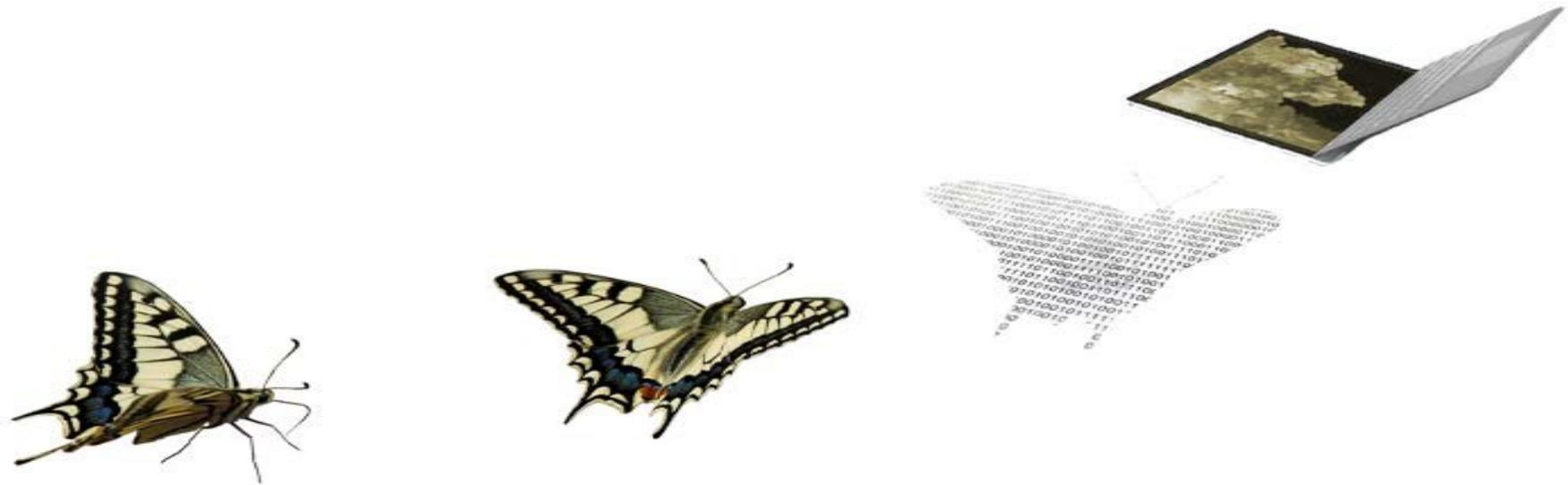# C-Change Digital Transformation

B&FC Digital Strategy 2020/21 update

'   **As a connected College passionate about the power of education, we put technology-enhanced, rich learning experiences which drive student success and contribute to economic growth at the heart of our digital strategy. From places to spaces and from people to information, we ensure that technology is easy to use, anytime, anywhere, on any device, always accessible, always secure.** '

Document Control

Revision Number	9
Date published	30/09/2020
To be reviewed by	September 2020
To be updated	Annually
Authors	Chief Information Officer, Director of Students, VP HE and Student Enhancement, Head of Digital Learning and LRC

Contents

Introduction - Digital Strategy in a Time of Crisis

The pace of digital change in the pre-virus world was already fast. Digital strategies were often mapped in one to three year phases. Now initiatives are scaled in a matter of days or weeks. The COVID 19 crisis provides a glimpse into a future world where digital interactions are central, forcing organisations and individuals further up the adoption curve almost overnight. This is an environment where digital channels become the primary (and in some cases, sole) customer engagement model. Automated processes become a primary driver of productivity and efficiencies. Agile ways of working are a prerequisite to meeting, seemingly daily changes in customer behavior. The way organisations learn and adjust to the public health crisis will deeply influence performance in a changed world.

It now seems opportune to reassess B&FC's digital initiatives, those that provide short term, and those that require consolidated gains. The crisis demanded boldness and swift action, the gains made from the launch of this strategy in 2019 placed B&FC in a position of strength so that we were well placed to meet new and unforeseen challenges with confidence and effective action. Now is the time, in a moment of crisis, to boldly advance the digital agenda. Artificial Intelligence, instructional design, machine learning and advanced automation are the bold headlines of this revised strategy.

The revised B&FC C-Change vision builds on our considerable successes to date and reiterates our enduring focus on excellence and the provision of an outstanding career-focussed educational experience, co-created with industry. C-Change in this context heralds a significant shift in our thinking – literally a sea-change – alongside an acknowledgement that in a world increasingly shaped by the cloud, and digital learning, we must ensure that we equip our students with the resources to navigate and flourish successfully in the world irrespective of global changes to work environments. Here are four ways in which the cloud will shape our lives over the next decade and beyond[1]:

- **Building Digital-First Infrastructure**: The Cloud will provide the digital infrastructure of tomorrow's cities, where an estimated 6 billion of the world's population will live by 2045. 'Smart elevators and parking lots, driverless cars and drone taxis, trains and subways, farms and power plants; all will be safer and better managed, thanks to the cloud's ability to store and analyse data. The

---

[1] Joy Tan for Forbes 2018. Cloud Computing Is Crucial To The Future Of Our Societies - Here's Why https://www.forbes.com/sites/joytan/2018/02/25/cloud-computing-is-the-foundation-of-tomorrows-intelligent- world/#7f65beea4073 Accessed August 2018.

cloud will also be transformative for companies, especially small and mid-sized businesses, as data analytics, artificial intelligence and other capabilities become available as services'.

- **Managing Data**: The cloud will also help society cope with growing volumes of data. This includes applications like high-definition video, which one company estimates will account for 89% of individual user traffic by 2025.
- **Artificial Intelligence:** The cloud will support emerging technologies such as artificial intelligence and help them to adapt to new platforms such as mobile.
- **Autonomous Vehicles:** The vision of driverless cars gliding down streets and highways is becoming a reality, albeit slowly. As with smartphones, vehicles come with sensors and cameras that generate significant amounts of data. Much of that data needs to be processed in real time, which will take place inside the vehicle itself. But many tasks, such as software updates and machine learning, will happen in the cloud.

PWC[2] (Price Waterhouse Cooper) comment that students have become customers who bring their own digital world expectations to their learning experience, and that these customers are more savvy, better connected and more vocal than ever. These students 'increasingly see universities and educational providers as the main means of securing their future employment rather than simply learning and self-development. The value proposition for universities, schools and colleges is changing faster than ever and this means that employability and the student experience is more critical than it has ever been. This rapidly evolving young audience takes on new tools and apps at a pace that even the most agile provider struggles to keep up with. JISC, and many research papers have noted that since the public health emergency in 2020, 'the game has changed. Permanently'.

In 2017 the Industrial Strategy[3] clearly acknowledged that the world is undergoing a technological revolution, where artificial intelligence (AI) will 'transform the way we live and work, from the way we diagnose and treat cancer to the security of online transactions', at a scale, speed and complexity that is unprecedented. It notes that the lines between the physical, digital and biological worlds will become ever more blurred, which will 'disrupt nearly every sector in every country, creating new opportunities and challenges for people, places and businesses.' As such it is identified as the first of the strategy's four 'Grand Challenges'.

---

[2] PWC The 2018 digital university: Staying relevant in the digital age. https://www.pwc.co.uk/assets/pdf/the-2018-digital-university-staying-relevant-in-the-digital-age.pdf Accessed August 2018.

[3] Industrial Strategy: Building a Britain fit for the future. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf

The government's Digital Strategy[4] echoes this Grand Challenge, and is formed of seven strands:

1. Building world-class digital infrastructure for the UK
2. Giving everyone access to the digital skills they need
3. Making the UK the best place to start and grow a digital business
4. Helping every British business become a digital business
5. Making the UK the safest place in the world to live and work online
6. Maintaining the UK government as a world leader in serving its citizens online
7. Unlocking the power of data in the UK economy and improving public confidence in its use

We recognise our fundamental role in helping to make these ambitions a reality and will support the development of the skills people need to participate in the digital economy and help businesses to harness the productivity benefits of digital skills and innovation. The speed and pace of change continues to accelerate and the need for remote working brings these seven strands into sharp focus.

What is a Digital Strategy?

Digital has become an over-used and misused term in this context, therefore it is important to make a distinction between digitisation and digitalisation as this strategy is about the digitalisation of B&FC:

- Digitisation is the process of moving something from the analogue world to the virtual world. For example, replacing book in a library with an e-book in a digital library.
- Digitalisation puts the customer at the heart of a digital transformation. Extending the example above, digitalisation of the virtual library would result in the software suggesting what books a student should read, automatically identify the most read and referenced sections of the book, provide an automated abstract of the book with links to the most important sections through the use of artificial intelligence and data analytics.

---

[4] Digital Strategy https://www.gov.uk/government/publications/uk-digital-strategy/executive-summary

A digital strategy therefore seeks to use technology to enhance the digital experience of the user of the service provided by adding value and additional features that the customer may not have realised they needed until it was made available to them. A digital strategy is not an IT strategy. An IT strategy helps deliver a digital strategy but its primary focus is efficiency, security and technical capability.

Developing our Approach

In constructing the C-Change digital strategy we had discussions with a number of key partners and stakeholders, and researched what our peers are doing so as to understand what a successful digital strategy looked like and how best to go about constructing one for B&FC. The following common elements were discovered. A Digital Strategy should:

- Put people and pedagogy at the heart of the strategy.
- Have a clear understanding of the stakeholders and how change can be communicated to them.
- Look at the college as a whole – digital transformation affects every part of the College
- Demonstrate a strong alignment from college goals to digital activities to outcomes.
- Provide a clear definition of what a Digital Strategy should deliver and the difference between it and an IT Strategy.
- Ensure that the infrastructural foundations are in place first.
- Ensure that all members of the college have equal access to the technology they need.

C-Change Digital Strategy

C-Change Vision Statement

'As a connected College passionate about the power of education, we put technology-enhanced, rich learning experiences which drive student success and contribute to economic growth at the heart of our digital strategy. From spaces to places, and from people to information, we ensure that technology is easy to use, anytime, anywhere, on any device, always accessible, always secure.'

Alignment to College Values and Strategic Objectives

We adopted a structured approach to understand the need for change, so that objectives which deliver the strategy are aligned with the needs, values and strategic objectives of the College rather than being purely aspirational or without foundation.

- *College Values*
  - Placing the student and/or customer at the heart of all we do
  - Showing fairness, courtesy and mutual respect
  - Learning, teaching and assessment as the key to our success
  - Empowering others to achieve their full potential
  - Working collaboratively to achieve excellence and growth

- *College Strategic Objectives*
  - To be in the upper decile for further and higher education for success, customer satisfaction, progression and destination
  - To work in partnership with employers, industries and organisations to drive economic growth which in turn generates
  - commercial revenue growth through the development of future focused skills
  - To work in partnership with employers, industries and organisations to drive economic growth which in turn generates commercial revenue growth through the development of future focused skills
  - To raise attainment, aspiration and progression for young people and adults to secure sustained employment opportunities
  - To provide an inspirational learning environment through ongoing investment in our staff, students and facilities
  - To maintain financial stability to support learning and future growth

| College Values and Strategic Objectives | WHY ? | C-Change Driver | WHAT ? | C-Change Goals | HOW & WHEN ? | C-Change Objectives |

C-Change Key Driver

The C-Change digital transformation is about more than just technology. Our key driver is that adopting new ways of working is absolutely essential in order to continue delivering outstanding, user-focused service in the face of changing technology, competition, audience needs and behaviours.

C-Change Goals

1. Short term:
   - Every student is a digital student
   - Every educator is a digital educator
   - Every core service and system is fully digital
   - Everyone is consistently and regularly updating their digital skills
   - Every decision considers all the available evidence (Business Intelligence)

2. Consolidated
   - Instructional design fully aligned to pedagogical best practice
   - Core use of AI in teaching, learning and assessment
   - Machine learning (ML) led data utilisation
   - Automation and self-serve interactions

C-Change Strategy Components

Spaces and Places:
- **Learning spaces and places that are flexible, engaging, future-focussed and reflective of the workplace**

People:
- **Students and employees who are competent, confident and passionate about the use of technology to support successful learning outcomes**

Efficiencies:
- **Processes which are standardised, streamlined and digitalised**

Learning & Teaching:
- **Students experience a rich and seamless digital experience, prior to application, throughout their studies and beyond. Effective, technology-enhanced pedagogy which supports Communication, Collaboration, Critical thinking and Creativity**

Technology:
- **Technology which is secure, modern, mobile, easy to learn and use, accessible to all and which provides increasingly intuitive and personalised services based on user needs**

Developmental Areas

To realise our digital vision, we have identified 7 developmental areas:
1. User-friendly technology through instructional design
2. Cloud first approach
3. Mobile-optimised and enhanced content wherever possible
4. Fast, reliable and easy to connect Wi-Fi
5. Digital accessibility
6. AI and ML-led work efficiency
7. Promotion of digital skills including employee IT literacy, entrepreneurship and innovation

The 7 developmental areas in detail:

1. *User-friendly technology through instructional design*

The efficacy of technology use for staff and students can only be enhanced through the deployment of easy to use technology that is intuitive and offers value-add, either through pedagogic improvements or workplace efficiency. In essence, this development area stresses technology where:

- End-user devices are easy to use and consistently and appropriately applied across the organisation
- Devices are configured to be easy to use and accessible

- Tutors can utilise the maximum possible range of applications available whilst maintaining the integrity and security of the network to deliver a differentiated, engaging and outcomes-based learning experience fully aligned to TLA strategy
- We use AR/VR to promote learner engagement and increase students' cultural capital
  We implement AI/ML technology to promote learner-centric work environments geared towards idiosyncratic, fully differentiated learning journeys and career guidance
- We utilise cutting-edge software to facilitate student-employer engagement through the use of employability-led digital portfolios aligned to marketplace demand
  Flexible learning opportunities are fully supported by all our technology and end user platforms

2. *Cloud first approach*

We recognise that computing is moving to the cloud and that being able to access files anytime and anywhere securely is key to 21st century teaching and working environments. Our use of Canvas, Microsoft OneNote and Teams, amongst other applications, is designed to leverage technology to deliver 24/7 learning that is activity based, engaging and differentiated and which facilitates and improves the ability to deliver formative feedback. Through the increasing use of cloud-based solutions we promote:

- An expanded array of learning experiences both inside and outside of traditional workspaces
- Remote working opportunities for tutors so lesson preparation can take place anywhere and anytime
- Remote learning opportunities for both students and employees that is accessible and easy to use
- Development of artificial intelligence and machine learning – bot development
- Power- BI driven interventions – use of live data to inform decision making

3. *Mobile-optimised and enhanced content wherever possible*

Contemporary students spend increasingly more time on their mobile devices through choice or as a result of public health restrictions. In order to maximise the learning opportunities for students we promote:

- Learning content that is mobile enabled
- Content that is delivered via mobile apps where appropriate

- Learning content that allows learners to fully engage and input via their mobile devices
- An inclusive approach

4. *Fast, reliable and easy to connect Wi-Fi*

Stable, fast and easy-to-access Wi-Fi is rapidly becoming considered as a right. We recognise that being able to access Wi-Fi on-campus is fundamental to the students' learning experience. We promote:

- Wi-Fi that is easy to access
- Wi-Fi client/credentials that only require refresh when necessary
- Connectivity that enables cloud-based computing

5. *Digital accessibility*

We are committed to equality of opportunity for all our students. Technology offers the opportunity to improve accessibility for our students. Our digital accessibility articulates that:

- Our college is for everybody
- Our content must be accessible by all
- Nobody is disadvantaged in their interactions with B&FC and we will actively remove barriers where reasonably possible
- We will utilise technologies, e.g. bots, that make learning more accessible to SEND learners

6. *AI and ML-led work efficiency*

We recognise the time-pressured nature of teaching, learning and assessment and are committed to using technology to improve work-place efficiencies. Greater efficiencies in the College result in more resources for core teaching and learning activities. AI and ML offer avenues to utilise cutting-edge technology to make working easier, quicker and more accurate. We promote:

- Use of technologies, such as AI chat bots, to reduce time taken to find information

- The development of predictive analytics
- Assessments that are completed and quality-checked digitally
- Data transfers that are automated so that data is only entered once
- Printing only when necessary and as the last resort
- Improved digital navigation (reduced number of clicks)
- Reduce sign-ins and inputting of username/passwords
- Minimising the number of systems users interact with
- Increasing integration between systems or reduction in the systems so integrations are not required
- Promotion of technologies such as Microsoft Teams that promote collaboration
- End user support to ensure fast, efficient and customer friendly response

7. *Promotion of digital skills including employee IT literacy, entrepreneurship and innovation*

The college strives to be at the forefront of delivering digital skills that facilitate employability, enhance academic achievement and promote creativity and innovation. By aligning our digital skills offers with the Government's own Essential Digital Skills Framework we promote digital skills that are:

- built around real-world requirements
- Increase employability by giving students additional digital skills and experiences
- Align with the needs of industry
- Able to facilitate tech start-ups
- Review project progress, risks, issues, changes and benefits
- Offer advice and propose additional projects and programmes of work as appropriate

Un-Tethered Tutor Concept

The concept of the un-tethered tutor is to provide the tutor with portable technology that can connect wirelessly to smart-boards allowing them to use the device anywhere in the classroom and to work effectively from any location.

The Surface Pro is the device of choice as it is a light computing device that uses touch and stylus to allow digital inking, works as a tablet and a laptop, is powerful enough and has a battery life that will support a full days teaching between charges. Phase 1 of the un-tethered tutor model is active within B&FC, where tutors above a specified fractional FTE have been equipped with a Surface Pro this provided the scaffolding to enable employees to fully meet the challenges of remote learning. Phase 2 of the untethered tutor is to broaden the scope of distribution.

Power Up – phase 1

From January 2020 B&FC launched an innovative online training package for front line teaching staff and non-academic support services. This training package was designed to equip employees with digital skills aligned to Microsoft skill sets (MIE). The training was differentiated so movement between levels was dependant on completion. This engaging training package utilised gamification techniques to ensure effective buy in.

Power Beyond – phase 2

On completion of phase 1 employees can progress to phase 2 which explores more advanced data analysis of VLE and online learning resources. This equates directly to our development areas where efficient, rich data analysis informs pedagogy and effective utilisation of enhanced teaching resources.

Governance

The portfolio of programmes and projects within C-Change is overseen by the Digital Strategy Steering Group made of members from key services and chaired by the Head of Digital and LRC. The remit of the Steering Group is to:
- Provide overall governance for the delivery of C-Change
- Ensure programme and project teams are consulting with staff, students and other key stakeholders
- Provide collective and unified direction for C-Change, ensuring that activities remain aligned with the overall aims and strategic direction of the College
- Champion digital transformation and raise awareness across the College
- Review project progress, risks, issues, changes and benefits
- Offer advice and propose additional projects and programmes of work as appropriate

Appendix

PESTLE Analysis

Political
The shift in the global economy, the impact of Covid 19, and emerging economies in particular showing strong economic growth, suggests a commensurate power shift bringing with it both threats and opportunities in the education sector. Closer to home, continuing shifts in public funding are likely, fuelling further potential uncertainty. Changing government policy in the education space may also have the potential to be both disruptive and constructive, with increased competition creating more challenging market conditions.

Economic
The economic impact of Covid 19 mixed with the uncertainty around Brexit and unknown trade deals, the economic climate remains fragile. The digital strategy seeks to address these economic challenges through the introduction of efficiencies in the utilisation of its resources be that buildings, equipment or people using technology to work smarter. Students' expectations around value for money are also likely to become more focussed going forward, potentially resulting in changing decision making patterns and increased risk-aversion. The digital strategy will add to the B&FC value proposition for students and employers.

Social
Linked to the value proposition, the economic, cultural and social necessity of being able to navigate through and engage in the digital world is becoming ever more prevalent, recent experiences since March 2020 drives home the positive social impact digital communications can have. Digital expectations are higher than ever before. Being left behind is not an option for B&FC, however we need to acknowledge that not all students are at the same point in their learning journey. Whilst the digital strategy is designed to support the concept of BYOD (Bring Your Own Device) it must also recognise the economic reality of some students and ensure that they are not disadvantaged. Social media and mobile phones are now a central part of many people's lives; the challenge for education providers is to reach students on the right platforms, as older people (parents) also adopt social media their children move quickly to new platforms, for example, migrating from Facebook to Instagram or Snapchat. New and emerging technologies such as smart mobile/wearable

devices and sensors, cloud-based IT and advanced analytics are also changing business and operating models across all sectors including education. The strategy will be responsive to these changes, ensuring that students are equipped with the necessary skills and devices where it is possible to provide support. Targeting the most at need as a priority.

Technological

A number of new technologies have emerged and are becoming more economical for education institutions. Faster and more accessible broadband connections to homes has resulted in a shift in how information is consumed from traditional broadcast to on-demand streaming. It has also allowed for the growth in cloud computing where software is hosted remotely from the consumer in data centres distributed around the globe run by the large technology giants such as Amazon, Microsoft and Google. The impact of this shift in how services are provided from on premise systems to in the cloud requires an adjustment in how we invest in technology, with a shift from servers and storage to network and communications.

Moore's law has continued to allow greater processing power to be available at lower cost resulting in the increased use and availability of Artificial Intelligence (AI)/machine learning (ML), augmented reality (AR), virtual reality (VR) and robotic process automation (RPA). Large technology companies are heavily investing in offerings in education (following the McDonalds Happy Meal idea of attracting customers at a young age who will be customers for life) with Microsoft finally taking on both Apple with its Surface devices and Google with its O365 suite and Teams for Classrooms.

Whilst technology offers a number of opportunities to traditional 'bricks and mortar' colleges it also represents a significant threat. Due to low cost to high scale ratio of technological disruption it is relatively easy for a new entrant to dominate a market, fully online learning providers exploiting the technologies above could have a significant negative impact on our ability to recruit students.

Legal

When considering opportunities to exploit the advances in technology such as artificial intelligence, big data/analytics, facial recognition, bio and geo-sensors, sentiment analysis etc. we must remain aware of our obligations regarding safeguarding and privacy.

Environmental

Technology providers are already aware of the technological impact of the increased utilisation of computing devices, Microsoft recently created the first submerged data centre using sea water to cool the computers rather than air conditioning. Other companies are building data centres in Iceland to take advantage of geo-thermal energy. For us, our focus should be on ensuring that resources are not wasted by providing devices that are not used or not used fully and ensuring that we maximise the lifetime of devices where appropriate to minimise the environmental impact of obsolete devices.

Digital SWOT Analysis (2018)

Strengths
- Initial employee survey results show
  - a high level of enthuiasm for technology
  - the majority feel supported in their learning
- Our infrastructure is largely ready to allow us to move forward with the deliverables, our network connections to the internet rarely exceed 20% of capacity.

Weaknesses
- Dis-jointed, old fashioned, core transactional systems (EBS, eFIN, Resourcelink.
- Core systems vendors are niche, small and do not have the scale to modernise their platforms to keep pace with technological advances.
- Longer serving employees feel unsupported and left behind.
- The biggest request from employees "to do more of" or "to continue doing", is training and the preference is in a traditional classroom environment, least preferred is online learning.
- The biggest request from employees regarding what to stop doing, is to stop changing, stop introducing new software (without training), stop introducing dis-connected systems.
- Capacity, capability and skills not avaliable to facilitate the digital strategy

SWOT

Opportunities
- Additional technical certifications (such as Microsoft certification and accreditation)
- Education establishments benefit from preferential pricing
- Software vendors are very keen to support educational institutions as they are the providers of future customers.
- Deeper partnerships with large employers and technology providers
- Use of existing resources to support CPD such as Lynda.com
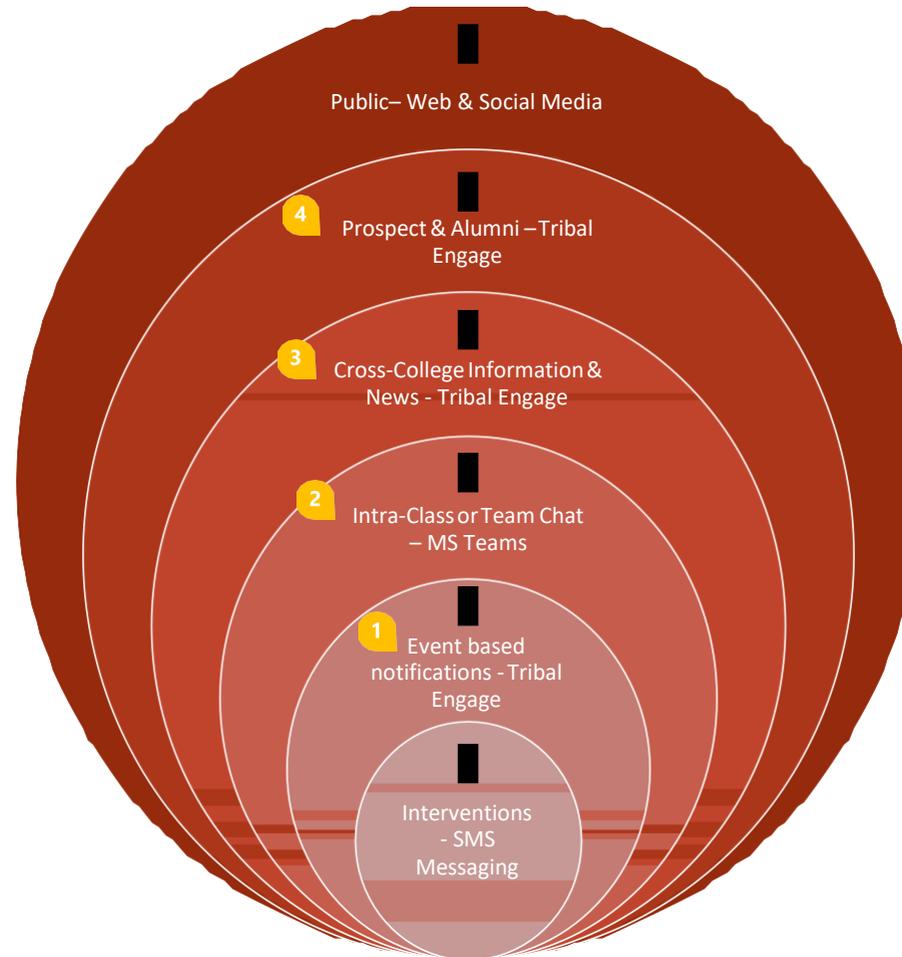- Lots of quick wins, hints and tips

Threats
- Greater competition
  - Traditional online providers
  - Technology companies (Microsoft/LinkedIn/Lynda)
  - Universities
  - New entrants to the market
  - Large employers offering their own provision
- Free courses and the **proliferation of open educational resources**

Student Engagement - Communications Vision

Communications to students, prospective students and alumni fully mobile app. supported.

1 Automated push notifications triggered by events such as non-attendance

2 Conversations about course work, student2student, student2tutor, class materials, research links, flip, assignments

3 Facebook like posts for news, links to resources, events, timetables. Non-class based messaging.

4 Specific channels for prospective students, engage, keep warm, meet class mates. Alumni keep in touch, marketing, sponsorships etc.

Public– Web & Social Media

4 Prospect & Alumni – Tribal Engage

3 Cross-College Information & News - Tribal Engage

2 Intra-Class or Team Chat – MS Teams

1 Event based notifications - Tribal Engage

Interventions - SMS Messaging

Student engagement takes a **mobile first** strategy which is enabled by the use of existing technology from Microsoft (Teams) to support intra-class/team collaborative work and the purchase and installation of the Tribal Engage mobile app. platform (replacing the MyDay App.). The expectation is that this will improve retention through greater cohort engagement before, during and after study. Tribal Engage subscription costs in the region of £8k, rising to £17k per year for other apps such as student support and student view. MyDay current cost £13k, so there would be a net cost difference of -£5k to +£4k per year. (However, this had been identified as a budget reduction item.)

21

Employee Engagement Communications Vision

1 Skype to-be integrated into Teams. Possibility of intergrated communications (all communications through the computer)

2 Outlook to be replaced by Exchange Online for a truly mobile experience.

3 Transition intra-team information out of SharePoint and the I:Drive a single collaborative environment

4 Migrate from SharePoint to SharePoint online for improved look and feel and integration with the other Office 365 platforms such as Email and Teams.

Focus on Portals, Links, News and Cross College communications and initiatives:

- Manager Portal – Things all managers need to know
- Employee Portal – Things all employees need to know
- Curriculum Portal – Things all teaching staff need to know

4 Persistent Cross-College Information & News : Microsoft SharePoint

3 Intra-Team & Project Collaboration : Microsoft Teams

2 One-to-Many Communications : Microsoft Outlook

1 Chat/Conversations : Microsoft Skype Instant Messages, Skype or Voice Call, Skype Video Conference

22