASGOW



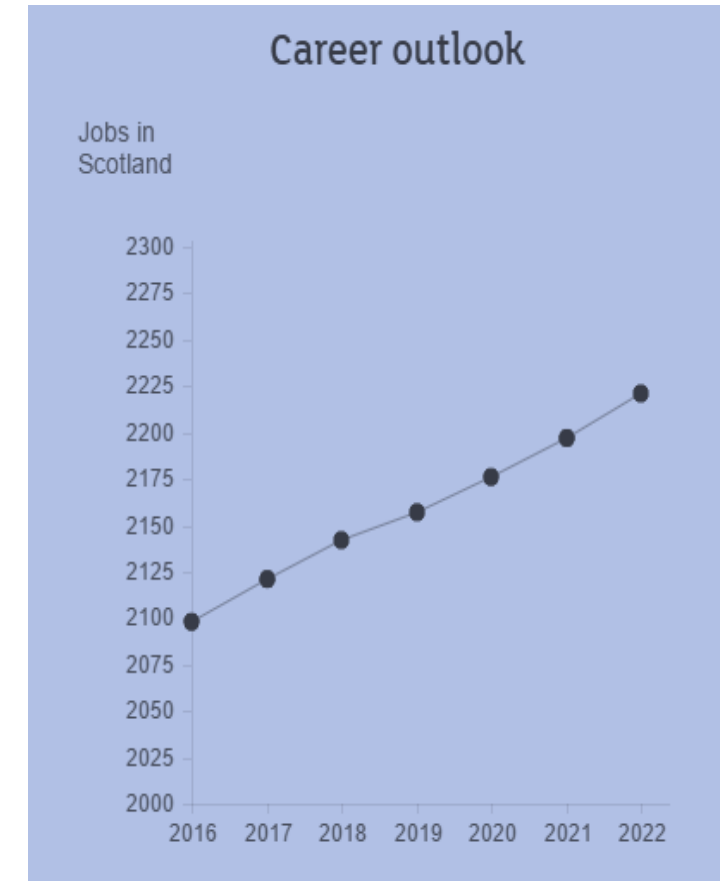
DUNDEE

Scotland – The Good News

- 43% rise in the number of technology businesses in Scotland in the last five years - the fastest growth in the UK (31%) outside London – with 3,000 New Businesses
- North Lanarkshire recorded a 20% rise in the past year – the fifth highest in the UK
- Glasgow had a 12% Rise within UK's Top 20 year on year growth



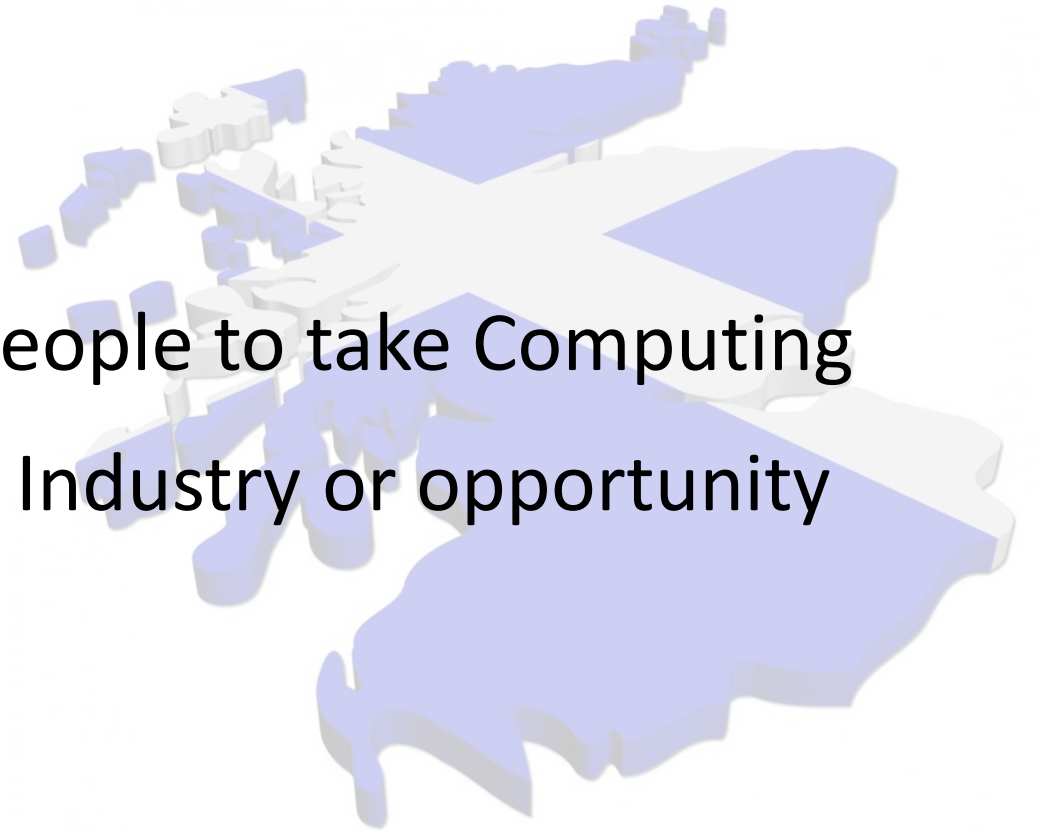
Big Data/Data Analytics



Cyber Security

Scotland – The Not So Good News – The talent pipeline

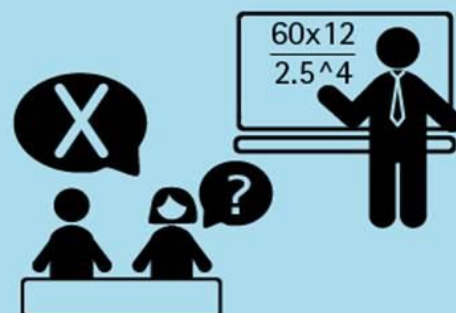
- Ageing Workforce
- Gender Imbalance
- Not attracting enough young people to take Computing
- Parents do not understand the Industry or opportunity
- Bright Lights of London etc.
- Industry needs to reach out



Some Statistics...

60%

of girls aged 12 believe mathematics and science is too difficult to learn.



14%

of parents said they understand the different career opportunities that exist for their daughters.



51%

of teachers and 42 percent of parents believe the perception that STEM subjects are for boys only.



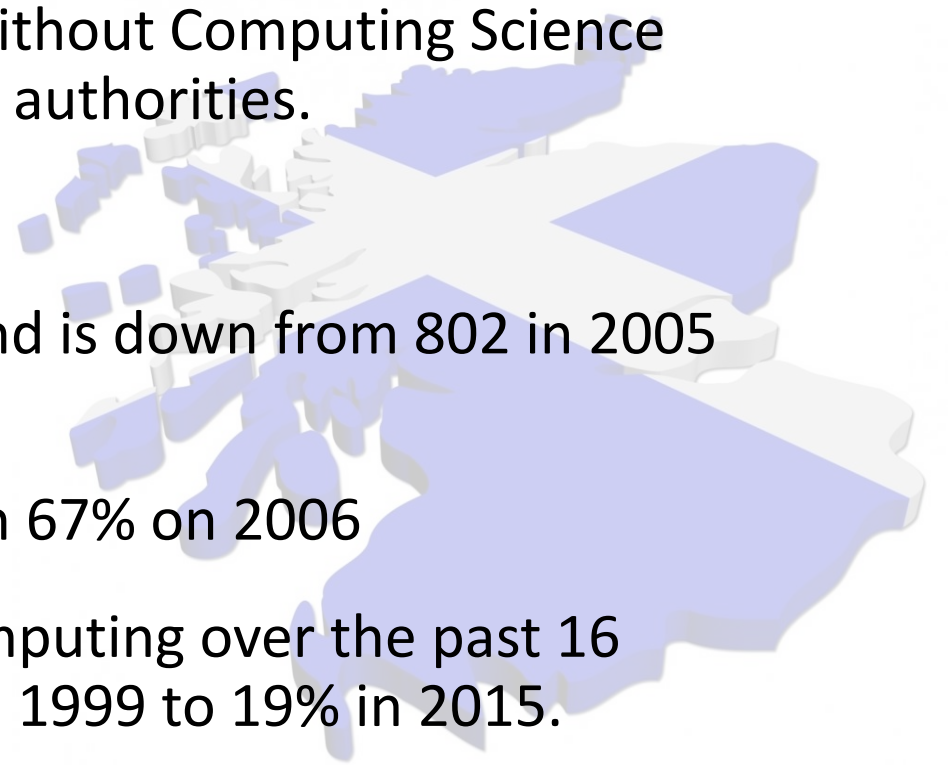
77%

of girls feel that the science and technology sector is lacking high profile female role models.



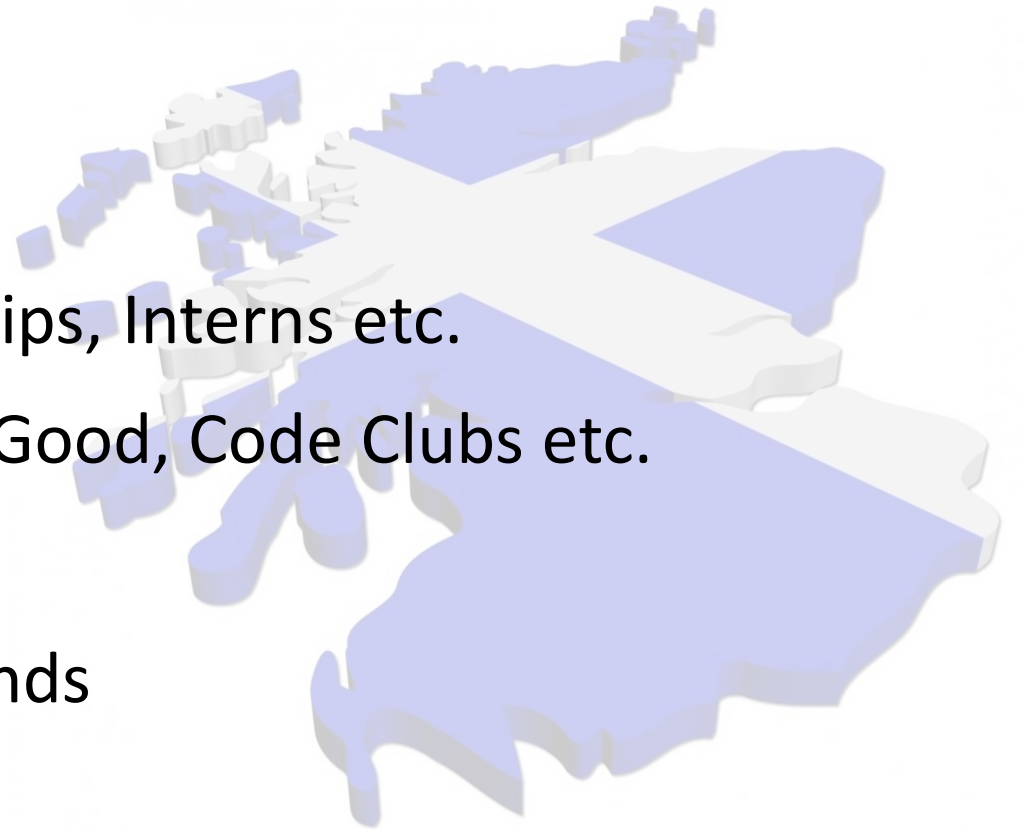
Scotland – The Not So Good News – The talent pipeline

- 17 local authorities with secondary schools without Computing Science teachers, up from 12 in 2014. 50% of all local authorities.
- 17% of schools have no computing specialist
- The number of Computing teachers in Scotland is down from 802 in 2005 to 598 in 2015
- New teachers entering the profession is down 67% on 2006
- A decline in the percentage of girls taking computing over the past 16 years, with the number dropping from 27% in 1999 to 19% in 2015.



Scotland – Not all Doom & Gloom

- Good Universities
- CodeClan
- Routes into Industry – Apprenticeships, Interns etc.
- Extracurricular activities – Apps for Good, Code Clubs etc.
- DigitalXtra Fund
- Real will to reverse the negative trends



Final thoughts...

We need to learn from current global best practices around work based learning starting early in school

Industry, Government and Education need to be more closely aligned

Industry needs to lead by investing more significantly and earlier – many organisations including CGI are now providing employees with the opportunity to work, earn and learn.

We need to raise awareness of the careers opportunities in the industry – key influencers parents, teachers, peers – position Digital as careers of choice.

We need to address the Gender issue or Scotland will continue to miss out on half the available talent.

Workplaces need to change to adapt to this new world.

This is a huge opportunity for Scotland.....and it is up to us. If not us, then who?



Digital Xtra Fund
Ian Ritchie CBE



Digital Xtra Fund - Background

- In March 2014, Skills Development Scotland (SDS) published the Skills Investment Plan (SIP) for Scotland's Digital Technologies Sector.
- This plan aimed to:-
 - identify, validate and clarify the skill issues faced by the industry,
 - create a framework for the development of skills provision to meet industry needs.
- A key action highlighted in *Broadening Future Talent Pool*
 - - **the creation of a fund to assist the growth of extracurricular activities across Scotland**

Digital Xtra Fund - Purpose

- Ensure that initiatives are coordinated in a prioritised programme
 - by allowing funding requests to be reviewed objectively
 - prevent inconsistencies which can arise from providing support on an ad hoc, first come, first served approach
 - support greater visibility of the impact in terms of addressing gender, diversity, geography spread, uptake etc.
- Evaluate interventions (including quality of submissions and value for money) and make recommendations for future delivery
- Continue to meet the original objectives of the SIP

Digital Xtra Fund - Objectives

- Increase participation by young people of 16 years or under in extracurricular computing science and digital technology initiatives
- Deliver activities that enrich and enhance those which are currently offered through formal education routes
- Expand the geographical reach of extra-curricular computing science activities across Scotland
- Encourage greater female participation, and other under represented groups, in computing science
- Encourage greater links between industry and young people
- Broaden the future talent pipeline for computing science and digital technology skills

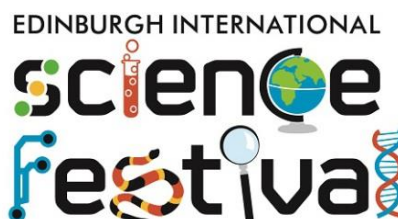
Digital Xtra Fund – 3 Phases

- Phase 1 – Creation of a project framework managed by Skills Development Scotland, HIE, Education Scotland and ScotlandIS to:
Distribute initial fund of £250K this financial year
- Phase 2 – Identify & Map the Extracurricular Activities across Scotland
- Phase 3 – Ensure Digital Xtra Fund continues and is supported by Industry
- 95 applications were received

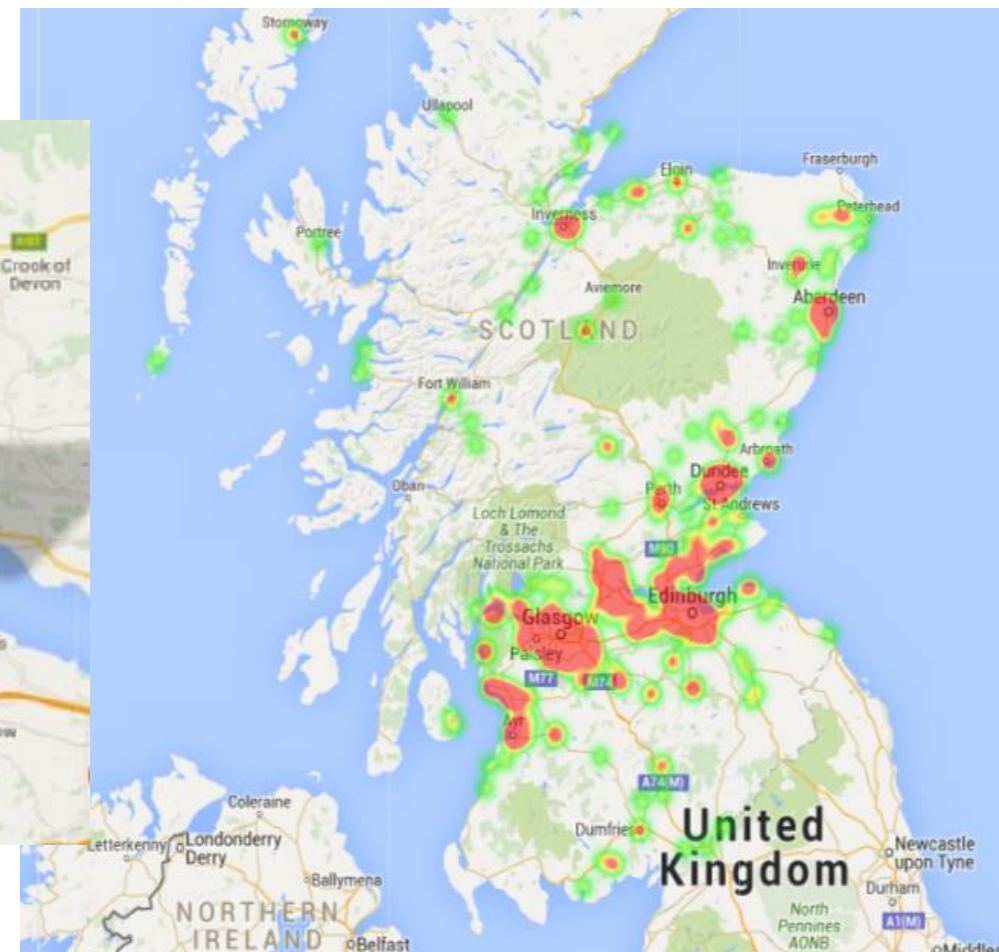
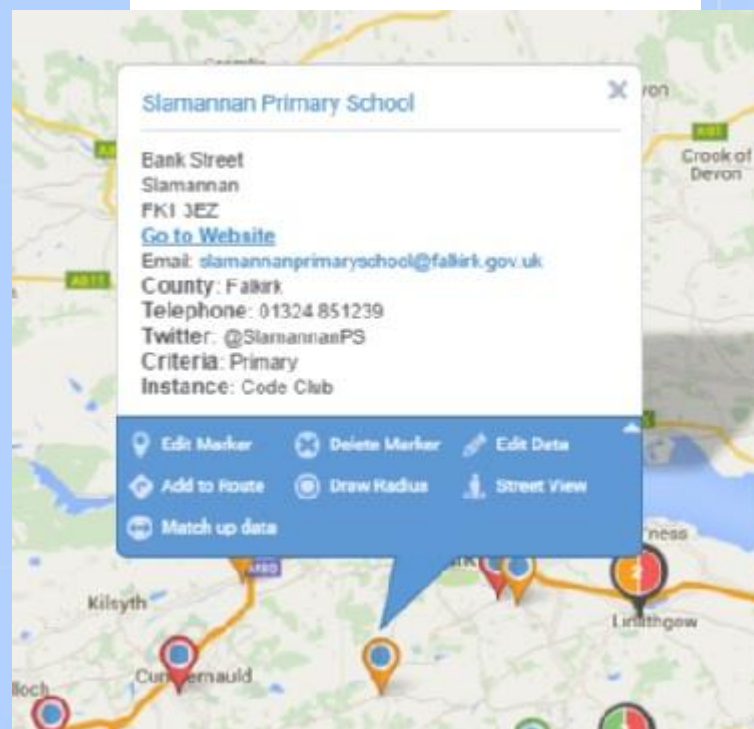
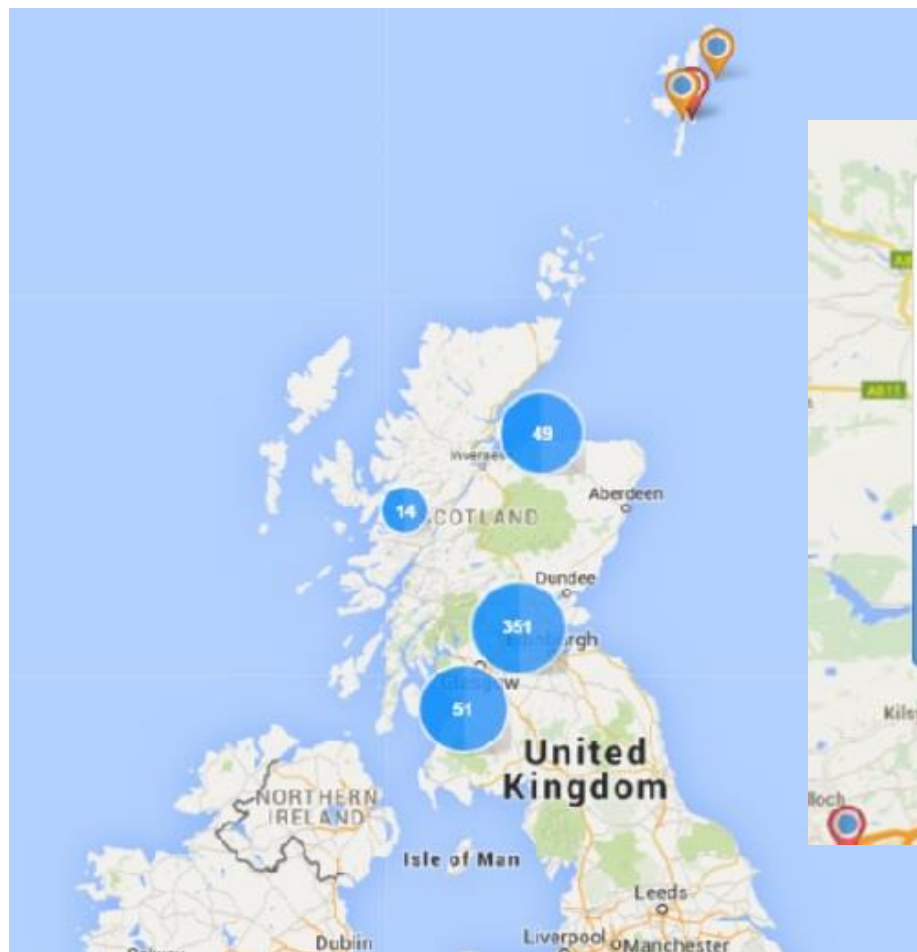
Phase 1 - Our First Digital Xtra Fund Grant Awards



Prince's Trust



Phase 2 – Mapping of Extracurricular Activity



Phase 3 – Sustainability of Digital Xtra Fund

- Preference for an separate legal body to administer the fund in future - possibly a charitable entity
- Gain maximum value from coalescing private and public sector funds.
- Create a single point of entry for initiatives to obtain funding, reducing the resource time they put into sourcing funding opportunities.


Digital Xtra Fund – Next Steps


- Over the next 6 months ScotlandIS, working on behalf of the Digital Xtra Steering Group, will initiate such a body from both private and public sectors
- Gauge industry support for funding
- Develop a package of funding options to present to funders

Digital Xtra Fund – We Now NEED

- **Pledges of Support**
- **Possible Trustees**
- **Donations/Sponsorship**

Digital Xtra Fund – Underway



HOME
ABOUT
APPLY
PARTNER
FIND AN ACTIVITY
PROJECTS



Welcome to DigitalXtra Fund


"All that is valuable in human society depends upon the opportunity for development accorded the individual."

Albert Einstein



Log in



Forgotten account?



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📍 Scotland, United Kingdom

🌐 digitalxtrafund.scot

📅 Joined May 2016



digitalXtra fund

Digital Xtra Fund

Computer Software

1-10 employees

Home Analytics Notifications

Website & Social Media

Breaking News!

A New Fund of **£150,000** will be available from Monday 3rd October, 2016

(Closing Date - Friday 4th November 2016 at 12:00)

Minimum Grant £1,500

Maximum Grant £25,000

Full details on Public Contracts Scotland web site.

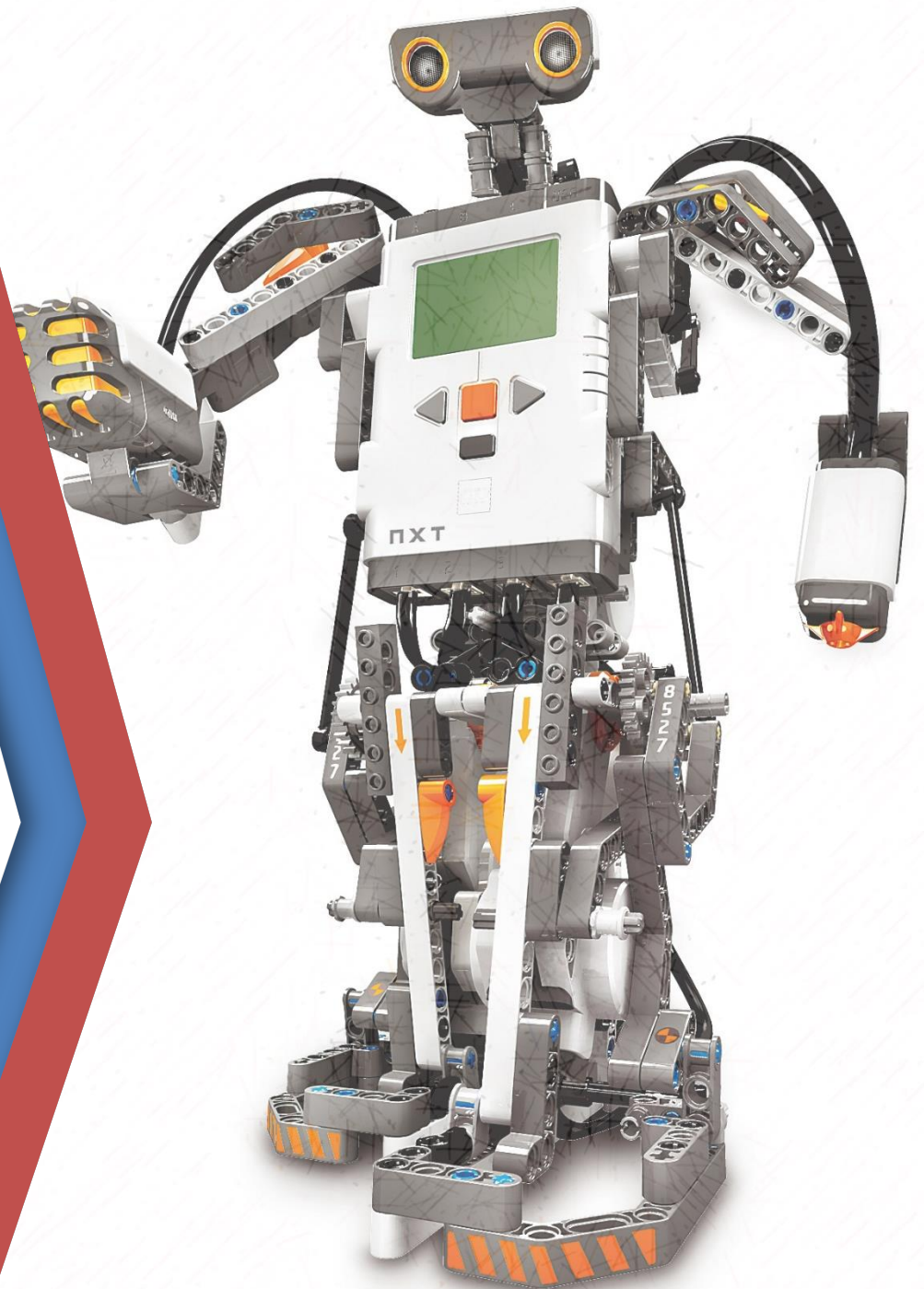




Highland Schools Programming Competition

Nicola Macdonald

Programme Development Manager,
Business and Computing
Inverness College UHI



Project Aims

- Promote and develop and interest in programming and computing by increasing the number of primary aged children participating in computing science related activities in schools.
- The programme is designed using Lego® Mindstorms (Robotics) to encourage problems solving and programming skills.
- The programme will run between October and February culminating with a Competition in Mid-March where all pupils and staff will come to inverness College Beechwood campus for the competition.

Project Aims

- This will be delivered within the identified schools by a member of Inverness College Computing team delivering workshop activities for pupils and staff at a convenient time within the school week.
- This should increase engagement with the schools as its arranged at a time that benefits them rather than the deliverer.
- The pupils will be working towards programming a robot to navigate an obstacle course in school. The competition will give the students the opportunity to successfully navigate a different obstacle course using the skills they have developed over the period of the project.

Who will it help?

- There has historically been a lack of this activity in the Highland area. This is attributed to the rural location of the schools targeted and a shortage of resources in schools situated in economically deprived areas.
- Computing is historically deemed to be a male dominate discipline.
- This is aimed at all primary pupils in P5,6, and 7 (depending on amount of pupils) and staff within the schools, who are involved in computing and IT related activities, (or staff who would like to)

Who will it help?

- The aim of the project is to undertake workshops with up to 60 pupils per school over the 4-month period.
- The funding will allow interested teachers and students to participate in current CPD that will directly benefit both pupils and staff in a fun and interactive environment.
- A crucial objective of the project is to develop confidence, self-esteem and leadership skills whilst inspiring young people to want to learn about digital technology.

Which Schools?

6 schools are in consultation and visits have been arranged for the following primary schools.

- Bridgend Primary School, Alness, Ross and Cromarty
- Cannich Bridge Primary School Cannich , Highlands
- Merkinch Primary School, Inverness, Highland
- Auldearn Primary School, Nairn, Highland

Future Plans

The Project's Objectives:

- To develop an ongoing interest in developing skills in programming in primary children
- Provide a CPD resource for staff that can be developed year on year
- Encourage additional schools each year to participate in the project through providing materials and peer support from existing school teachers

Future Plans

The Project's Objectives:

- Allow all pupils to progress to secondary schools with an interest in programming / computing that can be encouraged through to National Qualifications Foundation Apprenticeships (FA), Modern Apprenticeships (MA) and beyond.
- Develop stronger links with schools and local colleges throughout the UHI catchment area by distributing support through local partner colleges.



Code Clubs in Libraries

Gillian Daly

Scottish Library & Information Council



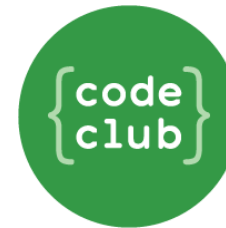
Code Clubs in Libraries

- Who we are
- What we are going to do
- How we are going to do it
- What outcomes we will deliver
- What we will do next

Project Partners



- Advisory body to the Scottish Government on library and information matters
- Supports service development and innovation across the library sector



Code Club

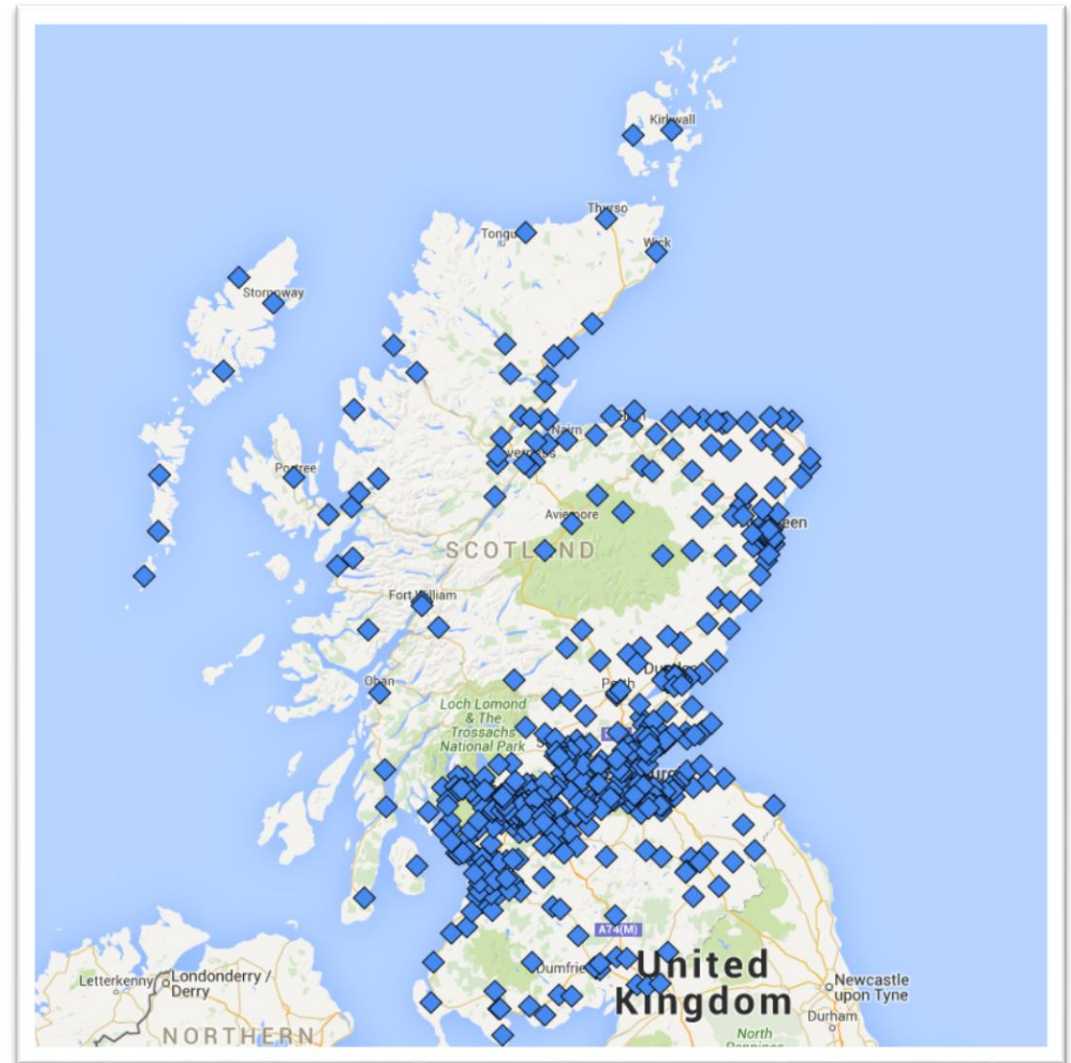
- UK-wide network of after-school coding clubs for children aged 9-11
- Provide project and training materials



Scotland's Public Libraries

- **602** libraries
- Over **27 million** visits each year
- **13.5 million** virtual visits
- **9 million** hours of free internet access

Chartered Institute of Public Finance & Accountancy, Library Actuals 2014-15 (2016)



Project Aim

- Coding clubs in all 32 library services
- 12-week coding programme offered in libraries
- 372 coding sessions delivered



Project Plan

- Training workshops for library staff
- Around 5 staff in each local authority area will participate
- Network of over 150 Code Club leaders established in libraries



Project Timeline

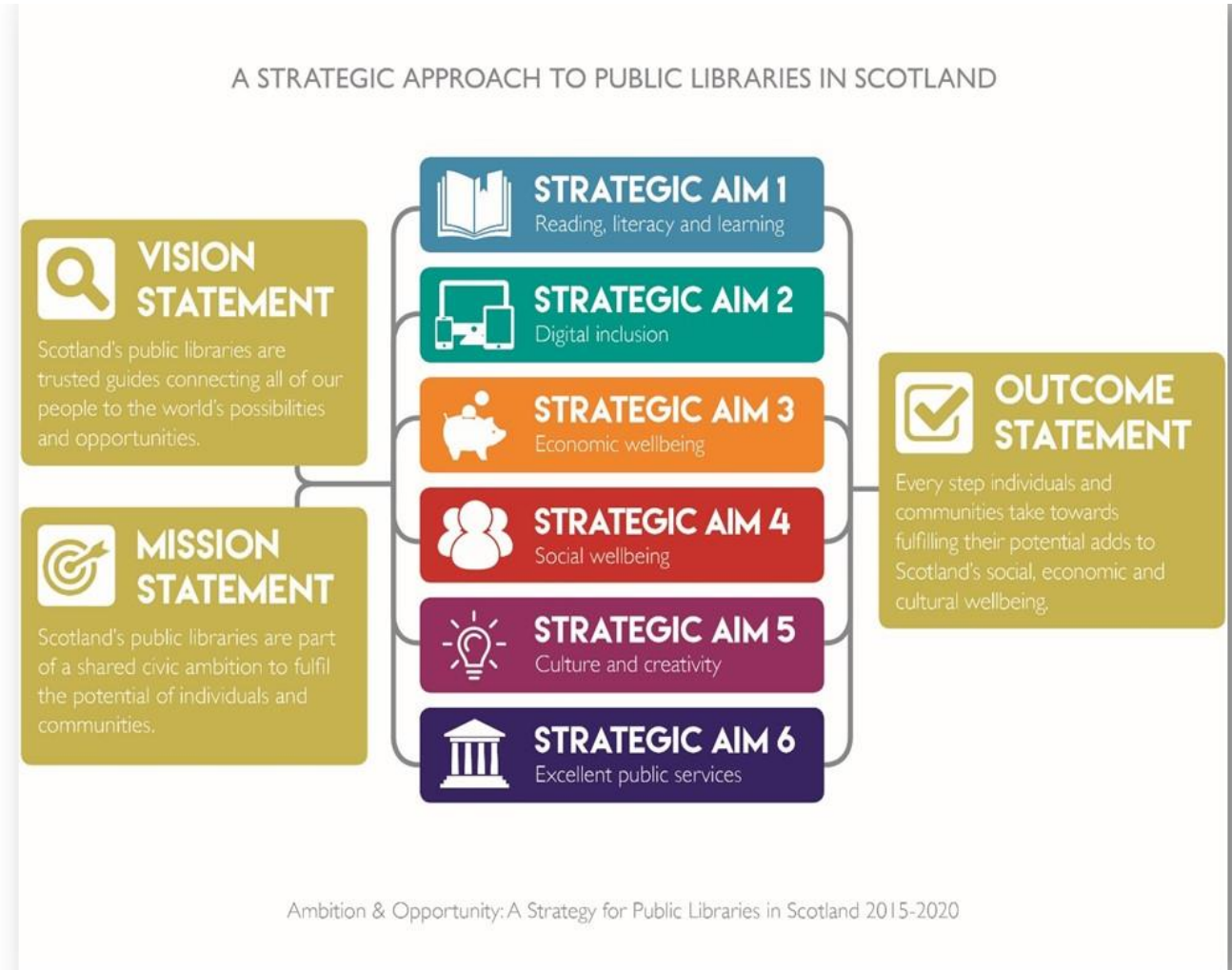


Outcomes

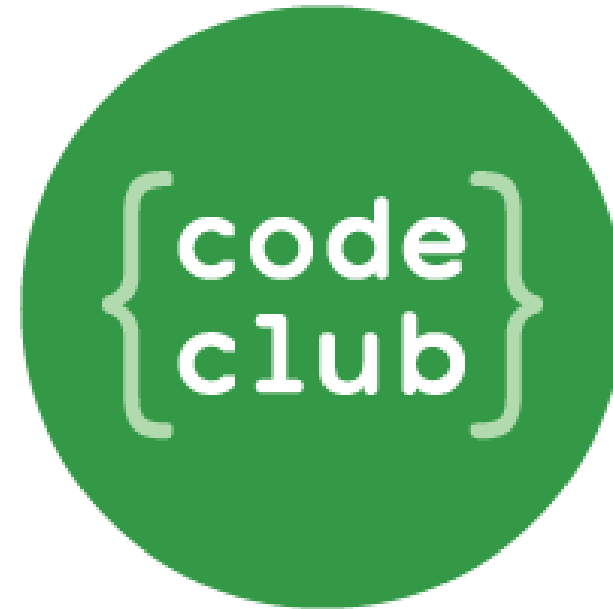
- Establish libraries as key providers of coding skills instruction for young people across Scotland.
- Enhance performance and increase confidence of public library staff in supporting digital skills development.
- Increased opportunities for young people to learn coding skills in a fun and engaging environment, within their own communities.
- Increased confidence and employability of young people participating in coding clubs.

Future Plans

- Ensure access to library services for all using new technology
- Develop and promote the core offer from public libraries in Scotland
- Mainstream activities to support STEM skills
- Develop and implement a learning and development programme for all library staff



Contact



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Lorna Gibson
scotland@codeclub.org.uk



CodeSpace CSI  ORACLE[®] ACADEMY

Samantha Blyth

Programme Manager Computing
Edinburgh College



Project Overview

- An Immersive Digital Forensic Crime Scene Investigation experience split across 4 Friday afternoons, aimed at school pupils aged 14+
- The first 3 afternoons is *Rookie Training*
- The final afternoon is '*Who done it*'



Project Overview

Rookie Training:

- Graphics manipulation and editing software
- Video Editing software
- Using SQL to harvest data from databases
- Linux Cmd line
- Basic programming



Project Overview

Double murder....or is it?

- Work as teams of 4 or 5 using the training skills to build and present a case against one of the suspects.
- Immersive environment with real box of evidence, digital evidence, police interview tapes, CCTV footage and witness statements.
- Facilitators to assist and release evidence at the right time.
- There is a correct answer but the experience is the same even if they build a case against someone else. Facilitators can pose questions to assist in narrowing down the suspects.



It is better to debate a
question without settling it
than to settle a question
without debating it...

Joseph Joubert

Project Overview

All the Goodness

The course covers many STEM related and core skills that the workplace is looking for:

- Team working
- Problem solving
- Research and analysis
- Communications
- Numeracy
- Digital media and computing skills
- Data handling
- Content creation.

What the Project Addresses

The Project aims to Address:

- The lack of confidence and knowledge about digital technology and computing amongst young people, specifically girls and from areas of less opportunity.
- It's targeted at youngsters in those categories who would not normally engage with computing because they feel they can't or they don't know.

What the Project Addresses

The project aims to address:

- The 'Game' and 'role play' element gives them confidence that this is just a good fun activity to do with their friends and everything you need will be given in the Rookie Training
- Work as a group adds confidence.
- The bite size nature makes it accessible.



What the Project Addresses

- It will give them an appreciation of the applications and the broad nature of their use.
- They will experience a college environment and teaching - which will hopefully help widen the colleges intake of these pupils in to computing subjects in the future.
- Each person completing the activity will be rewarded with a certificate as well as being offered a place at college on one of our courses, either a full time college course if they have finished school or a school partnership course if they are still at school.

Project Outcomes

- The age groups assisted in this pilot will be 14+
- This pilot project will have a bias towards girls hoping for a 60:40 split or better.
- We will target catchment areas of less opportunity or multiple deprivation.
- We will target pupils that have aspirations away from computing and STEM subjects
- Each cohort holds 20 pupils and this pilot runs two cohorts, 1 in Nov and 1 in Feb

Project Outcomes

- We will track students to see if they return to college on courses or other initiatives.
- Gain feedback from the project to make improvements
- Gain feedback to assesses if their pre conceptions have changed and if their confidence has increased.
- Package this project for re-use

Aspirations for the Project

- To package it for re-use
- To be distributable to other institutions
- To broaden out to other target groups that need to be more digitally confident and aware /skilled
- To make it accessible
- To look in to SQA accreditation



Q&A Panel



Stay in Touch!



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Thank You!

