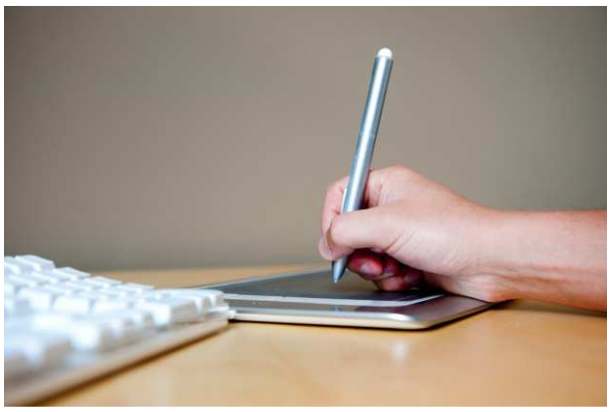
States of Jersey
States Assembly

États de Jersey
Assemblée des États

Economic Affairs Scrutiny Sub-Panel



Digital Skills

Presented to the States on 18th August 2014

S.R.9/2014

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1. PANEL MEMBERSHIP AND TERMS OF REFERENCE

1.1 The Digital Skills Sub-Panel is comprised of the following members:

Connétable Steve Pallett of St Brelade, Chairman

Connétable Juliette Gallichan of St Mary

Connétable Deidre Mezbourian of St Lawrence

Deputy Jeremy Maçon

1.2 The following Terms of Reference were established for the Review:

1. To examine whether the approach to improving digital skills in the Island contained within the Digital Jersey Strategy and Business Plan, to enable delivery of its key objectives and related targets, is supported by stakeholders.

2. To examine whether the approach to improving digital skills in schools contained within the Vision for IT in Education, is supported by stakeholders.

3. To examine whether the Vision for IT in Education and the Digital Jersey Strategy and Business Plan are complementary.

4. To compare the Vision for IT in Education to related strategies developed in other relevant jurisdictions.

5. To identify the framework for the implementation of the Vision for IT in Education in schools, with particular attention on the process and criteria for the development of individual school strategies.

6. With particular regard to Digital Jersey's e-government objectives and targets, to examine the existing and proposed provision for adult training and education to improve digital skills in Jersey.

2. CHAIRMAN'S INTRODUCTION

2.1 Following publication firstly of the Digital Jersey strategy 'Developing a Digital Jersey' followed closely by Education, Sport and Culture's Vision for IT titled 'Thinking Differently, both the Economic Affairs and Education and Home Affairs Scrutiny Panels considered that a review of each document was necessary and that due to the clear connection between the aims of each, that a Sub-Panel be formed to initiate a review of both. As a member of both Scrutiny Panels at that time, I was asked by each Chairman if I would Chair this Sub-Panel and I was happy to accept.

2.2 The Sub-Panel made up of myself, Connétable of St Mary Juliette Gallichan, Connétable of St Lawrence Deirdre Mezbourian and St Saviour Deputy Jeremy Macon soon agreed Terms of Reference to include examining whether the approach taken by both the Education, Sport and Culture Department and Digital Jersey in developing digital skills in the island was supported by stakeholders and more importantly complemented each other.

2.3 The digital sector within the island is seen by many as an opportunity to diversify the local economy and hopefully provide jobs for locally skilled men and women. To limit the numbers required to support this growing sector through inward migration, the Sub-Panel needed to investigate whether both the 'Developing a Digital Jersey' strategy and the 'Thinking Differently' vision were heading in a similar direction, hopefully converging at some time in the future in relation to job targets and the aims of e-government.

2.4 The Sub-Panel recognises the opportunities that both documents provide for the improvement of digital skills to support both the existing and emerging sectors of our economy. It is an exciting time for Digital Jersey with the recent opening of the Digital Hub which is, as you read this, a hive of activity and innovation. For Education, Sport and Culture the new Vision for IT offers both teachers and students an opportunity to learn in fresh and innovative ways through the use of new technology and the internet.

2.5 It was a disappointment to the Sub-Panel that this report was not completed earlier but rather than concentrate on any negatives, we have been impressed with how enthusiastic all schools have been in preparing business plans and preparing to implement change. It would be true to say that the Sub-Panel considers this more of an interim review on the planning and development of the new Vision for IT and early stage implementation of the Digital Jersey strategy, laying down a marker for a future review. The Sub-Panel would recommend that a future Education and Home Affairs Scrutiny Panel considers a further review on the

implementation and delivery of the 'Thinking Differently' vision and follows up on the recommendations contained within this report. The same should also be said of the Economic Affairs Panel in regards to Digital Jersey's aims and objectives moving forward.

2.6 Although the Sub-Panel is of a view that both Education, Sport and Culture and Digital Jersey are taking positive steps forward, and that can only be to the benefit of not only those studying at our excellent schools but also in further education and beyond, there is more to be done if we are not to miss the 'digital boat' and end up a follower in the digital market rather than a leader.

2.7 We hope that members will read this report and share our views on progress to date. I am indebted to my fellow Sub-Panel members for their hard work and effort during this review and especially thank our Scrutiny Officer for their support, diligence and positive attitude at all stages of this review.

Connétable S.W. Pallett

Chairman, Digital Skills Sub-panel

3. EXECUTIVE SUMMARY

3.1 The Digital Skills Sub-Panel has undertaken an interim Review of the Education, Sport and Culture's (ESC) 'Vision for IT in Education' (2013-15) and Digital Jersey's 'Developing a Digital Jersey Strategy', launched within a matter of weeks of each other towards the end of 2013. It is proposed that a follow up Review would be merited to fully assess the impacts of their implementation, and in the case of the ESC recommendations made might inform and/or consider work on the development of a subsequent 2016+ ESC IT Strategy.

3.2 Both documents have been seen by stakeholders as representing steps in a positive direction. Stakeholders have predominantly reacted positively to Digital Jersey's 'Developing a Digital Jersey' Strategy although particular concerns were raised regarding highly ambitious job creation targets. The Sub-Panel has observed that, despite some set-backs, Digital Jersey is an increasingly active organisation, now responsible for a wide-range of initiatives and engagement throughout the digital and social communities. The successful launch and subsequent opportunities provided by the Digital Hub are of particular note.

3.3 Reaction to the Education, Sport and Culture 'Vision for IT in Education 2013-15' has also been broadly supportive, although there has been some criticism that this Vision should have been produced sooner. It is noted that the 'Vision for IT in Education' is subject to a short timeframe, 2013-2015, but contains long term objectives. The next Minister for Education, Sport and Culture will need to prioritise the development of a long term strategy to complement and underpin the long-term objectives of the 'Vision for IT'.

3.4 Unlike previously implemented Education IT Strategies, the 'Vision for IT in Education 2013-15' is not predominantly about hardware and software, but about changing the nature of teaching, changing the role of teachers and changing the relationship between the teacher, the learner and the learning. Creditably, teacher training features prominently in the thinking and plans of Education, Sport and Culture, although it is not yet apparent that there has been significant delivery of training despite the upcoming delivery phase of the 'Vision for IT' from Sept 2015. It must be ensured that teachers are provided with ongoing training support, and that training and the standards of teaching using IT are subject to ongoing monitoring.

3.5 Requiring individual schools to develop their own IT Business Plans has been a significant change from previous 'top-down' culture in the Education, Sport and Culture Department. Whilst recognising the advantages this presents to schools to tailor to their needs, this has been a significant challenge, even more so for some schools than others. Initial concerns have been identified about this approach, including how it might affect consistency and the need for

appropriate support to be provided by ESC to schools. Stakeholders are unanimous that a digital divide amongst schools and pupils must not be allowed to grow. If consistency is not managed as effectively as planned by Education, Sport and Culture then the current 'Vision for IT in Education' might inadvertently exacerbate this problem.

3.6 To encourage consistency, all school IT business plans must be approved by ESC to secure funding, with assessment criteria and guidelines having being shared with all schools from the beginning of the business plan process. Some schools have worked in clusters to develop their business plans. The Sub-Panel recognises that this has significant advantages, and has recommended that all schools should be required by Education, Sport and Culture to work in appropriate clusters. Education, Sport and Culture must work continuously to provide consistency across the Island schools to ensure that the acquisition of digital skills is not a post code lottery.

3.7 Despite initial differences of opinion Education, Sport and Culture and Digital Jersey are now in agreement that students exiting school at 16 should have a range of skills. This should be a combination of specific curriculum based knowledge (new IT curriculum beginning in September 2014) and more generalised skills including teamwork, problem solving and communication. Both are recommended to work in partnership to ensure the provision of appropriate higher education courses and learning opportunities tailored to the digital sector.

3.8 States policy requires a 1:4 ratio of inward migration v's local appointments in the sector, and it is widely accepted that some specialised inward migration will be required to stimulate and support the growth of a thriving digital sector in Jersey. However, there are concerns that the timelines of the Digital Jersey strategy and Education, Sport and Culture's Vision do not appear to converge as would be necessary to meet Digital Jersey's short and medium term goals regarding local jobs. Steps have been taken to try to bridge the short-medium term gaps in skills development between the industry strategy and Education Vision. This has involved some collaborative initiatives between Education, Sport and Culture and Digital Jersey and significant industry based projects, such as those seen at the Digital Hub. Nevertheless, concerns remain that there might still be pressure with regard to inward migration in this sector and it is imperative that where inward migration occurs, it should be specialised in nature.

3.9 The Review has also examined digital skills in relation to the States of Jersey e-government programme. Presently only 7.5 per cent of interactions between Islanders and government only carried out in a digital form electronically. The States aim to increase digital interactions with Islanders to nearer 75% by 2018.

3.10 £7million is available under current funding for delivery of Phase 1 of the e-government programme, including the establishment of a full service e-government platform by the end of 2016. Phase 1 links existing core systems through an 'enterprise service bus', allowing them to talk to each other. This establishes a single citizen portal whereby citizens will be able to digitally interact with the States. There is an ongoing longer term funding requirement for the second phase of e-government between 2016 and 2019 which will be subject to inclusion of a bid from the second phase of Medium Term Financial Plan.

3.11 There is confidence amongst the stakeholders that the target of increasing online/digital interactions with Islanders from 7.5% to near 75% by 2018 is very realistic and should be achieved in the relatively short to medium term. To help the 25% not accounted for by the States e-government interaction target of 75% and to avoid creation of a community digital divide, the need for digital skill development initiatives and plans is recognised. It will be essential to train and prepare the population to use the e-government platform effectively, both in terms of skills and connectivity.

3.12 Digital Jersey has a particular responsibility through its social objectives to address digital divide concerns for the whole community, not least the '25%' group. Digital Jersey has accepted that its business plan and strategy does not have adequate depth around general skills development in the overall population and is working to address this situation.

3.13 The States also have a responsibility towards the '25%' group and aim to undertake associated education and infrastructure provision through libraries, Highlands College and the Parishes. The States will also continue to offer traditional platforms for service delivery. The involvement of the Parishes will be critical in achieving some of the targets regarding e-government, particularly for vulnerable sections of society. There is a need to ensure that the States and Parishes work in unison and with sufficient resources to achieve provision of the required community support for e-government, so that it can be successfully implemented without creating a digital divide.

4. FINDINGS

Please note: Each key finding is accompanied by a reference to that part of the report where further explanation may be found.

4.1 **Finding 1:**

The Sub-Panel was concerned by the relatively low volume of submissions received directly from the digital industry, but acknowledges that it is itself relatively small in scale at present and is well represented by Digital Jersey. (7.2.13)

4.2 **Finding 2**:

Stakeholders have predominantly reacted positively to Digital Jersey's 'Developing a Digital Jersey' Strategy although particular concerns were raised regarding highly ambitious job creation targets. (7.2.13)

4.3 **Finding 3**:

Despite some set-backs, Digital Jersey is an increasingly active organisation, now responsible for a wide-range of initiatives and engagement throughout the digital and social communities. The successful launch and subsequent opportunities provided by the Digital Hub are of particular note. (7.2.13)

4.4 **Finding 4**:

The 'Vision for IT in Education' is subject to a short timeframe, 2013-2015, but contains long term objectives. (7.3.1.2)

4.5 **Finding 5**:

Work on a new IT Strategy for schools began considerably before September 2012, but the final 'Vision for IT' was not launched until October 2013. (7.3.2.3)

4.6 **Finding 6**:

Reaction to the Education, Sport and Culture 'Vision for IT in Education 2013-15' has been broadly supportive, although there has been some criticism that this Vision should have been produced sooner. (7.3.2.3)

4.7 **Finding 7**:

The significant opportunity presented by fibre connections to initiate change in the way IT is taught and used in all schools is recognised. However, such a change is not so dependent on fibre that an earlier IT strategy could not have been developed and implemented. (7.3.2.3)

4.8 **Finding 8**:

Unlike previously implemented Education IT Strategies, the 'Vision for IT in Education 2013-15' is not predominantly about hardware and software, but about changing the nature of teaching, changing the role of teachers and changing the relationship between the teacher, the learner and the learning. (7.3.2.3)

4.9 **Finding 9**:

Development of all individual school business plans was originally due to be completed by January 2014, subsequently extended to March, with implementation beginning from the start of the year. It is concerning that in June 2014, Education, Sport and Culture still had ten schools requiring minor amendments to plans and six schools identified as needing more help. (7.3.3.6)

4.10 **Finding 10**:

Requiring individual schools to develop their IT Business Plans represents a significant change from previous 'top-down' culture in the Education, Sport and Culture Department. Whilst recognising the advantages this presents to schools to tailor to their needs, this has been a significant challenge, even more so for some schools than others. (7.3.3.6)

4.11 **Finding 11**:

The first phase of funding (£1.5million) for the implementation of school IT Business Plans will be made available to schools for the start of the school year in September 2014. However, whilst this money is available, funding for the second phase will need to be secured through the next Medium Term Financial Plan. (7.3.3.6)

4.12 **Finding 12**:

The Panel has been disappointed during parts of this Review with avoidable delays on the part of the Minister for Education, Sport and Culture in ensuring his Department's adequate and timely engagement with the Scrutiny process. This has significantly impacted our ability to complete the Review within the intended timeframe. (7.3.4.3)

4.13 **Finding 13**:

With all schools being different, not all are expected by ESC to complete and implement their IT Business Plans at the same speed. ESC is actively targeting more support at the schools that are less confident or equipped to develop such a process. (7.3.4.9)

4.14 **Finding 14**:

Some schools have worked in clusters to develop their business plans. This involves a secondary school grouping together with feeder primary schools to minimise inconsistencies in the digital skills levels amongst the feeder schools themselves, and between a Secondary school and its feeder Primaries. (7.3.4.9)

4.15 **Finding 15**:

Whilst there are notable potential advantages, initial concerns have been identified about ESC's approach of requiring schools to develop their own IT business plan, including how this might affect consistency and the need for appropriate support to be provided by ESC to schools. (7.3.4.13)

4.16 **Finding 16**:

To encourage consistency, all school IT business plans must be approved by Education, Sport and Culture to secure funding, with assessment criteria and guidelines having being shared with all schools from the beginning of the business plan process. (7.3.4.13)

4.17 **Finding 17**:

It is too early to judge either way whether Education, Sport and Culture's approach of requiring schools to develop their own IT Business Plans, rather than top-down, has been successful. (7.3.4.13)

4.18 **Finding 18**:

Stakeholders are unanimous that a digital divide amongst schools and pupils must not be allowed to grow. If consistency is not managed as effectively as planned by Education, Sport and Culture, then the current Vision for IT in Education might inadvertently exacerbate this problem. (7.3.4.19)

4.19 **Finding 19**:

There is currently no social premium within Education, Sport and Culture's IT funding model to try to assist those schools and pupils facing the biggest challenges regarding IT. (7.3.4.19)

4.20 **Finding 20**:

Education, Sport and Culture's approach to e-safety has changed. Previously top-down, schools now have the option to develop an individually tailored policy if they so choose, within Education, Sport and Culture guidelines. (7.3.4.22)

4.21 **Finding 21**:

Despite changes to the model of establishing e-safety policies in schools, pupil safety must always remain the absolute priority. (7.3.4.22)

4.22 **Finding 22**:

Education, Sport and Culture has in post an e-Learning and e-Safety co-ordinator to provide schools with relevant information and training, to establish appropriate individual polices and to oversee consistency. (7.3.4.22)

4.23 **Finding 23**:

The challenge of changing the teaching culture, methods and environment within schools to achieve the aims and objectives of the 'Vision for IT' is widely acknowledged and not underestimated. (7.3.4.29)

4.24 **Finding 24**:

Teacher training features prominently in the thinking and plans of Education, Sport and Culture and identification of each school's need is a core requirement of the IT Business Plans. (7.3.4.29)

4.25 **Finding 25**:

It is not yet apparent that there has been significant delivery of teacher training despite the upcoming implementation of the 'Vision for IT' from Sept 2015. (7.3.4.29)

4.26 **Finding 26**:

All pupils have an entitlement to appropriate standards of teaching. This will be monitored by Education, Sport and Culture with regard to teachers' use of technology. (7.3.4.29)

4.27 **Finding 27**:

Education, Sport and Culture will in part use the Professional Partnering Programme to help monitor implementation of the Vision for IT and maintain appropriate standards in the use by teachers of technology to effectively enhance learning. (7.3.4.29)

4.28 **Finding 28**:

There were previous differences of opinion between Education, Sport and Culture and Digital Jersey about the appropriate level of focus on developing suitably skilled school leavers to help meet industry requirements. (7.3.5.9)

4.29 **Finding 29**:

Education, Sport and Culture and Digital Jersey are now in agreement that students exiting school at 16 should have a range of skills. This should be a combination of specific curriculum based knowledge and more generalised skills including teamwork, problem solving and communication. (7.3.5.9)

4.30 **Finding 30**:

Digital Jersey has commented positively on the direction of travel established in the development of digital skills for school pupils by the Vision for IT in Education. (7.3.5.9)

4.31 **Finding 31**:

IT skills in schools will be developed in two distinguishable ways via the 'Vision for IT'. Firstly, general digital skills of all pupils should be improved through the change in teaching culture and methodology, and secondly, and more directly, by the introduction of a new IT curriculum from September 2014. (7.3.5.9)

4.32 **Finding 32**:

Despite some courses at Highlands College, the formal provision of professional digital skills education post 16 is limited. It appears that the digital industry has recognised a need to bridge this gap through its own initiatives. (7.3.5.9)

4.33 **Finding 33**:

It is widely accepted that some specialised inward migration will be required to stimulate and support the growth of a thriving digital sector in Jersey. (7.3.5.20)

4.34 **Finding 34**:

States policy requires a 1:4 ratio of inward migration v's local appointments in the sector. (7.3.5.20)

4.35 **Finding 35:**

Local employment opportunities in the emerging digital sector are more than just skilled IT positions, and include more general business support roles. (7.3.5.20)

4.36 **Finding 36**:

There are concerns that the timelines of the Digital Jersey strategy and Education, Sport and Culture Vision do not appear to converge as would be necessary to meet Digital Jersey's short and medium term goals regarding local jobs. (7.3.5.20)

4.37 **Finding 37**:

The new IT curriculum begins from September 2014. It will be a number of years before the first pupils will leave school with the benefit of its full cycle. (7.3.5.20)

4.38 **Finding 38**:

Steps have been taken to try to bridge the short-medium term gaps in skills development between Digital Jersey's strategy and Education's Vision for IT. This has involved some collaborative initiatives between Education, Sport and Culture and Digital Jersey and significant industry based projects, such as those seen at the Digital Hub. (7.3.5.20)

4.39 **Finding 39**:

Jersey is not alone in recognising the opportunities presented by continually evolving technology, and the need to develop appropriate skills to seize them. Malta and Estonia are often cited as particularly clear examples and are demonstrably more advanced than Jersey in delivering associated strategies. (7.3.6.3)

4.40 **Finding 40**:

Presently only 7.5 per cent of interactions between Islanders and government are carried out in a digital form, electronically. The States aim to increase digital interactions with Islanders to nearer 75% by 2018. (8.2.5)

4.41 **Finding 41**:

£7million is available under current funding for delivery of Phase 1 of the e-government programme, including the establishment of a full service e-government platform by the end of 2016. (8.2.5)

4.42 **Finding 42**:

Phase 1 of the e-government programme links existing core systems through an 'enterprise service bus', allowing them to talk to each other. This establishes a single citizen portal whereby citizens will be able to digitally interact with the States. (8.2.5)

4.43 **Finding 43**:

'Tell Us Once' is a core objective of e-government and will require Phase 1 to deliver the necessary capacity for States IT systems to effectively and appropriately talk to each other. (8.2.5)

4.44 **Finding 44**:

There is an ongoing longer term funding requirement for the second phase of e-government between 2016 and 2019 which will be subject to a successful bid from the next Medium Term Financial Plan. (8.2.5)

4.45 **Finding 45**:

There is confidence amongst the stakeholders that the target of increasing online/digital interactions with Islanders from 7.5% to near 75% by 2018 is very realistic and should be achieved in the relatively short to medium term. (8.3.3.13)

4.46 **Finding 46**:

To help the 25% not accounted for by the States e-government interaction target of 75%, the need for digital skill development initiatives and plans is recognised. (8.3.3.13)

4.47 **Finding 47**:

To avoid creation of a community digital divide it will be essential to train and prepare the population to use the e-government platform effectively, both in terms of skills and connectivity. (8.3.3.13)

4.48 **Finding 48**:

Digital Jersey has a particular responsibility through its social objectives to address digital divide concerns for the whole community, not least the '25%' group. (8.3.3.13)

4.49 **Finding 49**:

Digital Jersey has accepted that its business plan and strategy does not have adequate depth around general skills development in the overall population and is working to address this situation. (8.3.3.13)

4.50 **Finding 50**:

The States also have a responsibility towards the '25%' group and aim to undertake associated education and infrastructure provision through libraries, Highlands College and the Parishes. The States will also continue to offer traditional platforms for service delivery. (8.3.3.13)

4.51 **Finding 51**:

The involvement of the Parishes will be critical in achieving some of the targets regarding e-government, particularly for vulnerable sections of society. (8.3.3.13)

4.52 **Finding 52**:

Failure to improve the digital skills of the 25% might exacerbate digital divide and may further disadvantage already vulnerable groups in turn undermining major objectives, such as the growth of e-health. (8.3.3.13)

4.53 **Finding 53**:

In the short term, most e-government services will be provided online and require insubstantial connectivity to enable basic web browsing. (8.3.4.5)

4.54 **Finding 54**:

More advanced e-health type applications will require higher levels of connectivity, which should be assisted by infrastructure initiatives such as Gigabit Jersey. (8.3.4.5)

4.55 **Finding 55:**

In implementing its Gigabit Jersey programme, JT has installed its fibre network to all schools in readiness for Education, Sport and Culture's tender process to provide a new IT network for schools and to over 10,000 homes. (8.3.4.5)

5. RECOMMENDATIONS

Please note: Each key finding is accompanied by a reference to that part of the report where further explanation may be found.

5.1 **Recommendation 1:**

The Minister for Education, Sport and Culture must ensure momentum is maintained in the implementation of the 'Vision for IT in Education' to avoid the significant potential consequences of '*if you miss it by a month you have missed it by a year*' regarding the academic year. (7.2.13)

5.2 **Recommendation 2**:

The Minister for Economic Development must ensure that appropriate gathering of statistical information and key performance indicators are undertaken in relation to, and by, Digital Jersey, to inform progress against objectives on an ongoing basis. (7.2.13)

5.3 **Recommendation 3**:

The next Minister for Education, Sport and Culture will need to prioritise the development of a long term strategy to complement and underpin the long-term objectives of the 'Vision for IT'. (7.3.1.2)

5.4 **Recommendation 4**:

The Minister for Education, Sport and Culture must ensure that appropriate gathering of statistical information and key performance indicators are undertaken in relation to the Vision for IT in Education to inform progress against objectives. (7.3.2.3)

5.5 **Recommendation 5**:

It is imperative that the Minister for Education, Sport and Culture secures the required funding in the next Medium Term Financial Plan to keep momentum behind the planned pedagogical changes and associated digital skills development. (7.3.3.6)

5.6 **Recommendation 6**:

The Chief Minister should ensure that Ministers fully comply with the Code of Practice for Scrutiny Panels and the Public Accounts Committee, paying particular attention to the need to provide timely and adequate information to Panels. (7.3.4.3)

5.7 **Recommendation 7**:

The Minister for ESC must ensure that appropriate support to schools continues to be provided throughout the delivery phase of the 'Vision for IT', and beyond, in order to help achieve its long term ambitions. (7.3.4.9)

5.8 **Recommendation 8**:

All schools should be required by ESC to work in appropriate clusters. (7.3.4.9)

5.9 **Recommendation 9**:

ESC should facilitate scheduled meetings of all Head Teachers (Primary and Secondary) to share best practice in IT. The same should occur for all Heads of IT, either at the same scheduled meetings as Head Teachers or separately. (7.3.4.9)

5.10 **Recommendation 10**:

Education, Sport and Culture must work to provide consistency across the Island schools to ensure that the acquisition of digital skills is not a post code lottery. (7.3.4.9)

5.11 **Recommendation 11**:

An examination should be undertaken by the Minister for Education, Sport and Culture about the merits or otherwise of introducing a social premium to the funding of the IT strategy for education from 2016. (7.3.4.19)

5.12 **Recommendation 12**:

School e-safety policy should also educate and equip students to be safer users of the internet outside of school. (7.3.4.22)

5.13 **Recommendation 13**:

It must be ensured that teachers are provided with ongoing training support, and that training and standards of teaching using IT are subject to ongoing monitoring. (7.3.4.29)

5.14 **Recommendation 14**:

A structured, comprehensive programme of identified teacher training requirements should be developed and be ready to implement by Education, Sport and Culture from the start of term in September 2014. (7.3.4.29)

5.15 **Recommendation 15**:

Education, Sport and Culture will need to ensure that new expectations regarding the use of technology to effectively enhance learning are fully communicated to the Professional Partners. (7.3.4.29)

5.16 **Recommendation 16**:

Through assessment of appropriate statistical monitoring and working in partnership with the digital industry, Education, Sport and Culture should be flexible provide appropriate higher education courses and learning opportunities tailored to the digital sector. (7.3.5.9)

5.17 **Recommendation 17**:

Through assessment of appropriate statistical monitoring and dialogue, the Ministers for Education, Sport and Culture and Economic Development must work together to help support the growth of the digital sector and achieve associated local employment opportunities. (7.3.5.20)

5.18 **Recommendation 18**:

Where inward migration occurs, it should be specialised in nature. (7.3.5.20)

5.19 **Recommendation 19**:

The Minister for Economic Development must continue to be highly attentive of the work of other jurisdictions pursuing digital initiatives (economic and social), in order to help inform and shape how Jersey can become a recognised world presence as a digital economy and society. (7.3.6.3)

5.20 **Recommendation 20**:

To help the success of the highly important ‘Tell Us Once’ principle, individual departmental IT systems and strategies should be subject to validation by a central co-ordinator to ensure compatibility. (8.2.5)

5.21 **Recommendation 21**:

It is imperative that the Minister for Economic Development secures the required funding in the next Medium Term Financial Plan to keep momentum behind the e-government programme. (8.2.5)

5.22 **Recommendation 22**:

The Minister for Economic Development should ensure that Digital Jersey adds adequate depth around general skills development in the overall population, including the more vulnerable groups, to its business plan and strategy. (8.3.3.13)

5.23 **Recommendation 23**:

There is a need to ensure that the States and Parishes work in unison and with sufficient resources to achieve provision of the required community support for e-government, so that it can be successfully implemented without creating a digital divide. (8.3.3.13)

5.24 **Recommendation 24**:

If not achieved already, the Minister for ESC will need to provide necessary impetus and resources to make sure that all schools connect to the fibre network now available to them at the earliest possible opportunity. (8.3.4.5)

6. INTRODUCTION

6.1 In September 2012, the Jersey Institute of Directors (IOD) held a debate titled 'The BIG Idea: Could Digital Jersey be the catalyst for a new pillar to our economy'? It focused attention on the growing fears that Jersey might not be grasping the economic and social opportunities presented by the expansion in technological capabilities, with jurisdictions such as Malta, Singapore and Estonia leaving Jersey behind. It encouraged increased political commitment to prepare students to embrace digital technology, and highlighted the importance of a well-trained and creative IT workforce to the success of a digital economy in Jersey.

6.2 The IOD debate coincided with the publication of an interim report on the Island's digital skills by Skills Jersey and Digital Jersey. The report found that there was 'general recognition that the current school curriculum is not developing the full range of skills required by the Digital sector'. 'Most secondary schools in Jersey … focus on the use of standard software rather than programming or understanding how computers and IT systems work. Few students in Jersey study computing in sixth form or further education.' [1]

6.3 The report made a number of recommendations including the need to adopt a new curriculum for ICT and computing in Key Stages 0 – 3, build on existing work of IT companies supporting the development of IT skills in schools and the implementation of a new Education, Sport and Culture (ESC) Information and Community Technology (ICT) strategy with the flexibility to cope with likely developments over the forthcoming years.

6.4 ESC informed the Education and Home Affairs Scrutiny Panel in September 2012 that work would commence on developing a new ICT strategy once three year funding had been confirmed in the Medium Term Financial Plan (MTFP). ESC anticipated that a draft strategy would be ready for consultation in Spring 2013. ESC acknowledged that key challenges would include developing the computer skills of teachers across the board, involving businesses with curriculum review, work placements and apprenticeship schemes and learning from best practice from other jurisdictions.

6.5 In November 2012, a growth bid of £3million for development of the IT Skills Strategy was duly approved, with an overall envelope of £6million for the proposed 3 year framework. However, a number of other key developments make this issue more than just a school/curriculum matter. The need to align the education and economic opportunities presented through digital technology for the benefit of students, the fledgling digital sector, businesses more broadly and indeed the community in general is widely recognised. This can, for example, be seen in the

[1] The Digital Picture - a review of Jersey's digital skills - Sept 2012

related investment in and roll out of Gigabit Jersey (approximately £40million), the emergence of Digital Jersey and major e-government initiatives.

6.6 It became apparent to the Education and Home Affairs and Economic Affairs Scrutiny Panels that planned individual work on the ESC IT Skills Strategy 2013-2015 'Thinking Differently' and Digital Jersey's Strategic Plan *Developing a Digital Jersey* respectively would be more effectively undertaken as a single Review. Both strategies were to be published in October 2013, a critical moment with much riding on the aims and objectives of both complementing each other. It was agreed that Sub-Panel of the Economic Affairs Panel would duly be formed, comprising representatives of both Panels.

6.7 The Review was launched in November 2013. The Sub-Panel has undertaken an interim Review with an overall aim of establishing that the strategies represent steps in a positive direction, with appropriate 'dove-tailing' and the support of the various stakeholders. As the ESC IT Skills Strategy 2013-2015 'Thinking Differently' also required individual schools to develop and submit their IT Strategies and associated funding bids rather than ESC rolling out the strategy from the centre as has been more common, the Sub-Panel has also sought to establish that the related bid process has been suitable and fit for purpose.

6.8 Further to this interim report, it is proposed that a second Review would be merited towards the close of the 2013-2015 'Thinking Differently' framework. This would enable a full assessment of the implementation of the strategies, and in the case of the ESC recommendations made at such a stage should help inform the development of the subsequent 2016+ ESC IT Strategy.

7. REACTION TO THE EDUCATION & INDUSTRY DIGITAL STRATEGIES

7.1 Introduction

Through this Review, the Digital Skills Scrutiny Sub-Panel has sought to establish at the earliest possible stage the stakeholder support for and the merits of the Education, Sport and Culture *Vision for IT in Education: 'Thinking Differently'* combines and Digital Jersey's *Developing a Digital Jersey*. A key purpose of the timing of this Review is to examine whether the Island is setting out in an appropriate direction, with adequate cross party working, to achieve the respective aims of objectives of each strategy. It is intended to help highlight areas of concern and avoid possible misguided use of resources or ineffective effort that might undermine either or both strategies and other related initiatives such as e-government. This section addresses our first two Terms of Reference, detailing the stakeholder reaction to the two strategies received during our evidence gathering.

7.2 Digital Jersey: Developing a Digital Jersey

7.2.1 In September 2012, Mr Paul Masterton was appointed as the Non-Executive Chairman of the fledgling Digital Jersey organisation. By December of that year, a Board had been appointed and an initial roadmap was presented on 11 December 2012. In January 2013, Digital Jersey appointed its first Chief Executive Officer, Mr Ted Ridgway Watt, and with the organisation operational from that point work began on establishing the detailed strategy, aims, objectives and targets to work towards in the coming years.

7.2.2 In October 2013, the Digital Jersey Business Strategy and Business Plan, 'Developing a Digital Jersey', was published, containing short, medium and long term aims and objectives. In summary, its three primary objectives are*:*

1. *To support sustainable economic growth in Jersey's digital industry as measured by sector contribution to GVA, job creation and the number and 'health' of digital businesses.*
2. *To enable a connected, digital society as measured by an increased provision of online services by government, changes in the education curriculum, improved skills and awareness in the general population and the development of infrastructure.*
3. *To establish Jersey as an internationally well-regarded 'digital centre' as measured by ranking in key indices, recognition in target media and online statistics, the results of industry surveys and sector-specific inward investment.*[2]

[2] Digital Jersey, Developing a Digital Jersey

7.2.3 The Strategy also establishes that Digital Jersey's primary objectives translate into the following SMART targets:

- *By 2016, there will be 400 new jobs in the digital sector in the island*
- *By 2017, Jersey residents will use innovative services that will enhance their well-being, delivered over an e-government platform that gives equal access to all*
- *By 2018, there will be five times more Jersey students finding work in Jersey's digital sector than in 2013*
- *By 2020, the digital economy will have grown by a factor of five from its 2013 level*
- *By 2020, employment in the digital sector will be increased by 2,200 – four times higher than its 2013 level of 560*
- *Jersey will have a reputation as a preferred jurisdiction for investment target sectors, including e-health, e-government, data ownership and other strategic areas*[3]

7.2.4 The evidence taken addressing our first Term of Reference within the industry and wider afield, has been predominantly supportive of the published strategy and direction of travel of Digital Jersey. We observe here however that despite our attempts to engage through different means, we have been disappointed by the low volume of submissions received individually from the industry, although we acknowledge that is it itself relatively small in scale at present and may feel well represented by Digital Jersey which has a number of industry practitioners active within its Technical Advisory Groups (TAG's). We are also very grateful for those who did engage with us, and who universally contributed informative submissions.

7.2.5 With an eye on the essential skills development underpinning all of Digital Jersey's work, there is particular encouragement regarding the work of the Digital Learning Hub and the Education and Skills TAG. Within this positive response however, we do note certain areas of concern that were raised, most notably the possible over ambition of job creation targets and the number of those jobs that will be filled by locals. These of course both feed directly into/out of the key, underpinning issue of improving digital skills both for students and throughout the wider community. Reflecting the 'positivity with caveats' response we have seen, a submission from the Director of E-Scape Interactive Limited observed:

'Looking more closely at the targets that have been set for growth in terms of jobs in the sector by Digital Jersey I would say that they do seem extremely ambitious but their approach

[3] Digital Jersey, Developing a Digital Jersey

appears sound and I am a fan of the initiatives they are putting in place such as the Digital Learning Hub."[4]

7.2.6 We will deal with the potential immigration consequences associated with these figures in section 7.3.5.10 in assessing the ability of the ESC Vision for IT to deliver the industry's identified skills requirements. Addressing specifically the background to the establishment of the figures and targets included in Developing a Digital Jersey, the Chief Executive Officer of Digital Jersey explained:

'Those job figures are aggregated. Let me just talk you through them. All of the figures, both long and short-term in the plan, are comprised of, really, 3 separate components, and that is: skills that we need to bring into the Island, skills that we can develop in the Island and in retraining or the migration of skills from one sector to another within existing companies or into new endeavour…any strategy that you have has got to catch the academic year, and if you miss it by a month you have missed it by a year."[5]

7.2.7 He continued:

'We recognise that at the moment the numbers coming out of Education into digital employment are very small. So from a cohort of 1,000 if we look at school leavers going into digital employment, those leaving vocational training at Highlands going into employment and people returning from university, it is around about 25 to 30 out of 1,000. In a good digital economy, we would expect that number to be between 100 and 150, so our strategy with regards to working with schools with the digital learning hub is to drive that very small number up, and we think it can be done quite quickly. So I think by 2016 we will be looking at getting around 70 or 80 students into digital employment each year, but that is predicated upon there being work to do. As a lot of Digital Jersey is set up on the basis of the economic growth and diversification strategy, we recognise that we need diversified business here as well as strengthening the digital sector as is and that will mean bringing skills in."[6]

7.2.8 The Sub-Panel also addressed concerns about a possible lack of detail in relation to wider community digital skills development, crucial to re-skilling for employment, the successful roll-out of the States e-government programme and to avoiding creating digital divides. The Chairman of Digital Jersey commented:

[4] Written Submission, E-Scape Interactive Ltd
[5] Transcript, Public Hearing, Digital Jersey, November 2013
[6] Transcript, Public Hearing, Digital Jersey, November 2013

'I think it is fair to say that our business plan and strategy does not have a lot of depth around general skills development in the overall population. We have a few initiatives…but we recognise that there is work for Digital Jersey to do in this area and frankly not just for older people but for, perhaps, disadvantaged or vulnerable groups. Our plan at the moment does not speak effectively to this. Our response to that is we have just launched a small working group to look at what I describe as our social agenda as Digital Jersey and, again, we have got a cross-section of people participating in that. The objective of this working group is to make recommendations to Digital Jersey as to how its social objectives should expand, and this will clearly be part of it. I also think that this up-skilling or re-skilling of people generally in the population needs to go hand-in-hand with the e-government initiative.'[7]

7.2.9 Data Connectivity issues, including widely perceived high costs, have additionally been identified by stakeholders, and indeed Digital Jersey itself, as a major challenge to realising its targets and objectives. A paper published by Digital Jersey in March 2014 set out the scope of the challenges faced, both immediate and beyond:

1. *Understanding of the complexities and considerations of local data connectivity*
2. *Establishing data connectivity cost comparisons and the impact on growth*
3. *Impact of data connectivity price reductions*
4. *The current fibre broadband products and rollout timescales need improvement*
5. *Jersey has fallen behind in the rollout of LTE (4G) mobile services*
6. *The effect of market forces is limited in Jersey*
7. *Commercial constraints exist*
8. *Conflicts of interest require careful management*
9. *Developing improved data connectivity services and pricing will require broad stakeholder support*[8]

7.2.10 The March 2014 paper does outline actions and plans aimed at addressing these challenges, and it is clear that there is cross-stakeholder work being undertaken by Digital Jersey with significant parties such as JT (the dominant service provider), the Channel Islands Competition and Regulatory Authorities (CICRA) and the Economic Development Department (EDD). Nevertheless, whilst it is noted that data reflects just one area of the cost of doing

[7] Transcript, Public Hearing Digital Jersey, November 2013
[8] Digital Jersey, Enabling Effective Data Connectivity Report, March 2014

business in Jersey, it remains a 'critical requirement and key dependency for businesses in the digital sector', and is fundamental to the island's digital objectives. [9]

7.2.11 In a written submission, JT explained its position on data connectivity:

> *'Jersey is very well served with connectivity both on-island and off-island which has resulted from the very high levels of resilience required and relied upon by the finance sector. Jersey and the Channel Islands are connected by a large number of fibre-optic submarine cables owned by the various telecommunication and electricity companies which enables competitive service offerings. This is an expensive infrastructure to install and maintain but is essential for Jersey's financial institutions. JT has been working closely with Economic Development to put in place appropriate offers to ensure that such connectivity costs (whether they be perceived or otherwise) are not a barrier to growth and new business entry. In addition, the Channel Islands Competition Regulatory Authority ("CICRA") is currently undertaking a review of the business connectivity market which JT is participating in and we look forward to seeing the outputs of that work.'*[10]

7.2.12 Subsequent to our call for evidence, the Sub-Panel also notes developments at Digital Jersey that introduced some uncertainty to the organisation. Notably the CEO, who had been instrumental in developing the Digital Jersey's strategy, resigned from his position at the end of November 2013. The non-executive Chairman moved to the role of executive chair to try to ensure continuity, and he further sought to add additional positions to address business development, partnerships with major industry players and technology development. The Sub-Panel also notes that the much vaunted Space Programme with schools has been dropped, and Digital Jersey is examining the structure of its well-received Technical Action Groups in order to better utilise the TAG participants time and contribution.[11]

7.2.13 Since the aforementioned management change, a new Director has been appointed who is responsible for establishing and securing business development opportunities, as well as supporting on-island business growth, key off-island relationships and exploring new markets. Additionally, Digital Jersey has also recruited to the post of Project Manager to facilitate its Educational initiatives, including the Digital Jersey Hub Programme, the Coding Programme and a Schools Digital Programme.[12] Indeed, we observe during this Review that Digital Jersey has been an active organisation, with initiatives including the launch of Digital Jersey

[9] Digital Jersey, Enabling Effective Data Connectivity Report, March 2014
[10] Written Submission, JT
[11] Digital Jersey, 'Snapshot Update Q1', March 2014
[12] Digital Jersey, 'Snapshot Update Q1', March 2014

Hub, support of Jersey Coders after school club in conjunction with JT, a number of promotional events and seminars, and regular published comments on digital matters and news.

Finding:
The Sub-Panel was concerned by the relatively low volume of submissions received directly from the digital industry, but acknowledges that it is itself relatively small in scale at present and is well represented by Digital Jersey.

Finding:
Stakeholders have predominantly reacted positively to Digital Jersey's 'Developing a Digital Jersey' Strategy although particular concerns were raised regarding highly ambitious job creation targets.

Recommendation:
The Minister for Education, Sport and Culture must ensure momentum is maintained in the implementation of the 'Vision for IT in Education' to avoid the significant potential consequences of '*if you miss it by a month you have missed it by a year*' regarding the academic year.

Finding:
Despite some set-backs, Digital Jersey is an increasingly active organisation, now responsible for a wide-range of initiatives and engagement throughout the digital and social communities. The successful launch and subsequent opportunities provided by the Digital Hub are of particular note.

Recommendation:
The Minister for Economic Development must ensure that appropriate gathering of statistical information and key performance indicators are undertaken in relation to, and by, Digital Jersey, to inform progress against objectives on an ongoing basis.

7.3 Education, Sport and Culture: Vision for IT in Education

7.3.1 Introduction

7.3.1.1 As the name alludes to, 'Thinking Differently' does represent a different approach to previous strategies. It is a high level document setting out a framework for the embracing of new technologies and associated opportunities in schools. Whilst it sets out to encourage change in curriculum and the direct teaching of IT skills, it also notably encourages a cultural change in schools, with teachers and pupils embracing new ways of working relevant to the progress of technology. It is underpinned by four underlying principles; Inspiring, Safe, Accessible and Sustainable, and priorities in 'Teaching and Learning', Infrastructure and Technology' and 'Business and Education'. Overall funding of £6million is in place for the 3 year framework. The Director, ESC commented:

'I cannot emphasise this too strongly: the danger to this I.T. strategy is it being perceived to be about hardware and software….It is about changing the nature of teaching, changing the role of teachers and changing the relationship between the teacher, the learner and the learning.'[13]

7.3.1.2 In addition to its high level and scope, it significantly deviates from previous approaches by challenging individual schools to develop their own tailored, detailed IT business plans that sit within the framework provided by 'Thinking Differently'. Associated funding bids from the schools would be determined by ESC based on those individual plans. A number of matters have arisen from this approach, and these are explored in further detail below, along with other areas of note brought to our attention by stakeholders during the course of this Review.

Finding:
The 'Vision for IT in Education' is subject to a short timeframe, 2013-2015, but contains long term objectives.

Recommendation:
The next Minister for Education, Sport and Culture will need to prioritise the development of a long term strategy to complement and underpin the long-term objectives of the 'Vision for IT'.

[13] Transcript, Public Hearing Minister for ESC, June 2014

7.3.2 Development Timeline

7.3.2.1 The ESC Vision for IT in Education was launched in October 2013, catalysed by the IOD debate and Digital Picture report of 2012, with development work having commenced prior to this event as outlined by the Assistant Minister for ESC, Deputy R. Bryans:

'… it was raised on the floor of the I.O.D., but we had been working on it some time before then. If I roll it all the way back to the point where Patrick and I became Ministers in the Education Department, we started going out and talking to schools for one reason or another. It became apparent in that situation that people were uncomfortable with the situation with I.T. in the schools for 2 reasons really: one was that they felt it was inadequate in terms of what the provision was for teaching I.T. in the schools and the other was the personal situations within the schools. So I embarked on a discussion with the Director and said: "Look, this is something we have to address." We began talking about it then'[14]

7.3.2.2 He further explained:

'At that point in time at Le Rocquier I met Julian Box who voiced his opinion as both a parent of somebody in the digital sector ... but he had similar concerns, he had been at the I.O.D., and what could we do about it. I said at the time: "Well if you talk with Mario and Patrick, then we can be in the position ..." because he would like to create a computing club, so we did that. We put in 4 computing clubs in the school. I worked quite closely with Julian at that point and that was just to really discover what the appetite was for the kind of the thing that they were looking at. This is pre-Digital Jersey...I suppose that is when Christine, Romy and myself started to meet Keith Posner who were the real main team at that point and said: "How do we put some shape on all of this?" So at that point in time we had really discussed what the vision was. So that is what we started to work on, that is when we expanded. So then we put together the team…Then we began to spread out to further consultation because it was quite obvious the team themselves could not run the whole thing.. So we went through a process, that was very early on; December 2012 was really when we began that agenda.'[15]

7.3.2.3 It is the third 'IT' strategy for schools, the first having been implemented in 1996. Both previous I.T. strategies were centrally developed capital bid based and focused on hardware and software. The Sub-Panel raised criticism with the Director, ESC that the Department had been too slow to react to new technology, to the issues raised in the Digital Picture report and

[14] Transcript, Public Hearing Minister for ESC, November 2013
[15] Transcript, Public Hearing Minister for ESC, November 2013

IoD debate, and to the advances, initiatives and economic opportunities seen in other jurisdictions such as Malta, Estonia and Singapore. He commented:

'Well this agenda began in 1996. I think you will probably find if you went into the late-1990s that every single school in Jersey was already on broadband when England was just thinking about it. So, we have tended to be ahead of the game for many, many years but I think the point that Deputy Bryans was making is at that stage, and this is on a third I.T. strategy, each strategy has been successful but I.T. moves very quickly, it changes very quickly. Without continued investment in I.T. then you are likely to fall behind. I think that is basically what happened, not that the infrastructure was failing, because it was not. We still had fast broadband, we still do, but our strategy was based on the ratios of computers to children in the schools, so 4 children to one computer…It was based mainly on desktop computers. Now, to change that whole thing requires investment. Through that period, and for about 3 years beforehand, we had conducted a number of pilots, wireless pilots in schools. They had not necessarily been that successful, primarily because the technology was almost there but it was not quite there for schools…So fibre and the opportunity to put high-speed wireless networks in schools is a game changer. I think, with respect to that, that has given us a new opportunity and the investment has come at the right time.'[16]

Finding:
Work on a new IT Strategy for schools began considerably before September 2012, but the final 'Vision for IT' was not launched until October 2013.

Finding:
Reaction to the Education, Sport and Culture 'Vision for IT in Education 2013-15' has been broadly supportive, although there has been some criticism that this Vision should have been produced sooner.

Finding:
The significant opportunity presented by fibre connections to initiate change in the way IT is taught and used in all schools is recognised. However,, such a change is not so dependent on fibre that an earlier IT strategy could not have been developed and implemented.

[16] Transcript, Public Hearing Minister for ESC, November 2013

Finding:

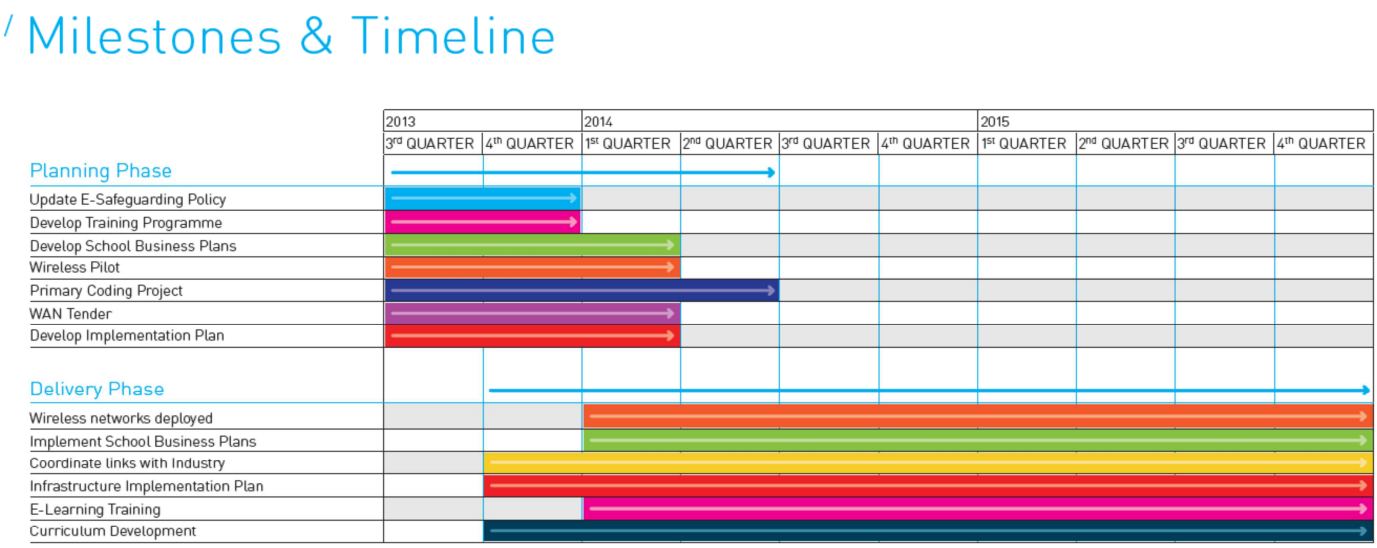
Unlike previously implemented Education IT Strategies, the 'Vision for IT in Education 2013-15' is not predominantly about hardware and software, but about changing the nature of teaching, changing the role of teachers and changing the relationship between the teacher, the learner and the learning.

Recommendation:

The Minister for Education, Sport and Culture must ensure that appropriate gathering of statistical information and key performance indicators are undertaken in relation to the Vision for IT in Education to inform progress against objectives.

7.3.3 Roll-out: Milestones and Timeline

7.3.3.1 Thinking Differently established the following 'Milestones and Timeline'



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7.3.3.2 There were concerns expressed about what appeared to be areas of ambitious timetabling contained in the above, particularly in the context of the challenge faced by schools to develop their own IT Business Plans for the first time. The Sub-Panel raised the concerns at the earliest opportunity at a hearing with the Minister for ESC in November 2013, and it was explained that whilst secondary school business plans were being developed on schedule, the new approach had been more challenging for primary schools on the whole:

[17] 'Thinking Differently', ESC Vision for IT in Education

'Assistant Minister for Education, Sport and Culture:

We have pushed one of the times back a bit because I think one of the concerns with primary schools…the 2 sets of secondary schools were up for this, and most of them were motoring anyway…I suppose the pinch point, if there is one, was the care and consideration given to primary schools. They have not really come across this before so we sent the consultants out to explore what we were suggesting through this document.

The Connétable of St. Brelade:

You mentioned pushing timelines back, what are the timelines that you pushed back just so we have got some indication of how you are going to progress this over the next 12 months?

I.S. Strategy Manager, Education, Sport and Culture:

The original schedule was for the business plan work to be all submitted by the end of January 2014, but we have realised now that the schools require some additional time to share best practice. We have used this month to arrange lots of best practice sessions within Jersey with local best practice in going along to some schools that are less confident to be able to see what other schools are doing locally. Then we are going to be arranging a U.K. e-learning day in Jersey, so we are going to look at getting some experts in from the U.K. and possibly elsewhere to inspire teachers to develop their business plans appropriately. So we have extended it from January to the Friday after half term, which is Friday, 7th March.'[18]

7.3.3.3 At a concluding hearing held in June 2014, the Sub-Panel sought an update on progress against the timetable regarding business plan development. The Assistant Minister for ESC told us:

'…we have got about 16 schools that are right on target…That is the kind of number we want to have at this point in time. We have got about 10 schools who we just need to tweak them in terms of where we need to take them, and they are being spoken to at the moment. Then we have got about 6 schools that we have identified as needing more help and we will immediately put people in on that…'[19]

7.3.3.4 At the same hearing, the Panel was also updated about progress on other key areas, including infrastructure and teacher training. We were informed by the Assistant Minister for ESC that:

[18] Transcript, Public Hearing Minister for ESC, November 2013
[19] Transcript, Public Hearing Minister for ESC, June 2014

'In consideration of the target and milestones and timeline that we have at the back of the document there, we think we are on target. There are some elements of it we are ahead of target and some elements there is a bit of slippage and that is really down to a couple of technical hitches. One is that we are going through a tendering process at the moment but other than that pretty much we believe we are on target.'[20]

7.3.3.5 The Director, ESC also set the following context:

'The important thing is to recognise that this is not a question of taking all the schools forward at the same time because quite simply we would not have the capacity in the department to do that. This will involve new structures within the school, training, hardware, software, so we will manage most of the tendering processes through the department so the funding will go out to schools…the first tranche of funding will be made available to schools…for the September school year. We only have the first tranche of funding (£1,5million); we get the second tranche of funding in ...2015.'[21]

7.3.3.6 The Sub-Panel also draws attention to the short timeframe attached to 2013-2015 Thinking Differently Strategy, particularly so when seen in the context of the Digital Jersey objectives that target as far ahead as 2020. It is implicit within Thinking Differently and the evidence taken from ESC that the Department is appreciative that this Vision sets in motion a number of long term changes well beyond 2015, and that technology will continue to advance at a fast pace. We recognise that the Department is to some extent guided by the funding envelope provided by the MTFP process, but it will need to ensure that an appropriate long term strategy is in place to provide the necessary framework to ensure the continued development of digital skills.

Finding:

Development of all individual school business plans was originally due to be completed by January 2014, subsequently extended to March, with implementation beginning from the start of the year. It is concerning that in June 2014, Education, Sport and Culture still had ten schools requiring minor amendments to plans and six schools identified as needing more help.

[20] Transcript, Public Hearing Minister for ESC, June 2014
[21] Transcript, Public Hearing Minister for ESC, June 2014

Finding:
Requiring individual schools to develop their IT Business Plans represents a significant change from previous 'top-down' culture in the Education, Sport and Culture Department. Whilst recognising the advantages this presents to schools to tailor to their needs, this has been a significant challenge, even more so for some schools than others.

Finding:
The first phase of funding (£1.5million) for the implementation of school IT Business Plans will be made available to schools for the start of the school year in September 2014. However, whilst this money is available, funding for the second phase will need to be secured through the next Medium Term Financial Plan.

Recommendation:
It is imperative that the Minister for Education, Sport and Culture secures the required funding in the next Medium Term Financial Plan to keep momentum behind the planned pedagogical changes and associated digital skills development.

7.3.4 Individual School IT Business Plans:

7.3.4.1 Whilst we have touched on the timetable and milestones regarding the development of individual IT Business Plans by schools in the previous section, the Sub-Panel also became aware of other aspects of this process that it sought answers and re-assurance on from the Minister for ESC. Those key areas are explored as set out below (from 7.3.4.5).

7.3.4.2 However, before doing so we will briefly comment here on our frustrations during parts of this Review with the avoidable delays caused by an apparent hesitancy by the Minister for ESC in adequately engaging with the Scrutiny process in way that should have been expected. Most notably, although not exclusively, we saw initial delays in receipt of the draft Strategy that led to a long waiting period (May-November 2013) before we could begin work, significant difficulties in engaging with schools despite them being key stakeholders and despite our appropriate attempts to do so, and delays in receiving draft individual business plans that had been agreed would be sent to us following school site visits in March 2014 (arranged as a compromise to move on from the previous impasse).

7.3.4.3 While we were able to move on from each moment of delay and frustration through negotiation with the Minister to find certain compromise solutions, including several school

site visits and attendance at the excellent Head Teacher/Teacher 'Inspire Day' Event, such situations should not have arisen. We trust that the ultimately positive engagement between schools and Scrutiny during the Review will act to help remove such unnecessary barriers in the future, and note that the Code of Practice for Scrutiny Panels establishes that:

The States have conferred powers on the Panels to call for any persons, papers or records relevant to the subject of a review and to require any person to attend before them…Elected members are required under the Code of Conduct set out in Schedule 3 of Standing Orders to co-operate when requested to appear and give evidence before or produce documents to a Scrutiny Panel…the Panels expect that requests for information will be met on the basis of co-operation and negotiation rather than compulsion.[22]

Finding:
The Panel has been disappointed during parts of this Review with avoidable delays on the part of the Minister for Education, Sport and Culture in ensuring his Department's adequate and timely engagement with the Scrutiny process. This has significantly impacted our ability to complete the Review within the intended timeframe.

Recommendation:
The Chief Minister should ensure that Ministers fully comply with the Code of Practice for Scrutiny Panels and the Public Accounts Committee, paying particular attention to the need to provide timely and adequate information to Panels.

7.3.4.4 Support for Schools:

7.3.4.5 It was acknowledged early on by the Minister for ESC and his Department that the approach of providing an overarching framework strategy within which schools would individually develop tailored business plans was very different to usual practice and would be a challenge. As the Director of ESC said:

'We are going to provide advisory support to schools. This is very important because what we have done, we are changing the culture. It has always been a top-down strategy. So people who are very confident and comfortable with a top-down strategy may not be confident and comfortable with the strategy that we are putting forward at the moment. So I expect that we have got quite a few head teachers who are wondering: "How am I going to tackle this?" We will provide advisory support for those head teachers. We are not expecting

[22] Code of Practice for Scrutiny Panels

to turn down bids, we are expecting to work with the schools so that their bids are successful…Each school is going to be in a different place and we need to recognise that and we need to put more support into the schools that are less confident and give the schools who are confident a bit more freedom. So it is not a "one size fits all" model. It will take account of where each school is, their context and help them move on. Some may take a little longer than others but that is not a problem.'[23]

7.3.4.6 With this in mind, the Sub-Panel sought re-assurance regarding the support that had and would be in place throughout the process. At a hearing in November 2013, the I.S. Strategy Manager, ESC told us in relation to secondary schools:

'They have been asking some general questions and we have been responding and sending information out then to all schools so anybody that does not know something then we are providing crib sheet questions and answers and sending it out to all the secondary schools…We did not want to be too prescriptive in terms of defining exactly what was going to be done because we wanted to keep it open and flexible and then let the head teachers decide the most appropriate solution in terms of innovation and technology for their own schools and their own settings and their own contexts. Secondary teachers are very confident. We have not had a single complaint from any of them about it. ..We have been telling them at secondary head teachers' meetings for a while that this was coming and to start thinking about it. It was going to be, like I said, a change. It is a big culture change from a centralised roll-out of things that we have done before but we are going to be working with schools and supporting them through that process.'[24]

7.3.4.7 In relation to primary schools, we were told:

'Specifically, now we are focusing on the primary schools, and…have done some sessions with the primary heads to help to again reassure them of any things that they do not know. Now we have given them an extension on the submission date; that has given them more time because it is obviously a very busy term as well.'[25]

7.3.4.8 Speaking at the concluding hearing held in June 2014, the Director, Education, Sport and Culture confirmed further details about the support in place:

[23] Transcript, Public Hearing Minister for ESC, November 2013
[24] Transcript, Public Hearing Minister for ESC, November 2013
[25] Transcript, Public Hearing Minister for ESC, November 2013

'We have employed a couple of advisers, specific I.T. (Information Technology) advisers in education from England who have come across and worked with those schools…they are used to working in the classroom with teachers and with head teachers, helping them develop their plans and implement their plans.

Finance Director, Education, Sport and Culture:

We are also using our own professional partner team who obviously have got a detailed knowledge of the schools as well."[26]

7.3.4.9 We have been informed further about shared practice opportunities being provided and taken, learning from successful local models such as those seen at Beaulieu and Hautlieu, but also further afield as seen at the 'Inspire Day' training event. Idea sharing amongst schools has also taken place through the welcome formation of cluster groups of schools (see also consistency 7.3.4.10).

Finding:

With all schools being different, not all are expected by ESC to complete and implement their IT Business Plans at the same speed. ESC is actively targeting more support at the schools that are less confident or equipped to develop such a process

Recommendation:

The Minister for ESC must ensure that appropriate support to schools continues to be provided throughout the delivery phase of the 'Vision for IT', and beyond, in order to help achieve its long term ambitions.

Finding:

Some schools have worked in clusters to develop their business plans. This involves a secondary school grouping together with feeder primary schools to minimise inconsistencies in the digital skills levels amongst the feeder schools themselves, and between a Secondary school and its feeder Primaries.

Recommendation:

All schools should be required by ESC to work in appropriate clusters.

[26] Transcript, Public Hearing Minister for ESC, June 2014

Recommendation:
ESC should facilitate scheduled meetings of all Head Teachers (Primary and Secondary) to share best practice in IT. The same should occur for all Heads of IT, either at the same scheduled meetings as Head Teachers or separately.

Recommendation:
Education, Sport and Culture must work to provide consistency across the Island schools to ensure that the acquisition of digital skills is not a post code lottery.

7.3.4.10 Consistency:

7.3.4.11 The Sub-Panel received a number of comments regarding the need for the Vision to deliver consistency in IT skills development throughout all schools, so as not to undermine its principles and objectives of Digital Jersey, or create unintended negative consequences such as a digital divides. The concerns raised are well illustrated by a submission from the Chairman, Chartered Institute for IT (BCS):

'It is very pleasing that Education, Sport and Culture recognise the need to radically improve the education of IT in the island. Whilst Highlands provides a good service for the BTEC and Foundation IT Degree courses, IT education in secondary and primary schools is inconsistent.

…However, there is a significant concern with one particular area.

Schools and Highlands College will be expected to develop clear, coherent and ambitious plans for integrating technology into the curriculum. Plans must incorporate specific measurable outcomes linked to the IT Skills Strategic Vision and aligned to their school development plan. Individual plans will be presented to the Strategic Sponsoring Group for approval and funding will then be made available for implementation so schools can continue to build upon their existing good practice.

Schools will have the freedom and responsibility to decide the most appropriate solution for their pupils. This may include the choice of mobile devices and other digital media to encourage innovation and creativity. It will be important for schools and businesses to share best practice and avoid duplication where possible.

It is not clear why the schools and Highlands College must create these plans themselves. It is already apparent that IT education and IT knowledge in secondary and primary schools is inconsistent. If the schools have to create their own plans, they will only be as good as their current knowledge and this will only increase the inconsistency. In fact, if a school's plan does not get approval, they will not receive any funding. It is not clear why Education, Sport and Culture are not working with the schools, to formulate the plans for each age category. The 'hands-off' approach appears to be inappropriate. The overall concern is that the current gap between IT literate schools and those that aren't so IT literate, will widen. The consequence will be (IT) disadvantaged children and an even more inconsistent IT education.'[27]

7.3.4.12 Addressing such issues, the Sub-Panel sought clarification about how the Department would ensure appropriate overall consistency throughout schools amongst the range of individual requirements and approaches established by the individual business plans. In response, we have been told by ESC of a number of means by which this is to be achieved. These include significant elements of the support structures put in place for schools to share best practice and outlined in the previous section. Linked to this is the development of some cluster groups of schools, though not all have been part of such a scheme. A cluster, a good example being the Western cluster centred around Les Quennevais school, involves a secondary school grouping together with feeder primary schools to encourage consistency and to minimise the possibility of an inefficient gap being created between primary and secondary schools.

7.3.4.13 There is also a significant procedural step involving the central ESC Department that all schools must pass through to secure funding, with assessment criteria and guidelines having being shared by ESC with all schools from the beginning of the business plan process. The Department will also be involved directly in tender processes and significant bulk purchases to ensure value for money, again providing a layer of oversight that will help generate consistency. The Director, ESC commented:

'…this (the top down funding process) is the way we will ensure a consistency…I think the important thing to recognise is that although there is £3 million sitting in this particular strategy and an additional £3 million within the department which enables us to manage the whole system, schools themselves will probably add additional funding to it from within their

[27] Written Submission, Chairman, Chartered Institute for IT (BCS)

own budgets…and they will be dependent on us securing again additional resources in the next Medium Term Financial Plan to take that work forward.[28]

Finding:
Whilst there are notable potential advantages, initial concerns have been identified about ESC's approach of requiring schools to develop their own IT business plan, including how this might affect consistency and the need for appropriate support to be provided by ESC to schools.

Finding:
To encourage consistency, all school IT business plans must be approved by Education, Sport and Culture to secure funding, with assessment criteria and guidelines having being shared with all schools from the beginning of the business plan process.

Finding:
It is too early to judge either way whether Education, Sport and Culture's approach of requiring schools to develop their own IT Business Plans, rather than top-down, has been successful.

7.3.4.14 Digital Divide

7.3.4.15 There is unanimous opinion amongst stakeholders that a digital divide amongst schools and pupils must not be allowed to grow as an unintended consequence of the Thinking Differently Strategy. It is recognised that digital divide and even digital poverty exists between and within certain parts of Jersey society, a consequence of demographic factors including fluctuations in parental digital literacy, financial circumstances and English as a second language challenges. This situation is subsequently reflected amongst the school pupil population, and depending on the catchment area for each school can pose significantly more challenge to some schools than others, thus making minimising a digital divide a difficult task. It is feared that if consistency is not managed as effectively as planned by ESC, then allowing schools to develop their own IT plan may simply exacerbate this divide.

7.3.4.16 Bring Your Own Device (BYO)

7.3.4.17 The issue is brought into sharp focus when considering the matter of Bring Your Own Device, which is supported by industry as a notable way in helping to develop general digital skills and is also supported by ESC within its strategy for those schools that wish to adopt it – those

[28] Transcript, Public Hearing Minister for ESC, June 2014

that don't will outline a bid for device infrastructure to be provided centrally. The challenges and how it is planned to address them were raised with the Minister for ESC and his Department. The Director, ESC informed us:

'we would expect schools to make sure that when they spend on I.T. that they are not creating a social divide within their own school…if they are following a Bring Your Own Device strategy, then that school needs to be very conscious as to the impact that that is going to have on children who will not have their own device at home. When schools such as the one that you were talking about are taken into consideration, that is exactly what we would be looking at. Are they going to ensure that everybody is going to have access if they have not got the devices at home?[29]

7.3.4.18 He continued:

'You have always got that sort of situation where you have got potentially some children who can afford better than others and you have to manage it within the school but that is the nuts and bolts of running a school. So we would expect teachers to be able to manage that and to be conscious of it. That is the first part: be conscious of it and to ensure that young people who could potentially be in that situation can access a device in school. So everybody else might be bringing their own device but the school will make sure that ... well we would expect the school to make sure that less well-off children have access to something in the school.'[30]

7.3.4.19 One suggested method to help overcome the potential digital divide was the introduction of a social premium within the funding model to try to assist those schools and pupils facing the biggest challenge in this area. The Director, ESC advised us that:

'We have not got a social premium at the moment. We have a social premium in the next skills strategy. You will note that there has been additional resources included in the skills strategy. I think it is 2 point something million additional resources in the skills strategy to provide additional support for young people who are children who are not making the progress that they need to make. So if we secure that resource at the next Medium Term Financial Plan, yes, we will but we are not using funding currently from the I.T. budget to be able to do that.'[31]

[29] Transcript, Public Hearing Minister for ESC, June 2014
[30] Transcript, Public Hearing Minister for ESC, June 2014
[31] Transcript, Public Hearing Minister for ESC, June 2014

7.3.4.20 He further commented:

'From the position of an educationalist...I would say those schools (facing particular demographic challenges) are in a tremendous position. They have got a real opportunity now to use technology effectively to address the needs of those young people and to improve their standards and to help them access the language which maybe is proving a little bit difficult for some of them. So it is a question of whether or not you look at this as an issue and a barrier and a challenge or whether you look at it as a real opportunity. So when we would look at the plans for those schools, we would expect to see those schools using I.T. in an effective way to address what they see as challenges.'[32]

Finding:
Stakeholders are unanimous that a digital divide amongst schools and pupils must not be allowed to grow. If consistency is not managed as effectively as planned by Education, Sport and Culture, then the current Vision for IT in Education might inadvertently exacerbate this problem.

Finding:
There is currently no social premium within Education, Sport and Culture's IT funding model to try to assist those schools and pupils facing the biggest challenges regarding IT

Recommendation:
An examination should be undertaken by the Minister for Education, Sport and Culture about the merits or otherwise of introducing a social premium to the funding of the IT strategy for education from 2016.

7.3.4.21 E-Safety Policy

7.3.4.22 Another notable issue linked to BYO is the consequences it has on e-safety policy. BYO specifically, but also the aspired pedagogical and school culture changes, would be potentially undermined by continuation of the current, tight and centrally dictated e-safety policy. Whilst re-confirming that pupil safety must always remain the absolute priority of schools and the Department, the Director, ESC set out how the Department's approach to this important matter has changed in the development of the current strategy, with schools now having the option to develop, within ESC guidelines, an individually tailored policy if they so choose:

[32] Transcript, Public Hearing Minister for ESC, June 2014

'We ran a pilot at Les Quennevais School which was a Bring Your Own Device pilot where the wireless network was established and children were given the opportunity to bring their own devices into school. There were 2 challenges with that: one was around the effectiveness of the ability of the technology to deliver but the other one was around the challenges of e-safety. Our e-safety has been tight, very tight, in fact. We have been challenged that it has been too tight. So the difference as we move forward is that the e-safety policy will be more age suitable as opposed to a blanket policy that stops some of the older children from getting where they need to get to on the Internet.'[33]

7.3.4.23 The Director further explained the current situation, confirming in June that schools have the option to take responsibility for it if they are confident enough to do so and they can demonstrate that they have got the ability, with a number having chosen to take that route. In terms of co-ordinating e-Safety within the department, an e-Learning and e-Safety co-ordinator is in place to provide schools with relevant information and training.[34]

Finding:
Education, Sport and Culture's approach to e-safety has changed. Previously top-down, schools now have the option to develop an individually tailored policy if they so choose, within Education, Sport and Culture guidelines.

Finding:
Despite changes to the model of establishing e-safety policies in schools, pupil safety must always remain the absolute priority.

Recommendation:
School e-safety policy should also educate and equip students to be safer users of the internet outside of school.

Finding:
Education, Sport and Culture has in post an e-Learning and e-Safety co-ordinator to provide schools with relevant information and training, to establish appropriate individual polices and to oversee consistency.

[33] Transcript, Public Hearing Minister for ESC, November 2013
[34] Transcript, Public Hearing Minister for ESC, June 2014

7.3.4.24 Teacher Training

7.3.4.25 The challenge of changing the teaching culture, methods and environment within schools to achieve the aims and objectives of Thinking Differently is widely acknowledged and not underestimated. An illustration of such change is the evolving flip teaching pedagogical model:

'a form of blended learning in which students learn new content online by watching video lectures, usually at home, and what used to be homework … is now done in class with teachers offering more personalised guidance and interaction with students, instead of lecturing'[35]

7.3.4.26 As a result, teacher training features prominently in the thinking and plans of ESC and schools, teaching and learning has significant funding of £2.415million secured within the Strategy, it is recognised by the Digital Industry and was the focus of a submission to us by the NASUWT. The Union submission commented on a number of positive potential outcomes for pupils, schools and teachers of an IT Strategy based on the framework of Thinking Differently. It suggested that it is beyond dispute that IT skills are necessary to prepare pupils for important economic, social, civic and cultural dimensions of modern life, and that IT can facilitate the development of innovative teaching strategies, which would not otherwise be possible without the effective use of technology. Furthermore:

The Vision for IT in Education document establishes some sound principles upon which an effective strategy for the use of technology in education might be taken forward. In particular, the NASUWT welcomes the commitment by the States to invest resources in the establishment of an effective IT infrastructure for the Island's education system, the recognition of the importance of effective support frameworks for teachers and school leaders and the need to provide high quality IT-related training and professional development for the school and college workforce'.[36]

7.3.4.27 It also outlined certain areas that should be given further attention to avoid negative outcomes, including:

'…it is essential that IT is used appropriately…particularly in relation to the work/life balance of teachers and headteachers. There is evidence that the increasing potential for teachers to use IT to work remotely beyond school could lead to pressures for teachers and

[35] http://en.wikipedia.org/wiki/Flip_teaching
[36] Written submission, NASUWT

headteachers to use time after school, weekends and school holidays to undertake additional work that should be planned for and resourced during the normal working day. Therefore, instead of teachers and headteachers being able and encouraged to work smarter there is the potential for technology to be used to require them to work even harder and longer, leading to the creation of unacceptable workload burdens, undermining their entitlements in respect of work/life balance and hindering work to exert downward pressure on excessive working hours.

In addition, approaches must be developed that avoid the implementation of initiatives based on 'remote learning' with teachers providing feedback and input to learners outside school hours through the use of e-mail, social media or web-based communication systems.

Feedback from NASUWT members working in the UK and elsewhere suggests that teachers in some circumstances feel forced to use expensive new technology in order to justify its purchase when an alternative pedagogic approach might be more effective. There is therefore a genuine risk that educational provision can become technology-led in such circumstances, with the needs of learners and the discretion of teachers to determine approaches to meeting these needs rendered as subordinate considerations. It is essential that the States works to ensure that steps are taken to avoid such an approach becoming embedded within the education system in Jersey.'[37]

7.3.4.28 We raised with ESC the matter of how it was approaching what it recognised to be a significant challenge, and fundamental issue to the success of the Strategy. Whilst it has and is offering more generalised initial training opportunities where justified, such as the 'Inspire Day', ESC has required schools to incorporate training requirements within the individual plans taking the approach that Heads and Teachers themselves are best placed to know what those are in order to judge and provide targeted or more generic initial training opportunities. The Director ESC explained:

'It is a question now of drawing out the streams from the individual business plans and putting together the more central training programme that we would hope to help the schools access but at the same time schools themselves will be developing their own programmes.'[38]

7.3.4.29 Aside from initial short term training, it is recognised that in the medium and longer term ongoing training and development will be necessary to keep up to speed with technology and

[37] Written submission, NASUWT
[38] Transcript, Public Hearing Minister for ESC, June 2014

ensure appropriate pedagogical standards are being delivered. ESC, as many stakeholders have, also recognise that the new demands in the approach to teaching may prove a particular challenge to some teachers more than others. The Sub-Panel asked ESC how it would mitigate fears of digital divide by striving to ensure consistency and best practice, and approach those teachers that were continuing to struggle to react to new technology. The Director, ESC told us:

'Let us say I am a head teacher and I am trying to implement this vision for I.T. within my school…I would want to see in the lesson planning within a department that the department was conscious that technology can improve learning outcomes for the young people and that it is being used effectively, not just being used as a typewriter, not just being used as a spreadsheet and not being used simply to play games…we would oversee it in the same way that we would oversee standards in any aspect of education through our Professional Partnering programme…So when we go into schools, our professional partners go into schools, the last question is about the quality of educational standards and they will look for the evidence, so we would expect to see evidence when we do a report on a school that technology is being used effectively to enhance learning.'[39]

7.3.4.30 He continued:

'…the pupils have an entitlement and we would work through the Professional Partnering programme to ensure that children in each of our schools got their entitlement. That does not necessarily mean that every school is going to do it the same way but it is important that the children get their entitlement. You could apply the same argument to standards of English, to standards of mathematics. It is about managing standards right across the service in a consistent way and that is what we try to do…We will use the systems and processes that we have already got in place to be able to assess whether a school is where it should be and if it is not to provide whatever action that we can to help it improve.'[40]

Finding:
The challenge of changing the teaching culture, methods and environment within schools to achieve the aims and objectives of the 'Vision for IT' is widely acknowledged and not underestimated.

[39] Transcript, Public Hearing Minister for ESC, June 2014
[40] Transcript, Public Hearing Minister for ESC, June 2014

Finding:

Teacher training features prominently in the thinking and plans of Education, Sport and Culture and identification of each school's need is a core requirement of the IT Business Plans.

Recommendation:

It must be ensured that teachers are provided with ongoing training support, and that training and standards of teaching using IT are subject to ongoing monitoring.

Finding:

It is not yet apparent that there has been significant delivery of teacher training despite the upcoming implementation of the 'Vision for IT' from Sept 2015

Recommendation:

A structured, comprehensive programme of identified teacher training requirements should be developed and be ready to implement by Education, Sport and Culture from the start of term in September 2014.

Finding:

All pupils have an entitlement to appropriate standards of teaching. This will be monitored by Education, Sport and Culture with regard to teachers' use of technology.

Finding:

Education, Sport and Culture will in part use the Professional Partnering Programme to help monitor implementation of the Vision for IT and maintain appropriate standards in the use by teachers of technology to effectively enhance learning.

Recommendation:

Education, Sport and Culture will need to ensure that new expectations regarding the use of technology to effectively enhance learning are fully communicated to the Professional Partners.

7.3.5 Skills:

7.3.5.1 It is evident that the need to improve digital skills across the community in Jersey is recognised by all stakeholders, and as a high level objective underpins and drives both the Thinking Differently and Digital Jersey's 'Developing a Digital Jersey'. Digital Jersey and individual industry stakeholders have commented positively on the direction of travel established in the development of digital skills for pupils through the schools.

7.3.5.2 Digital Jersey's aspirations for the skills it believes are required to help support the sector's growth and its other primary objectives around community skills and e-government are summarised as follows by its Chairman:

'*I think it is very important for Digital Jersey to be really clear on this. We are not here…to say what the curriculum should be or should not be. We have got a strong Education, Sports and Culture Department, that is their remit together with the schools'. I think what Digital Jersey is doing is to define from the industry and the Island's point of view the range of skills that people exiting the education system would ideally have so that they could be employed. Those skills, I think, are a range of those that you learn in school, the curriculum skills, then there are the extra-curricular skills perhaps in terms of teamwork, personal interactions, communication skills. Then there are the more professional digital skills that somebody needs to have to be employed. So one of Digital Jersey's deliverables is to say that the ideal student exiting at this point of the education stream should have this range of skills. So we …are collaborating, with Education so that when people come out they are very employable.*'[41]

7.3.5.3 Such skills will be developed in two distinguishable ways in education via Thinking Differently. Firstly, general digital skills of all pupils should be improved through the change in teaching culture and methodology, which embeds technology more firmly as a routine teaching aid in classrooms across all subjects, and making it an integral part of a pupils' way of learning and recording work. Bring Your Own device and revised e-learning strategies should complement this general digital skills boost. As the Chairman of Digital Jersey's Education and Skills TAG outlined:

'*… we identified 5 areas …that we felt were the most important. The first one and the most important one was to improve access to technology, access to the Internet and access to the use of modern technologies, most of which the students had access to at home but did not*

[41] Transcript, Public Hearing, Digital Jersey, November 2013

have access to at school. We felt that that was really the bedrock of everything that we would do going forward, so that was important to do. That covered things like a trust relationship on the Internet, using collaboration tools to share things among themselves…(in)… the vision document…that has broadly been covered... So we feel that we have achieved that number 1 priority for us.'[42]

7.3.5.4 The second significant means to achieve improved digital skills comes through the specific teaching of IT as a subject. At its core this is of course the new IT curriculum (adopted from the new UK curriculum), which has been a significant time in development but which is broadly now seen as a significant improvement on the previous curriculum in terms of developing more relevant IT skills. Higher and further education opportunities are also developing, and indeed more students may choose that route given an improved and more prominent focus to IT in earlier years. Such skill developments in schools are also encompassed by IT targeted extra-curricular activities such as Coding Clubs. The Director, ESC explained the change of emphasis:

'There is an emphasis on computing as opposed to a more generic syllabus which was around the development of I.T. skills, I.T. skills for business. They are still part and parcel of it but there is a more specific element now and a more specific curriculum to do with computing. But I think that is where it sort of follows on from the previous question around the relationship between Digital Jersey and the department. Digital Jersey, although it is a wide focus for Digital Jersey on the Island of Jersey, it is about attracting and encouraging the fertilisation of the digital industries in Jersey. The education aspiration is much broader. It is preparing people to live in this digital age, and who knows what it will look like in the future, and be able to exploit the opportunities that that will provide which may be in technology. But it may be just using technology to take the advantage of opportunity elsewhere, so it is a much broader agenda. The danger is that the whole thing becomes perceived to be a strategy that will turn coders out of schools to take up roles in the small businesses in Jersey. That may well happen, and we would encourage that, but I do not think it is going to happen to the extent that some people believe it will happen.'[43]

7.3.5.5 There has been some frustration from Digital Jersey with ESC in the development of the Thinking Differently, and indeed vice versa. The Chair, Education and Skills TAG told us:

[42] Transcript, Public Hearing, Digital Jersey, November 2013
[43] Transcript, Public Hearing Minister for ESC, June 2014

'I would say that we were not on the same page on day 1 but I would not say there was a lot of hard bargaining. I think we put our case forward and it was accepted reasonably early on, not straightway, probably around 50 per cent of the way through the process it then started to contain the sort of language that we would like to see, absolutely…so putting across our view and why we thought it was important and so forth, so maybe lobbying was not the correct term to use, but it was within the debates within the working group. We met every month for quite a few months.'[44]

7.3.5.6 From the ESC perspective, it has felt that expectations that it could or should produce suitably skilled school leavers targeted at specific roles in a specific industry are flawed, and that it is not its role or responsibility to do so. The Director ESC explained:

'How many plumbers do we need next year? How many coders do we need next year? These are difficult things to predict. You cannot use the education service to turn out a specific number of people skilled to do particular jobs the following year. You can do that by other means but that is not the job of the education service essentially….When you talk about the needs of industry, these things are all starting off in a way, we have been through this before with Finance, and you end up with a partnership that develops that enables the education service to understand what it is that Finance are looking for and to provide young people with the generic skills that will enable them to make choices to go into that industry or to go into another industry. It is not the role of the education service to turn out people for individual industries. It is the role of the service to turn out people with the generic skills that will enable them to make the choices and then pursue whatever further training they need.'[45]

7.3.5.7 The Director continued:

'… I think it is 2 per cent of our young people are studying something technology-related at universities at the moment. That is quite a high proportion but the question is: where are the jobs? It is a chicken and egg situation, is it not? The jobs have got to be there, the industry has got to be there to make it attractive for young people to want to study the subject, to follow a career in those industries. I guess if you were to go to some of the high flyers in terms of technology, their aspirations would be to work for some of the giants of the technology industries rather than maybe some of the smaller to medium-sized firms in Jersey. So the work of Digital Jersey complements the work of the education service. Young people

[44] Transcript, Public Hearing, Digital Jersey, November 2013
[45] Transcript, Public Hearing Minister for ESC, June 2014

will come out of the education service wanting to work in a local digital industry but the local digital industry has to be there, so the jobs need to be created. That is obviously where the role of Digital Jersey comes in.'[46]

7.3.5.8 It does appear that any earlier, major differences have since been overcome. The Chairman of Digital Jersey told us:

'I would say that the outcome of this vision document, that Digital Jersey is fully aligned with the vision and the clearly-stated principles in this document, we are thoroughly behind this and I would say that the vision and the principles are completely aligned with where Digital Jersey would like to see this going and we see this as being really supportive of the long-term aims for Digital Jersey in terms of delivery of our primary objectives…'[47]

7.3.5.9 He also observed:

'…this vision and the approach is placing a lot of responsibility and authority with the individual schools to develop their technology business plans. We believe, Digital Jersey believes, that that is the right approach for Education, Sports and Culture to place that responsibility there. Obviously, we are right at the beginning stage of those plans being developed, Chairman. So I think, not with any hesitation, but we would like to see how those plans are developed, how they are evolved and the clear objectives, key performance indicators that will, I am confident, be embedded in those plans.'[48]

Finding:
There were previous differences of opinion between Education, Sport and Culture and the Digital Jersey about the appropriate level of focus on developing suitably skilled school leavers to help meet industry requirements.

Finding:
Education, Sport and Culture and Digital Jersey are now in agreement that students exiting school at 16 should have a range of skills. This should be a combination of specific curriculum based knowledge and more generalised skills including teamwork, problem solving and communication.

[46] Transcript, Public Hearing Minister for ESC, June 2014
[47] Transcript, Public Hearing, Digital Jersey, November 2013
[48] Transcript, Public Hearing, Digital Jersey, November 2013

Finding:
Digital Jersey has commented positively on the direction of travel established in the development of digital skills for school pupils by the Vision for IT in Education.

Finding:
IT skills in schools will be developed in two distinguishable ways via the 'Vision for IT'. Firstly, general digital skills of all pupils should be improved through the change in teaching culture and methodology, and secondly, and more directly, by the introduction of a new IT curriculum from September 2014.

Finding:
Despite some courses at Highlands College, the formal provision of professional digital skills education post 16 is limited. It appears that the digital industry has recognised a need to bridge this gap through its own initiatives.

Recommendation:
Through assessment of appropriate statistical monitoring and working in partnership with the digital industry, Education, Sport and Culture should be flexible provide appropriate higher education courses and learning opportunities tailored to the digital sector.

7.3.5.10 Skills Gap – Inward Migration Concerns?

7.3.5.11 As alluded to above, it has been widely recognised and accepted by stakeholders that in the short term it is necessary for certain skills to be brought in from outside the Island to stimulate digital activity and fill certain required positions given the current skills gap. However, in the medium and long term it is recognised that to avoid the possibility of developing an immigration reliant industry, suitably skilled Jersey students and residents will need to be 'available' in adequate numbers to avoid that situation. This position was confirmed by the Chief Executive Officer, Digital Jersey:

'We need business leaders here, entrepreneurs with strong ideas, and they need to be, on the whole, new ideas otherwise we would have a stronger sector, a bigger sector. Bringing those new ideas in, there will be a need early on to have the balance more in favour of inward

skills. Longer term, fitting in with E.D.D.'s Enterprise Action Plan, we will make sure that we are aiming for a ratio of 1:4, so 4 locally-employed per inward licence.'[49]

7.3.5.12 By way of context, it should be recalled that Digital Jersey's Strategy establishes goals that include:

- *By 2016, there will be 400 new jobs in the digital sector in the island*
- *By 2018, there will be five times more Jersey students finding work in Jersey's digital sector than in 2013*
- *By 2020, employment in the digital sector will be increased by 2,200 – four times higher than its 2013 level of 560*[50]

7.3.5.13 These were further explained by the Chief Executive, Digital Jersey, who told us:

'Those job figures are aggregated…All of the figures, both long and short-term in the plan, are comprised of, really, 3 separate components, and that is: skills that we need to bring into the Island, skills that we can develop in the Island and in retraining or the migration of skills from one sector to another within existing companies or into new endeavour. Julian has already alluded to the problems of the late start, you know, any strategy that you have has got to catch the academic year, and if you miss it by a month you have missed it by a year. We recognise that at the moment the numbers coming out of Education into digital employment are very small. So from a cohort of 1,000 if we look at school leavers going into digital employment, those leaving vocational training at Highlands going into employment and people returning from university, it is around about 25 to 30 out of 1,000. In a good digital economy, we would expect that number to be between 100 and 150, so our strategy with regards to working with schools with the digital learning hub is to drive that very small number up, and we think it can be done quite quickly. So I think by 2016 we will be looking at getting around 70 or 80 students into digital employment each year, but that is predicated upon there being work to do. As a lot of Digital Jersey is set up on the basis of the economic growth and diversification strategy, we recognise that we need diversified business here as well as strengthening the digital sector as is and that will mean bringing skills in.'[51]

7.3.5.14 Despite the positivity outlined in the previous section about the direction of travel set by Thinking Differently, there are concerns that timelines of the two strategies do not appear to

[49] Transcript, Public Hearing, Digital Jersey, November 2013
[50] Digital Jersey, Developing a Digital Jersey
[51] Transcript, Public Hearing, Digital Jersey, November 2013

converge as would be necessary to meet Digital Jersey's short and medium term goals re local jobs. The Minister for Economic Development observed the following about the importance of the timeframe for Thinking Differently:

'We recognise that in the short term, and it is the same not just for Jersey for any jurisdiction seeking to develop a digital economy, that specialist skills are required. You cannot just hand it on overnight so there is going to be a lag period as you ensure that schools at every level are properly structured with the right curriculum to ensure that the skills required for the future are going to be provided. So that is in the sort of medium to longer term. In the short term, clearly to ensure that the sector can be developed appropriately and properly and opportunities are not missed in a highly competitive area. We should never forget incidentally that Jersey is not alone and not the ones that thought up this idea of a digitally enabled economy. There are many others doing it and they are doing it rapidly so we cannot stand still and there will be a requirement to bring in specialist skills to pump prime the industry. But what Education are doing and the speed at which they move and the strategy they put in place is critical to ensure that the amount of inward migration in the future in these areas will be reduced.'[52]

7.3.5.15 The Chief Officer, Economic Development, explained how the local employment opportunities in an emerging digital sector would be more than just skilled IT positions, which would help achieve the necessary 1:4 ratio of inward migration v's local appointments in the sector. However, whilst supporting skills such as marketing and business development expertise was available locally, he acknowledged:

'… 2016 is not that far away and what we are talking about is an education system which really needs quite significant change to align itself in terms of digital economy, computer science, which is carried on as I.C.T. (Information and Communication Technology). So the numbers do not really add up if you do not think about bringing elements in.'[53]

7.3.5.16 Thinking Differently is currently in the final phase of its planning stage, and in effect it will only begin to be implemented from the start of the new school year in September 2014. It is in itself a start of long term cultural change in schools that will be subject to ongoing update and revision. The new IT curriculum begins from the same time, and again will take time to bed in and a number of years before the first pupils will leave school with the benefit of its full cycle.

[52] Transcript, Public Hearing, Minister for Economic Development, November 2013
[53] Transcript, Public Hearing, Minister for Economic Development, November 2013

7.3.5.17 Indeed, there is clear recognition on the part of many stakeholders, Digital Jersey included, of the skills gap and the potential timeframe issues in waiting for the results of Thinking Differently to fully emerge. We are aware that encouraging steps have been taken to try to bridge the gap that have involved both collaborative initiatives and other industry based projects. Some of this joint industry-ESC work was illustrated to us by the Strategic Policy Manager, Economic Development, who advised:

'…it is not as if things have not been happening within the schools…We were approached in the last month by a company who are looking at offering coding…what they are wanting to do is look at offering coding training…as an awareness campaign and those who are interested in possibly going into the digital industry…they see that as a good introduction to people wanting to go into that industry. At the end of the 12-week course, the concept is that those individuals will be almost showcasing what they can do to some of the local digital businesses to see if they will be able to take them on…….I think the point is that…we are looking long-term, medium to long-term for schools but it is also about transferable skills, people who may be in one particular industry who are maybe wanting to go into and unsure about how to approach those in that industry and here are stepping stones to help those people to get into …'[54]

7.3.5.18 Notable initiatives and developments driven by Digital Jersey include the creation and work of the Education and Skills TAG (including a representative from ESC), Jersey Coders after school club for teenagers wanting to learn coding and IT skills, Be Very Afraid events, the Coding for Women programme and the appointment of a Project Manager who is facilitating Educational initiatives, including the Digital Jersey Hub Programme, the Coding Programme and a Schools Digital Programme.

7.3.5.19 Perhaps most significant in the industries efforts to bridge this skills gap is the creation of Digital Jersey's 'Digital Jersey Hub', opened in May 2014. Its aims are set out as follows:

Aiming to be the heart and soul of a digitally enabled island, the Hub has been designed to support business, students and the community as they meet the opportunities and the challenges of the digital age. The Hub has been designed to provide an innovative and creative environment and to promote collaboration, business development, community engagement, networking, learning and skills development. The Hub will include:

[54] Transcript, Public Hearing, Minister for Economic Development, November 2013

- *A Skills Zone for learning and education, skills and professional development*
- *A Co-working Zone for flexible office space, support needed for start-ups and business development*
- *An events space for presentations and workshops*
- *A Support Zone, where the Digital Jersey Team is based*
- *Access to mentors and a business accelerator*

Prior to its official launch, a number of companies, individuals and community groups have already been engaging with the Hub, and have provided extremely positive feedback on this space for like-minded people to collaborate.[55]

7.3.5.20 The Chairman of Digital Jersey commented:

'...the Hub takes the best of business accelerators and incubators from leading tech centres and combines this with a social conscience, aimed at skills, learning and community support for Jersey. I see the Hub as a great catalyst for the digital sector, bringing people together with excitement and energy. Change is underway in Jersey and we are working to ensure Jersey has the right conditions for success, whether that means securing a job in the digital technology sector, starting a business or developing digital skills.'[56]

Finding:
It is widely accepted that some specialised inward migration will be required to stimulate and support the growth of a thriving digital sector in Jersey.

Finding:
States policy requires a 1:4 ratio of inward migration v's local appointments in the sector.

Finding:
Local employment opportunities in the emerging digital sector are more than just skilled IT positions, and include more general business support roles.

Finding:
There are concerns that the timelines of the Digital Jersey strategy and Education, Sport and Culture Vision do not appear to converge as would be necessary to meet Digital Jersey's short and medium term goals regarding local jobs.

[55] http://www.digital.je/news/digital-jersey-hub-launch
[56] http://www.digital.je/news/digital-jersey-hub-launch

Finding:
The new IT curriculum begins from September 2014. It will be a number of years before the first pupils will leave school with the benefit of its full cycle.

Finding:
Steps have been taken to try to bridge the short-medium term gaps in skills development between the Digital Jersey's strategy and Education's Vision for IT. This has involved some collaborative initiatives between Education, Sport and Culture and Digital Jersey and significant industry based projects, such as those seen at the Digital Hub.

Recommendation:
Through assessment of appropriate statistical monitoring and dialogue, the Ministers for Education, Sport and Culture and ED must work together to help support the growth of the digital sector and achieve associated local employment opportunities.

Recommendation:
Where inward migration occurs, it should be specialised in nature.

7.3.6 How does the Island's Digital Vision Compare with Elsewhere?

7.3.6.1 The very background to the development of Thinking Differently, including the IoD debate and Digital Picture report in 2102, indicated that Jersey is not alone in recognising the opportunities presented by continually evolving technology, and the need to develop appropriate skills to seize them. As previously mentioned, Malta and Estonia are often cited as particularly clear examples. This situation has been reflected in a number of pieces of evidence and research we have considered, and was acknowledged by a number of stakeholders, including:

'Chief Officer, Economic Development:
Malta is a very, very good example of a jurisdiction that really has taken the development of I.C.T. (Information and Communication Technology) in the digital sector within education very seriously. They positively discriminate, for instance, in favour of people going to university to study computer science. So they give them larger grants by virtue of the subject they do,

because that supports the development of their economy and that is another element of their education system that they are using very much to guarantee their future.'[57]

'Minister for ED:

We should never forget incidentally that Jersey is not alone and not the ones that thought up this idea of a digitally enabled economy. There are many others doing it and they are doing it rapidly so we cannot stand still and there will be a requirement to bring in specialist skills to pump prime the industry.'[58]

'C5 Alliance:

We have indirect experience with other jurisdictions although Malta would make a good comparison. With approximately 300 skilled resources going into the Digital industry each year from education versus approximately 20 per year currently in Jersey, Malta is more advanced with its digital skills initiatives and incentives. These include tax breaks, adult education schemes, digital divide schemes, Internet access and significant investment in further education. Malta has been developing a talent stream over the last decade to the extent that the C5 Alliance Group currently outsources some work to Malta where we have capacity constraint and it makes sense.'[59]

'C.E.O., Digital Jersey:

If you look at Malta's growth they have been at this for around 10 years and they started off at a similar low base in terms of activity, employment within the digital sector. When we meet our 2020 targets we will have overtaken them if they continue at their current rate of growth and they have earned a lot of money doing that…I think Jersey has some particular advantages based on its relative wealth, its great infrastructure, its social capital and the financial services sector and there are some investors here. This is achievable.'[60]

7.3.6.2 As Appendix 2, we attach a Scrutiny Office report compiled that illustrates further notable examples of the work undertaken by other countries in this area.

7.3.6.3 There have been some views expressed to us that challenge the extent to which Jersey might be 'behind the curve' in this area. Digital Jersey and the Minister for Economic Development are confident in Jersey's ability to emulate related success in places such as Malta. Furthermore, the Assistant Minister for Education, Sport and Culture also told us:

[57] Transcript, Public Hearing, Minister for Economic Development, November 2013
[58] Transcript, Public Hearing, Minister for Economic Development, November 2013
[59] Written submission, C5 Alliance
[60] Transcript, Public Hearing, Digital Jersey, November 2013

*'…this guy from Raspberry Pi (*who attended the launch of the Thinking Differently*) came here and said: "This is fantastic." He was talking to the U.K. Education Department and he said: "If you go to Jersey, there is a great contract of what has been announced in England. They have £6 million for 100,000 people the size of Cambridge. They have fibre to the door, they are linking to businesses" and he mentions the £2 million budget for the training of the teachers and he said: "That is virtually what is being spent on the whole of the U.K., 53 million people" it is within the £6 million. So I think that sort of validates where people perceive us to be and that is somebody that has come here from the U.K. I equally went to Malta to see what they had done, because everybody was saying that Malta was leading the way, and I found it was far from it, to be fair. The thing that was interesting that was different was they had a college there, an I.T. college. They did not differentiate who came into the college, most of the people, and that was started by a 21 year-old who got his first I.T. G.C.S.C. (General Certificate of Secondary Education) there, his first A-level there and just decided that is what he wanted to do; he was 21 at the time. Everybody left with virtually a first class degree but now the island has seen themselves as being a bit more competitive and spread it out a little bit. But certainly looking at them and looking at what they were doing we were ahead of it. Certainly with things like Gigabit and Digital Jersey we were ahead of it. I remember a discussion with the Education Minister where I was describing some of the things we were doing in the schools and she just turned to me and went: "How do you do that?" and I just thought that was a telling comment really that we were quite far advanced without people really knowing too much about it.'*[61]

Finding:

Jersey is not alone in recognising the opportunities presented by continually evolving technology, and the need to develop appropriate skills to seize them. Malta and Estonia are often cited as particularly clear examples and are demonstrably more advanced than Jersey in delivering associated strategies.

Recommendation:

The Minister for Economic Development must continue to be highly attentive of the work of other jurisdictions pursuing digital initiatives (economic and social), in order to help inform and shape how Jersey can become a recognised world presence as a digital economy and society.

[61] Transcript, Public Hearing Minister for ESC, June 2014

8. DIGITAL SKILLS: CHALLENGES FOR E-GOVERNMENT

8.1 Introduction

8.1.1 The Sub-Panel has not set out to review the e-government project itself, this being beyond our remit of examining digital skills and, as such, was not included in our Terms of Reference. For context, this section will therefore briefly explain and set out the objectives of e-government, but will focus on the work that is being undertaken around the project regarding the improvement of the community's digital skills.

8.2 Background and Progress to Date

8.2.1 The States of Jersey's e-Government project has a number of target and aims. These include that e-Government will:

- *make online and mobile transactions with the States easier and more cost-effective*
- *make certain data more easily accessible to Islanders*
- *help identify how the States IT budget can be spent more efficiently*
- *strengthen Jersey's IT industry as local firms supply e-Government services*
- *encourage innovation and cooperation between government, business and the public*
- *increase our online / digital interactions with Islanders from 7.5% to nearer 75% by 2018* [62]

8.2.2 The main pillars that the project is built around are outlined as customer personalisation (giving customers a choice of service channels) and:

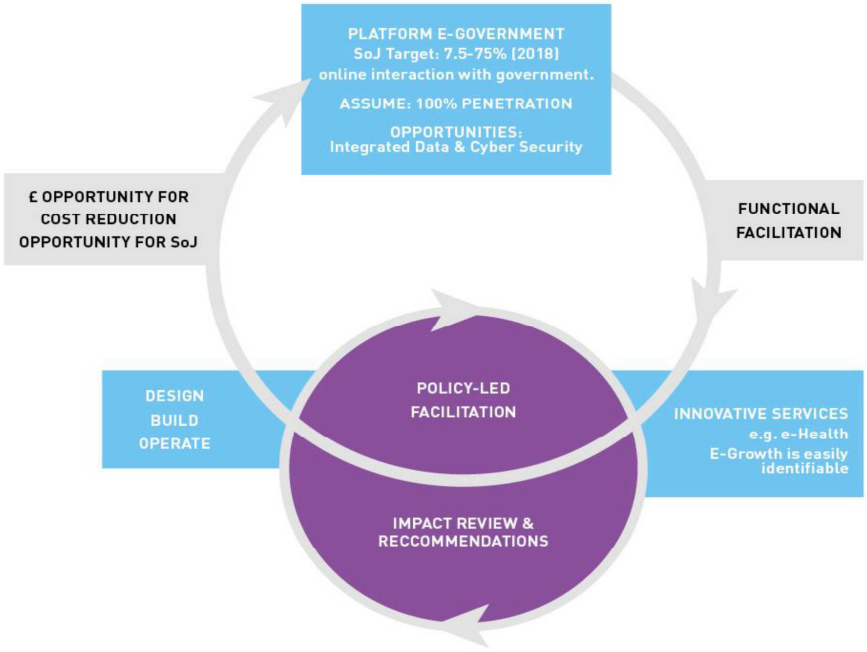
- *operational effectiveness - secure data sharing, joined up working and mobile working*
- *trusted identity - customer digital ID and single sign-on*
- *enabling infrastructure - fast and efficient digital communications and an integrated portal*[63]

8.2.3 As part of its responsibilities, Digital Jersey is tasked with a significant role in helping to develop and improve digital skills throughout the community that will enable the States to reach its objectives. Its 'Developing a Digital Jersey' Strategy features its social responsibilities, associated aims regarding community skills, and e-Government as a specific project – including its wider economic opportunities. Illustrating this position, the Strategy states, for example:

[62] MyStates, Public Sector Reform
[63] MyStates, Public Sector Reform

*'**7.5. The development of e-government is essential***

Sustained growth in many digital jurisdictions is closely linked to strong government support and a move to an effective e-government platform providing services to residents. This also provides opportunities for economic and societal benefits through the delivery of innovative services. Digital Jersey strongly supports the States of Jersey's reform programme and the planned development of an e-government platform. In its early stage in 2013, this, along with 100% fibre connectivity, will propel Jersey to the premier league of jurisdictions with regards to network readiness. Furthermore, it will link the population more closely to the digital sector.



The delivery of e-government in the States of Jersey presents a significant opportunity for local IS/Digital Suppliers to participate in the delivery and long-term maintenance of those services, stimulating the economic and skills growth of the local industry. Digital Jersey is collaborating closely with the States of Jersey to ensure that the skills and capacity necessary are available locally to provide support for this programme. Additionally, Digital Jersey will be marketing the Island to companies providing services in this area, as an attractive market for investment and development.'[64]

8.2.4 Lead political responsibility for the wide-ranging States modernisation programme rests with the current Minister for Economic Development. This includes e-Government, for which the Chief Officer of the Economic Development Department is leading from the civil service point

[64] Digital Jersey, Developing a Digital Jersey

of view. At a Hearing with both held in May 2014, the Sub-Panel sought an update about progress to date. The Minister for Economic Development explained:

'It is probably fair to say that e-government is at the heart of a reform programme… where we start from is a very low base point insofar as in terms of digital interactions between Islanders and government only 7.5 per cent are currently carried out in a digital form electronically. The aspiration is to move to 75 per cent, so there is a great deal of room for improvement in the way in which we operate. With aspirations to become a digital Island and for it to develop as an important part of our economic sector, economic fabric, and to be an important sector, it is clearly essential that Government leads in that regard. So I am pleased to say that, first of all, my Chief Officer is leading on the e-government project. Secondly, we have got to a position now where the plan for the rollout of our e-government programmes within the overall reform programme has now been approved, both the funding and the vision, and that plan is now beginning.

Chief Executive Officer:

'the funding for the delivery e-government, which as the Minister said has been signed up by the Council of Ministers, comes entirely from the public sector reform restructuring budget, and the total figure required for phase 1, which creates all of the enabling infrastructure and puts in place the first tranche of services that will be delivered across that, is in the order of £7 million, which is entirely funded from, as I said, within existing resources in M.T.F.P. 1. There is an ongoing longer term requirement which will be subject to inclusion of a bid into the second phase of M.T.F.P. 2 which covers the period 2016 to 2019, and that was fully outlined in the papers that went to the Council of Ministers and effectively signed off on that basis.'[65]

8.2.5 The Chief Officer confirmed that one of the social objectives from Developing a Digital Jersey, a full service e-government platform by the end of 2016, was incorporated within that £7 million. He added:

'*Just for the avoidance of any doubt, phase 1 puts in place all of that service, so it links existing core systems through an enterprise bus, which allows them to talk to each other, effectively, and then through a single citizen portal whereby citizens will be able to on any device, any form of mobile device, or online or, indeed, still on a face-to-face basis be able to access all government services. The figure that the Minister mentioned earlier of 75 per cent is an adoption target. We want to make sure that in the second phase of the project all*

[65] Transcript, Public Hearing, Minister for Economic Development, May 2014

government services are available online for those who should wish to access them in that way. Of course, there will always be people, particularly in the short to medium term, who will need to continue to access services on a face-to-face basis or email or telephone and that is being provided for in the model.'[66]

Finding:
Presently only 7.5 per cent of interactions between Islanders and government only carried out in a digital form electronically. The States aim to increase digital interactions with Islanders to nearer 75% by 2018.

Finding:
£7million is available under current funding for delivery of Phase 1 of the e-government programme, including the establishment of a full service e-government platform by the end of 2016.

Finding:
Phase 1 of the e-government programme links existing core systems through an 'enterprise service bus', allowing them to talk to each other. This establishes a single citizen portal whereby citizens will be able to digitally interact with the States.

Finding:
Tell Us Once is a core objective of e-government and will require Phase 1 to deliver the necessary capacity for States IT systems to effectively and appropriately talk to each other.

Recommendation:
To help the success of the highly important 'Tell Us Once' principle, individual departmental IT systems and strategies should be subject to validation by a central co-ordinator to ensure compatibility.

Finding:
There is an ongoing longer term funding requirement for the second phase of e-government between 2016 and 2019 which will be subject to a successful bid from the next Medium Term Financial Plan.

[66] Transcript, Public Hearing, Minister for Economic Development, May 2014

Recommendation:

It is imperative that the Minister for Economic Development secures the required funding in the next Medium Term Financial Plan to keep momentum behind the e-government programme.

8.3 Recognising and Addressing Challenges

8.3.1 The Chairman of Digital jersey set out to us what he saw as core challenges that would need to be overcome for the e-Government project to succeed:

'We know that…so that we avoid any creation of a digital divide, that e-government capabilities is essential, as is training and preparing the population to use them effectively, which is the skills to use them, but also the connectivity so that you can connect and then the equipment that you will need to do that'[67]

8.3.2 Those key challenges of community digital skills and connectivity were commonly recognised during our evidence gathering, and are addressed below.

8.3.3 Improving the Community's Digital Skills

8.3.3.1 There is clear confidence amongst the stakeholders that we heard from that the target of increasing online/digital interactions with Islanders from 7.5% to nearer 75% by 2018 was very realistic and should be achieved in the relatively short to medium term. This confidence was illustrated by the Minister for Economic Development, who explained:

'…experiences elsewhere in other jurisdictions demonstrate that up to three-quarters would, if they could, and that is why the target is 75 per cent. The problem we have here is that we as government do not get the opportunity, as we have touched on before. As time passes the numbers that are enabled and have the capability and technology to access services if they were available online, is increasing all the time. I think we have got a huge amount of progress that we can make simply by, from our side of the fence, allowing bookings online, and, you know, tax returns online and all the other bits and pieces.'[68]

[67] Transcript, Public Hearing Digital Jersey, November 2013
[68] Transcript, Public Hearing, Minister for Economic Development, November 2013

8.3.3.2 The Chief Officer ED further informed us:

'…in the phase 1 e-government work that was done, which has very much informed the formulation of the e-government business case which has now been approved, there was quite a broad customer consultation, voice of the customer consultation, which was undertaken by a company called Atos…What we see is that 83 per cent of the people that we spoke to wanted to be able to access government services online. At the moment, we have an infrastructure that really is only allowing about 7.5 per cent of our interactions to be digital…the vast majority of people said: "We want to be able to access government services online." Businesses, strikingly, if on a day-to-day basis they did not have to speak to a human being in order to interact with government in terms of all of the things that they have to do, they would be very, very happy.'[69]

8.3.3.3 Nevertheless, it is recognised that failure to try to improve the digital skills of those who are not equipped to automatically be able to access such services or likely to 'organically' progress to that position might exacerbate digital divide. It may further disadvantage already vulnerable groups and indeed could undermine major objectives such as growth of e-health, as many of the very people such innovation may be targeted at (e.g. elderly) could be unable to engage with an electronic platform through lack of skills, knowledge or even access to hardware. The risks were outlined to us by a number of stakeholders, including:

Chairman, Digital Jersey:

'…(approximately) 40 per cent of Jersey's population is…in the older age bracket so if you are going to get up to that overall 75 per cent of interactions being e-interactions then you have got to engage and facilitate that 40 per cent to participate with the Government electronically…this goes back to the Social Working Group. We are really looking at, how do you involve and take these capabilities to more vulnerable groups, older people that cannot get out of their homes, looked after by carers. There are lots and lots of opportunities for digital solutions to these challenges… not just for older people but for, perhaps, disadvantaged or vulnerable groups….up-skilling or re-skilling of people generally in the population needs to go hand-in-hand with the e-government initiative.'[70]

[69] Transcript, Public Hearing, Minister for Economic Development, May 2014
[70] Transcript, Public Hearing Digital Jersey, November 2013

Chief Executive Officer, ED:

'We need to make sure that when the portal is there that to the greatest extent possible we can make sure that vulnerable groups can access it, and if they cannot that an alternative way of them accessing the services...the biggest element of e-government, is not technology…The biggest change is cultural in terms of ... and then how we get round to delivering the service off the top of it.'[71]

8.3.3.4 We asked the Minister for Economic Development and his Chief Officer how they proposed to address this particular challenge, and they outlined to us what they saw as the key role for the Parishes. The Chief Executive Officer commented:

'…the Vision for e-Government …says: "Government and Parish working together." We see within the e-government project the Parishes and the Parish halls as absolutely vital components of the way that e-government will interact with your Parishioners…within the context of delivering the vision...there have been some initial discussions between the e-government team and some Parish Constables on this…We are working on that at the moment and what we would like to do is come to the Parishes with a proposal that effectively allows you to upgrade your parochial service but also complement that with a States information service within the Parish Halls. I think that is a win/win for both parties.'[72]

8.3.3.5 The Chairman, Digital Jersey also raised the important role that the Parishes would need to play in this area:

'…the involvement of the Parishes and the Parish Halls and the Constables I think are going to be absolutely critical in achieving some of these targets.'[73]

8.3.3.6 With regard to Digital Jersey, the Chief Executive Officer, ED, outlined the role that the organisation was and would play in contributing to improved community digital skills:

*'**...**since we got the approval from the Council of Ministers, we have had 3 events with industry. All of those events have been jointly organised by Digital Jersey and the e-government team…The idea there is to maximise the proportion of local content in the delivery of e-government. Now, Digital Jersey is playing a tremendous role and it really is starting to motor now in terms of its engagement with the digital sector in the Island, and we*

[71] Transcript, Public Hearing, Minister for Economic Development, May 2014
[72] Transcript, Public Hearing, Minister for Economic Development, May 2014
[73] Transcript, Public Hearing Digital Jersey, November 2013

have had tremendous turnout catalysed by Digital Jersey and their membership. They are playing a very, very key role in the rollout. Paul Masterton sits on the e-government steering committee which I chair…He has provided very valuable input, as have some of the other board members, to the development of e-government. We see Digital Jersey and the development and rollout of e-government as absolutely key from that perspective. Some of the work that they are starting to do as Digital Jersey in terms of helping develop skills not to use the e-government platform but helping develop it through coding, for instance, is growing and growing and growing. They are having coding courses for women, coding courses for children, right across the piece and it is hugely valuable.'[74]

8.3.3.7 Digital Jersey, as we have detailed earlier through examples such as the Digital Hub and a significant number of other initiatives is actively engaged in promoting digital skills improvement. Whilst this is certainly helping towards the '75%' target, Digital Jersey does recognise that it may need to further develop initiatives and plans to help those that fall into the 25% bracket. The Chairman of Digital Jersey commented:

'I think it is fair to say that our business plan and strategy does not have a lot of depth around general skills development in the overall population…we recognise that there is work for Digital Jersey to do in this area and frankly not just for older people but for, perhaps, disadvantaged or vulnerable groups…we have just launched a small working group to look at what I describe as our social agenda as Digital Jersey and, again, we have got a cross-section of people participating in that. The objective of this working group is to make recommendations to Digital Jersey as to how its social objectives should expand, and this will clearly be part of it.'[75]

8.3.3.8 He continued:

'I sit on the e-Government Steering Committee that is led by Mike King…We know that, again, so that we avoid any creation of a digital divide, that e-government capabilities is essential, as is training and preparing the population to use them effectively, which is the skills to use them, but also the connectivity so that you can connect and then the equipment that you will need to do that.'[76]

[74] Transcript, Public Hearing, Minister for Economic Development, May 2014
[75] Transcript, Public Hearing Digital Jersey, November 2013
[76] Transcript, Public Hearing Digital Jersey, November 2013

8.3.3.9 ESC outlined to us that it saw it playing a very limited role addressing the 25%, but that the Department would play a notable part in helping contribute towards the 75%:

Director, Education, Sport and Culture:

From a department perspective, our only engagement would be at Corporate Management Board (C.M.B) level when we are involved in the development of the overall e-Government strategy which comes to C.M.B. and obviously to the Council of Ministers…We would not have a specific role as an education service in ensuring, for example, that 25 per cent had access to the technology that they may need to use e-Government services. I think there needs to be a general recognition that this is not something that will happen overnight; it will phase in over a long period of time…

8.3.3.10 He continued:

'...There will always be, at least perhaps for the next 10 to 15 years, a need for other methods to be available for people to access government services.

The Minister for Education, Sport and Culture:

I think there will always be a percentage that does not access government services online, even say your whole of your 25 per cent is at some time in the future going to go down to zero, there will always be a need for alternative ...

Director, Education, Sport and Culture:

These things naturally shift. If you think about it, if you looked at the Annual Social Survey that has come out of the last few years, you will see an increase in the number of people who have level 2 qualifications in the community…I think at some stage people will become so used to accessing services through an e-Portal, you will have a very small percentage that do not.'

8.3.3.11 Indeed, it was stressed to us by the Chief Executive Officer, ED that it was not the intention to force people into exclusively using e-portals, and that the States recognised the need for continuing to provide services in the more traditional way for those members of the community who were unlikely to want or be able to access e-services:

'…we must not make the assumption…that everything can be done by everybody digitally from day one. Not going to happen; cannot happen because that just is not human nature

from the perspective of our position. So we are going to have to ensure that people who are not for whatever reason able to access the internet - or even if they can, unable to use it effectively - have the ability to be served face to face or via telephone or the traditional channels. Through time, obviously, there will be a requirement to increase that adoption and I think it will become easier through time. This may be a generational thing that more and more people will be...able to get those services online because that is what they will always have been used to in their day-to-day life. But in the short term, it is going to be very important that we have a facility whereby we can help and assist people to get them to understand what is and what is not available, how it can be used, on an individual basis.'[77]

8.3.3.12 It was explained to us by the Director ESC where the Department saw itself playing a part in contributing to the States e-Government '75%' target, notably through the skills that could be taught through Highlands and those that would be taught and encouraged amongst young people through the Education service:

'Helping them develop their skills is part and parcel of the overall skills strategy which the education service really is one of the lead players on, so there is no question about that.'[78]

8.3.3.13 Amongst the wider community, the Assistant Minister for ESC added:

'…the one thing that we have not mentioned is the library and the considerations and initiatives they are considering there. At the moment you can get wi-fi and they are teaching E.C.D.L. (European Computer Driving Licence) in the library and those courses are growing. In fact, we are shifting areas of the library around to accommodate it…you go up on to the first floor, there is an area that is dedicated to computers, whereas instead it was just a small area down the front.

Deputy J.M. Maçon:
Do you have a demographic?

Assistant Minister for Education, Sport and Culture:
Yes, the demographic is quite wide. I was up there the other day to talk to Ed Jewell the new librarian. In fact, the consideration I had asked him to consider, or what I wanted him to look at - there is a sort of a passport into the wi-fi system - is to take that off and see if we can get wider re-access to wi-fi in that area for that demographic reason so people could just simply

[77] Transcript, Public Hearing, Minister for Economic Development, May 2014
[78] Transcript, Public Hearing Minister for ESC, June 2014

walk in and use what they have got. So it is one of the things that he is looking at at this moment in time.'[79]

Finding:
There is confidence amongst the stakeholders that the target of increasing online / digital interactions with Islanders from 7.5% to near 75% by 2018 is very realistic and should be achieved in the relatively short to medium term.

Finding:
To help the 25% not accounted for by the States e-government interaction target of 75%, the need for digital skill development initiatives and plans is recognised.

Finding:
To avoid creation of a community digital divide it will be essential to train and prepare the population to use the e-government platform effectively, both in terms of skills and connectivity.

Finding:
Digital Jersey has a particular responsibility through its social objectives to address digital divide concerns for the whole community, not least the '25%' group.

Finding:
Digital Jersey has accepted that its business plan and strategy does not have adequate depth around general skills development in the overall population and is working to address this situation.

Recommendation:
The Minister for Economic Development should ensure that Digital Jersey adds adequate depth around general skills development in the overall population, including the more vulnerable groups, to its business plan and strategy.

[79] Transcript, Public Hearing Minister for ESC, June 2014

Finding:
The States also have a responsibility towards the '25%' group and aim to undertake associated education and infrastructure provision through libraries, Highlands College and the Parishes. The States will also continue to offer traditional platforms for service delivery.

Finding:
The involvement of the Parishes will be critical in achieving some of the targets regarding e-government, particularly for vulnerable sections of society.

Recommendation:
There is a need to ensure that the States and Parishes work in unison and with sufficient resources to achieve provision of the required community support for e-government, so that it can be successfully implemented without creating a digital divide.

Finding:
Failure to improve the digital skills of the 25% might exacerbate digital divide and may further disadvantage already vulnerable groups in turn undermining major objectives, such as the growth of e-health.

8.3.4 Connectivity

8.3.4.1 To a considerable degree the success or otherwise of the e-Government project is reliant on strong connectivity - a reliable, efficient, wide-reaching infrastructure. Key to this are the wireless network coverage and, perhaps more long term, JT's £40million Gigabit Jersey project replacing the current copper network with fibre.

8.3.4.2 A written submission received from JT in December 2013 updated the Sub-Panel about the project outlining the following points with regard to Gigabit Jersey by that point:

'…JT is two years into a five year programme to provide a ubiquitous fibre network for the island of Jersey which will provide the infrastructure necessary to allow educational establishments, businesses and consumers to connect to internet devices at high speeds of up to 1Gbps (and, indeed, higher in future years as the equipment at either end is upgraded). JT's Gigabit Jersey programme is very much a facilitator in providing the underlying network

that is essential to supporting such initiatives and applications as e-learning, e-government and e-health.

The fact that every broadband connection on the Island will be provided over fibre means that where once the extent of access to online skills and learning materials would be limited, by the legacy network in place, this will no longer be the case. Fundamentally, this applies not just to Digital Skills but to skills and education generally, however in the case of the Digital Skills agenda specifically, it is fair to say that without the appropriate connectivity it would be significantly hampered, if not impossible to achieve. Digital Jersey has ambitions for "a connected society" which it defines in its Developing a Digital Jersey strategy document as:-
one where individuals benefit from easy and low-cost access to digital technologies and the skills to use it."[80]

8.3.4.3 It continued:

'JT's Gigabit Jersey programme will deliver the "easy and low cost access to digital technologies" and it should be in Education's remit to develop the necessary skills to use it. This aligns with the terms of reference attached to the Digital Skills Review specifically terms 1, 2, 3, 5 and 6. JT has already installed its fibre network in the majority of schools in readiness for Education's tender to provide a new IT network for schools. It is anticipated that JT will have completed the installation of the fibre network for the remaining educational establishments by the end of January 2014.

At the time of writing, the Gigabit Jersey programme has connected 6,269 homes to fibre and as more homes are connected the families and children living in them will gain further benefits of being able to access educational tools from home. JT fully supports the adoption of modern technology and new methods of working that the technology will bring. Jersey should embrace the benefits that this will bring to the island and its community and encourage adoption of new technology."[81]

8.3.4.4 It might be noted that by August 2014, JT had installed fibre to all schools and had connected its 10,000th home.

[80] Written submission, JT
[81] Written submission, JT

8.3.4.5 Speaking to the Minister for ED and his Chief Officer about connectivity at a hearing in May 2014, the Sub-Panel was advised that whilst the Gigabit project was very important looking ahead, in the short term connectivity was already strong and not a blockage to achieving positive short term results for the e-Government project. The Minister for Economic Development said:

'…in terms of connectivity, never mind Gigabit, I think it is fair to say that the Island has very good connectivity. In terms of what we are trying to achieve with this particular project, there is a very wide take-up of connectivity within the Island. Clearly, Gigabit is another step. It is moving the speeds up dramatically.

Chief Executive Officer:

I think it is probably fair to say…for basic government services you do not need 100 megabit or a gigabit of connectivity. Most of the services that will be provided online are effectively web-based. So the type of connectivity, a 2mb connectivity that will allow basic web browsing is really all that is required. If we move on, which hopefully in time we will, to some of the more advanced e-health type applications where you are moving quite a lot of data between people's houses and the system, then that requires some perhaps higher levels of connectivity.'[82]

8.3.4.6 Asked by the Connétable of St. Mary about connectivity for those within a demographic that may struggle to secure connection opportunities routinely if at all at home, the Minister explained how this sort of barrier was and could be overcome:

'…the high majority of mobile devices obviously have internet access on a mobile basis, so it is available…

The Connétable of St. Mary:

We talked about this on a school level where we talked to some teachers who say that 50 per cent of their class do not have any access to the internet at home through any kind of device. We talked about that from the digital divide of how they are going to bring the digital skills into the schools. Obviously, that must apply, the same divide applies for the parents who are accessing or not accessing e-government.

[82] Transcript, Public Hearing, Minister for Economic Development, May 2014

Chief Executive Officer:

That is why it is vital to have public access through the Parish halls, through the libraries, through other public sector areas, where people can come to the technology and access e-government in that way. If they do not have the devices at home, that is a viable alternative to allow people to access the services."[83]

Finding:
In the short term, most e-government services will be provided online and require insubstantial connectivity to enable basic web browsing.

Finding:
More advanced e-health type applications will require higher levels of connectivity, which should be assisted by infrastructure initiatives such as Gigabit Jersey.

Finding:
In implementing its Gigabit Jersey programme, JT has installed its fibre network to all schools in readiness for Education, Sport and Culture's tender process to provide a new IT network for schools and to over 10,000 homes.

Recommendation:
If not achieved already, the Minister for ESC will need to provide necessary impetus and resources to make sure that all schools connect to the fibre network now available to them at the earliest possible opportunity.

[83] Transcript, Public Hearing, Minister for Economic Development, May 2014

9. APPENDIX 1 – EVIDENCE CONSIDERED

9.1 The following documents are available to read on the Scrutiny website (www.scrutiny.gov.je) unless received under confidential agreement.

Written Submissions:

- Beaulieu School
- C5 Alliance
- Chartered Institute for IT (BCS)
- Chief Minister
- Data Protection Commissioner
- De La Salle College
- E-scape Ltd
- Foreshore Ltd
- Haute Vallee
- Hautlieu School
- Highlands College
- Jersey Finance
- JT
- Library Service
- Minister for Health and Social Services
- Minister for Social Security Sec
- Minister for Treasury and Resources
- NASUWT
- Skills Jersey
- Victoria College

Public Hearings:

- Digital Jersey: 26th November 2013
- Minister for Economic Development: 26th November 2013 & 19th May 2014
- Minister for Education, Sport and Culture: 26th November 2013 & 9th June 2014

Site Visits:

- ESC Inspire Day Seminar
- Beaulieu School
- Les Quennevais School
- Rouge Bouillon School
- Plat Douet School
- St Martin School

10. APPENDIX 2 – COMPARISON REPORT

'To compare the Vision for IT in Education to related strategies developed in other relevant jurisdictions'

In considering the various projects below close attention was given to the outcome aims identified in 'Thinking Differently' as follows:

- Making learning more relevant and engaging
- Enabling children to be innovative, think creatively and work collaboratively with others
- Providing students with the freedom to discover and develop solutions for themselves and enable teachers to rethink the way teaching is organised

During this research it became clear that Jersey is not alone in its recognition and vision for children to have increased and meaningful exposure with ICT and opportunities to develop their technology skills. Thus many schemes and projects are in their infancy due in part to the speed at which technology, both hardware and language, are evolving. A number of projects created and delivered in the past 5-10 years, have become outdated and/or do not have the ability to adapt to an ever-increasing number of smart devices, the environment in which these devices are used or are no longer culturally relevant to their users. This creates the challenge of future proofing projects so that investment is not short lived but continues and evolves with technology and its users.

ProgeTiiger – Estonia

Estonia is a small country of just 1.3 million, the birthplace of Skype and a fully e-enabled government, which has embarked on an ambitious plan to teach all children aged seven to 19 how to write code. The initiative, launched in 2012, began with specialised teacher training and a pilot of 20 schools, with the aim of introducing children to coding from a young age, not to create a future generation of coders, but to foster smarter interaction with technology, computers and the Internet. The project is now available to all Estonian schools and information packets are available freely to all (including those outside Estonia) as an online series of elearning courses to enable others to deliver and learn from the programme. The project is delivered throughout the child's educational career, beginning at the equivalent of Jersey key stage two, and culminating at key stage 4, where students are prepared for higher education in Information Technology. As children move up through the key stages age appropriate learning opportunities are provided. The core aims of the programme are to:

- Develop students' logical thinking, creativity, mathematical skills, etc
- Demonstrate that programming can be interesting and done by anyone
- Teach the basics of programming through practical activity; and
- Teach students to use different age-appropriate programming languages.

Students are engaged with immediate reward output, ie, they are able to view the results of their coding instantaneously. As children progress, more complicated ideas are introduced, but still remain easy to access, retaining instant reward, ie the use of Lego Mindstorms, which involves the programming of a Lego robot. Design of website and web applications is introduced from key stage 3.

The Flipped Classroom - Global

This innovative idea was created, accidently, by two American chemistry lecturers who began recording classes, to post online, for students who had missed lessons. However, students who had been present in the lesson reported they were also accessing the online content, to reinforce what they had learnt and bring questions back to class, consolidating their learning. From this evolved the idea of reversing or 'flipping' the traditional learning in class, followed by homework, to delivering the lesson online, to be viewed at home/outside class times, and using the classroom environment to work through problems and engage in collaborative learning.

The success of this method is the ability for students to approach self-directed learning in a way that feels natural to them as individuals. Struggling students are easier to identify and support and advanced students have more freedom to learn independently. The pioneers of the program report better relationships with students, greater student engagement and higher levels of motivation. Furthermore, collaboration is not restricted to class discussion, but can also be expanded to a blog inside a Virtual Learning Environment or class Facebook or twitter account encouraging continuing discussion and sharing.

The method is gaining popularity globally (Singapore's recent 2013 Excel Fest winner Beacon Primary School is an advocate) and being cited as a new trend in education. Currently the technique appears to be mainly practiced in the US with significant successes being reported. A school in Detroit recently published improvement in learning using the method with 50% of Freshmen (equivalent to Year 10/11) failing English and 44% failing maths, prior to the introduction of the Flipped Classroom as opposed to 19% failing English and 13% failing

maths, once Flipped Classroom had been introduced. There was also a considerable fall in disciplinary incidents.

Active Explorer - America

Created by business partnerships (The American Association for the Advancement of Science (AAAS) , Qualcomm's Wireless Reach initiative and mobile virtual network operator Kajeet) this project, launched in 2012, was devised to engage children in STEM learning with mobile technology that most children would have access to. A study in America showed that although the Internet may be available at home, it was commonly for the use of the entire family, making it difficult for children to be able to gain access when required. 68% of children reported using their smartphone with 3G/4G connectivity to access the Internet even if Internet access was available at home.

The Active Explorer programme leads children on an 'adventure' of self-discovery using smart phones (only android to date) as data collection instruments. The web based portal enables teachers to create assignments without any prior need for technical or other training. Its ease of use has encouraged tutors to expand its use outside of the STEM subjects to the arts, religious studies and humanities. Students use their devices to capture images, draw maps and create videos to complete the assignments and submit them in a variety of formats such as formal slideshow presentations to comic strips. These can then be viewed by other students, discussed online and shared in the classroom.

iShare – Singapore

In 2008 Singapore created its first tranche of 'Future Schools' with the aim of creating educational environments where ICT is a core part of the fabric of learning. The introduction of Future Schools is one element of the Ministry of Education's (MoE) Master Plan, with the ultimate aim for all schools to adopt the same processes and equip the future generations to be leaders in technology.

With a strong focus on ICT there was a need to establish innovative methods, not just to communicate with and deliver lessons to children, but also encourage and teach students how to engage with self-discovery and collaborative learning. This would require teachers to create and deliver lessons using ICT in a variety of formats.

iShare was established as an online repository to enable teachers in Future Schools (now rolled out to all schools in Singapore) to share their digital creations and blog the successes and lessons learnt. Although similar systems are in use in other countries (JORUM in the UK)

content is mainly state owned, tends to have a ‘one size fits all’ design and lacks the flexibility for feedback and real time evolution.

With the introduction of iShare, teachers are able to upload their lesson plans, and other digital content, for download and use by others who are, in turn, able to give feedback on their experiences of the shared lesson/content. This enables an open dialogue which sustains growth, develops content from the ground up and encourages the sharing of ideas and best practice. It has also provided a knowledge base for teachers who were/are less proficient with ICT, to be able to incorporate ICT into lessons whilst developing their own skills and understanding.