TIDE Digital Strategy Report

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TIDE Digital Strategy Report, Version 2
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Transformation by Innovation in Distance Education (TIDE) project enriched distance learning in Myanmar by building the capacity of Higher Education staff and students, enhancing programmes of study, and strengthening systems that support Higher Educational Institutions (HEI) in Myanmar. TIDE was part of the UK-Aid-funded Strategic Partnerships for Higher Education Innovation and Reform (SPHEIR) programme(www.spheir.org.uk). SPHEIR is managed on behalf of FCDO by a consortium led by the British Council that includes PwC and Universities UK International. The TIDE project closed in May 2021
Executive Summary

Digital technologies are rapidly becoming widely available and used throughout Myanmar. Whether supporting personal or organisational use, or as integral to computer based systems that support efficient administration, and effective online teaching and learning, they can support the transformation of higher education in a range of ways.

Digital technologies can offer innovative solutions that support new models for design and delivery of quality education. At the same time, they can introduce new divides, between those who have access to technology and the skills to make effective use of it to support their education and those that don’t. These potential divides need to be taken into account in any digital strategy related to education so that approaches can be followed during a transition to full adoption of digital technology are inclusive.

This document, produced as part of the ‘Transformation by Innovation in Distance Education (TIDE)’ project is intended to inform TIDE project activities and also contribute to Higher Education strategy development and policy making, focusing in particular on the role of digital technologies in distance education, and the need for strategies that are inclusive. The six strategic recommendations discussed in the document are of short term relevance but could also contribute to longer term thinking and influence formulation of the second National Education Strategic Plan (NESP2, 2021-2030).

In summary the six strategic objectives proposed and detailed in this document are:

1. Improve and extend ICT Infrastructure
2. Strengthen DE/HE related systems used by Higher Education Institutions (HEIs)
3. Develop the Myanmar Digital Education Platform to support Higher Education
4. Develop Online learning and Student Support Systems
5. Develop staff to become ‘Digital educators’
6. Develop student digital literacy needed to engage in technology enhanced learning
1. Background

The TIDE project has run two Digital Strategy workshops to date, with representation from a wide variety of sectors including academia, and public and private sector organisations. These workshops took place in February 2019 and February 2020.

There is an expectation that Myanmar should be able to leapfrog stages in the use of digital technologies and be able to innovate in ways that are transformative for the sector and suited to high quality teaching and learning in the future. These workshops aimed to monitor developments in the availability and use of digital technologies and assess their relevance to supporting developments in higher education, focussing in particular on distance education. These workshops also enabled discussion between different organisations. Insights from these discussions has usefully influenced the design of TIDE project activities, and also helped shape the content of this Digital Strategy document.

This process has been supported by a TIDE ICT Working Group, also comprising a mix of stakeholders who have expertise and insight into the use of digital technologies in Higher Education.

The output from these workshops is this digital strategy document, which recommends strategic priorities identified by TIDE, that if followed, should support effective development and deployment of digital solutions for the Higher Education Sector.

The recent Covid-19 pandemic and the subsequent COVID-19 response plan developed by the MoE has highlighted the urgent need to support online and blended models of education, through development of digital literacy skills, effective online pedagogy and wider access to high speed Internet. This crisis has informed the final drafting of the strategic recommendations that follow.
2. Context

Current Status

The context in relation to ICT infrastructure and use of social media platforms in Myanmar is rapidly changing, as illustrated by the bullet points in the Box below:

- 39% (21 million) of the population have Internet access and are mobile social media users
- 105% of the population have mobile subscriptions, suggesting many people have more than one subscription
- In the year to January 2019, internet users grew by 17% and mobile subscribers grew by 7.2%, and active social media users increased by 31%
- The vast majority of Internet users were mobile internet users (20.79 out of 21 million)
- The majority of social media users are in the age ranges 18-24 and 25-34
- Literacy levels for males over 15 years old was 80% and females in the same age range 72%
- Almost all social media users are on Facebook, and Instagram and LinkedIn also have significant numbers of users in Myanmar


There is also a gender dimension that is important to consider. Female literacy for those aged over 15, is 72% whilst male literacy is 80%. 30% more men than women own phones\(^1\), and 62% of Facebook users in Myanmar are male, with 38% female\(^2\).

Since the commencement of the TIDE project it is also notable to acknowledge the emergence and growth of a range of private sector companies working to support higher education and e-learning (e.g. 360Ed, Zabai, New Horizon and CCEducare); supporting system development (e.g. ATG solutions, Information Matrix) and innovation (e.g. Phandeyaar); and also the growth of Private Sector Universities (e.g. Metropolitan College, Strategy First University, Imperial College Myanmar and Open University Myanmar\(^3\)).

Within the Higher Education sector, based on information TIDE received from 40 Arts and Science Universities in March 2020, Internet bandwidth on campus ranges from 4MB/s to 300MB/s or higher, and the level of connectivity is increasing annually with support from the Ministry of Education (MOE) and private sector telecoms companies such as MPT. This highlights a digital divide across Universities where typically those in large towns and cities have better access to technology and the Internet, than those in smaller towns.

Among these ‘Arts and Science’ Universities which support distance education, access is typically available in the Rectors Office, Administrative offices and within Libraries. There is little Internet availability in Academic Departments, which often only have one computer and in some cases an Internet connection that is very slow, though in some Universities this is changing. In rare cases students have Internet access beyond the library. These differences

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3 This is not the proposed Myanmar National Open University, but a private sector initiative https://openuniversitymyanmar.com
in technology and Internet access on a campus, reflect a second level of digital divide in terms of what staff and students can access. Staff and students typically have mobile phones and access data services on their phones but at their own cost, and with limited use of these devices to support teaching and learning. Digital literacy skills among staff and students are limited. Only a small number of these Universities are making use of Online Learning Platforms.

Computer Science and Information Technology Universities have, as would be expected, made faster and more extensive use of digital technologies in their ‘face to face’ teaching and learning, and also to support e-learning. UT-YCC has developed an e-learning training programme that it offers to participants from some Arts and Science Universities. Computer Science Universities are making use of the MOODLE platform, and also engaged in developing their own Student Information Systems. They are also playing a major role in developing students for the ICT sector, and for example in the case of UCSY they are training some students on how to support the MOODLE platform.

The process of collaboration between Computer Science, Technical and Arts and Science Universities is being encouraged by the TIDE project, as an approach that can help the latter more rapidly develop online courses, but this is at a very early stage. In July 2020, in response to the Covid-19 pandemic, and the urgent need for Universities to support online modes for delivering education, UCSY has been leading a National training initiative to train teachers from all 162 Universities in use of Learning Management Systems (LMSs) focussing on MOODLE.

Since December 2018, Yangon University of Distance Education (YUDE) and Mandalay University of Distance Education (MUDE) no longer offer undergraduate distance education degrees through the Arts and Science Day Campus Universities. The latter now have responsibility for their own distance education students, under what has become referred to as the ‘One Campus Two Systems’ model. This model mixes a traditional distance education approach, with 10 days of face to face exam preparation just prior to the examinations. YUDE and MUDE continue to have their own undergraduate students, currently studying the established range of degree courses. Alongside this they are developing plans for short online postgraduate certificate courses.

Project Initiatives

Over the last few years a range of projects and initiatives have been launched which are relevant to understanding the changing context in relation to use of digital technologies. These are now briefly described:

**Education Management Information System (EMIS, [http://emis.moe-st.gov.mm](http://emis.moe-st.gov.mm)).** EMIS has been developed with support from UNESCO’s Capacity Development for Education (CapEd) programme, and is a system hosted on servers in Office 21 of the MOE in Nay Pyi Taw. The EMIS ([see https://youtu.be/tQ3brKNhBwM](https://youtu.be/tQ3brKNhBwM)) is developing a range of services, built initially around a school mapping system gathering data at the school level, to support policy makers. There are aspirations for EMIS to also support higher education.

**National Institute for Higher Education Development (NIHED):** This new institute currently under development, whilst not having a specific focus on digital education, will support HE capacity development and related change management initiatives. The project is being led by British Council Myanmar.

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4 Bago University use Open Edx, Dagon University are developing use of MOODLE, and YUDE make use of MOODLE
5 Such as University of Computer Studies Yangon (UCSY), University of Computer Studies Mandalay (UCSM), Myanmar Institute of Technology (MIIT), and University of Technology Yadanapon Cybercity (UT-YCC)
Myanmar Digital Education Platform (MDEP, http://mdep.moe.edu.mm/index.html). MDEP originated as an idea for supporting online courses and digital services for the HE sector. It has developed with a wider remit to provide such platforms for engaging with teachers and students at different levels of education, and in 2020 it will become possible for the HE sector to make use of cloud based MOODLE platforms.

Myanmar Education Research and Learning Portal (MERAL, see https://www.eifl.net/news/myanmar-education-research-and-learning-portal). MERAL is a project being led by IEFL, to bring together five institutional open access repositories into a national portal that holds ‘journal articles, theses and dissertations, conference proceedings and other research output from Myanmar universities’. It will be built using WEKO 3, an Invenio-based multi-tenancy repository platform, developed by National Informatics Institute (NII) Japan.

Myanmar Research and Education Network (mmREN). mmREN was launched in 2018 and currently connects four Universities in Myanmar and aims to provide connectivity and services to all Myanmar Universities to support collaboration among academics within Myanmar and internationally. UCSY is leading this initiative within Myanmar. (see https://www.tein.asia/sub/index.php?page=1&mc=6010&idx=2260&a=view)

Transformation by Innovation in Distance Education (TIDE, see https://www.spheir.org.uk/partnership-profiles/transformation-innovation-distance-education). This project involves a consortium of UK and Myanmar University partners led by the Open University UK with support from, working primarily with Arts and Science Universities in Myanmar that are involved in the delivery of distance education courses. The project delivers capacity development of academic and support staff, support for development of online courses (based on open licensing approaches) and the platforms for their delivery; and works with stakeholders on the longer term strategy for strengthening distance education. The academic focus for the project is ‘Education for Environment and Sustainable Development (EfESD)’, and there is a strong focus on delivering outcomes that will lead to higher quality distance education and enhanced employability for distance education students.

Other Developments and Insights

A range of potentially scalable uses of ICTs and educational technologies are being explored through TIDE ICT pilots, which involve both Higher Education Institutions (HEIs) and Private sector companies that are developing their roles in providing solutions for the Education Sector. These pilots include making e-library content more accessible to distance education students, gaining experience on setting up and using MOODLE online learning environments, use of Microsoft 365 to transform administrative and student engagement processes, and making use of offline devices such as the Raspberry Pi device to make quality educational resources more accessible.

Due to the Covid-19 pandemic crisis University campuses have been closed since March 2020, with uncertainty whether they will reopen to students in 2020. This has led to an upsurge in interest across HEIs in online solutions to support teaching and learning, indicating a recognition of the need for system wider change. At the National level this has given impetus to the Myanmar Digital Education Platform. Some universities have started to digitise learning resources, and there has been a significant increase in the use of online communications tools such as Zoom and Google Meet to support communications mainly among staff. Some Universities have also recently had Microsoft 365 training and are beginning to make use of the ‘365’ applications tools. A few Universities (such as MUDE)
have had interaction with students on Facebook for some years, and consideration of how to use social media and communications tools is becoming more widespread.

At the 2020 Digital Strategy workshop organised by TIDE and hosted at UCSY, participants identified a growing ranges of software tools, learning platforms and systems, being used:

- **Software Tools and Apps**: TurnitIn, Zoom, Facebook Groups, Sliido, RISE, Microsoft 365, Adobe Photoshop, Google Datastudio, Samba File Sharing
- **Learning Platforms**: MOODLE, Open Edx, Practera, Thinkific, Google Classroom, BigBlueButton
- **Systems**: KBZ Pay, eTekkatho, ACU LMS, APT Cloud, CISCO, Redhat, SIS

Whilst there is no standardisation of choices being made across the HEIs, there is evidence in the private and public sectors of increasing exposure to and use of relevant digital solutions.

Alongside the technological, platform and course development challenges, the capacity development of teaching and support staff is of paramount importance, to take advantage of the educational technologies becoming available, and introduce effective pedagogic approaches. Reaching large numbers of staff in a short time requires scalable approaches, such as training of trainers, and knowledge cascading. These approaches have been used effectively in the TIDE project and the high level Ministry of Education support for knowledge cascading has ensured that Universities have resourced and supported this activity. Developing a cadre of staff who can train others in the knowledge and skills they have gained is a widely approach in development, to create both a multiplier effect that can maximise impact, and also in contributing to sustainable outcomes.

Highlighting suitable online courses can also be an effective strategy. In all cases moving from skills training to uptake and use (skills to literacies), requires policy level support and strategies that provide time, incentive and opportunities to put new skills to use. Access to hardware, software and change management support become very important, if the full value of training is to be realised.

Finally, whilst it is at an early stage of discussion, there is also a growing possibility that a Myanmar National Open University could be launched in the next few years, and this offers the possibility of a specialist HEI emerging, that supports innovative and high quality online learning relevant to the Myanmar context.
Six major strategic objectives are proposed as a result of the monitoring of ICT development in higher education, consultations at the Digital Strategy workshops and other less formal processes for engaging Higher Education Sector stakeholders. These objectives are interlinked as illustrated in the diagram above. A strong ICT infrastructure provides the technical foundations in terms of broadband and mobile connectivity. This enables systems such as the Myanmar Digital Education Platform and Student Information Systems to provide online services to students supporting their learning whilst also offering related administrative functions. Online learning and student support can then be developed efficiently and via user friendly computer or mobile phone interfaces. The systems and services can only be accessed and used effectively if staff and students have the information and digital literacies needed, so skill development for a wide range of academic and support staff and for students is vital if the digital strategy is to achieve the real goal of supporting high quality educational impact.

With investment and progress on all these objectives in the short, medium and long-term, Myanmar can over the next 10 years, work towards a vision of a cutting edge and international standard distance education system that serves the whole Nation, and that makes excellent use of digital technologies and ICT infrastructure.

These six objectives are now introduced and outlined. All recommendations are important, but those marked in green are highlighted as of greatest shorter term urgency to progress in the current Covid-19 context, and those highlighted in orange could be seen as medium term activities:
Objective 1: Improve and extend ICT Infrastructure

Developing a ICT infrastructure that supports higher education and supports inclusive access, involves a range of components, to meet the requirements of HEI management and administration, staff and students.

Developing this infrastructure requires a significant investment from both the public and private sector, and there are already project initiatives (introduced above) that support this work.

When developing ICT infrastructure it will be important to ensure that barriers to learning are not being created or re-enforced by the use of technology and that educational technology is used to remove barriers and increase access.

To address this priority the following strategies are proposed:

| a) | Develop reliable 24/7 power supply across campus, and within hostels at all HEIs  
Make use alternative renewable energy where possible, and provide support for ways of charging mobile phones and devices in rural areas (e.g. solar power) |
| b) | Provide computer and multimedia equipment at all HEIs  
Provide all HEI staff and students (including those with disabilities) with access to computers (i.e. desktop, laptop or tablet PCs to support flexible and online modes of learning). Projectors should be provided in all classrooms and audio-video and video conferencing capabilities should also be available in all classrooms that can support online communications. Multi-media digital learning resources should be accessible on and off campus |
| c) | Improve the bandwidth connections for HEIs  
Develop campus-wide high-speed Internet connectivity across campus for all staff and students, including wi-fi connections for outdoor and classroom access to the Internet |
d) **Develop low cost models of connectivity and special digital services for the HE sector**

Ongoing development of the Myanmar Research and Education Network, to support low-cost connectivity between HEIs within Myanmar and internationally and develop services that support cross campus access to resources that support research and teaching and learning.

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<th>e) <strong>Introduce subsidies for use of mobile technologies for educational purposes</strong></th>
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<td>Develop widespread affordable access to 4G and 5G telecoms services with low or no cost data for students and University staff accessing core educational services, systems and resources. This will support both inclusion and more flexible off campus work and study arrangements</td>
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<th>f) <strong>Develop a network of accessible Digital Learning Support Centres (DLSCs),</strong></th>
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<tr>
<td>These centres should be well equipped with ICTs and high speed Internet access, so that those living in rural areas can access online and distance learning and support services provided by HEIs</td>
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**Objective 2: Strengthen DE/HE related systems used by HEIs**

Current systems at many HEIs rely mainly on manual processes with some use of spreadsheets and word processing. Overall strengthening of the HEI landscape, to support online and blended learning and efficient administration requires development of a range of systems at the National and HEI levels. Collaboration, interoperability, and shared standards provide a basis for cost effective solutions that can benefit a wide range of HEIs. Systems should be developed that are mobile-friendly, and inclusive for students who are disadvantaged. Services offered to students and staff should be accessible on a mobile device, and in particular distance education students can access relevant data without needing to visit an HEI campus.
The following objectives are proposed:

<table>
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<th>a)</th>
<th>Ongoing development of the National EMIS which provides the main data centre for Higher Education</th>
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<td></td>
<td>EMIS covers all levels of Education and provides data that can support National policy making and planning. This data includes staff information, exam results including matriculation. The initial focus has been on schools, and it will be important to include data related to HE level students. EMIS should support interoperability with for example Student Information Systems (SISs) and Learning Management Systems (LMSs) used by HEIs</td>
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<th>b)</th>
<th>Develop Student Information Systems (SIS) at HEIs</th>
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<td></td>
<td>The SISs’ should provide full records for campus based and distance education students registered at a particular HEI, from application, through registration and course study, on to graduation and alumni records. SIS’s used at different HEIs are likely to have broadly similar requirements, so a common solution that is capable of being adapted to individual HEI need is proposed. SIS’s should also support interoperability with the National EMIS and the LMSs used at the HEIs. The registration component of the SIS should interoperate as necessary with financial systems, so that students who have paid their fees have access to relevant courses and services.</td>
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<th>c)</th>
<th>Develop HEI financial systems linking to processes for online payment and registration</th>
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<td></td>
<td>Secure systems for online payment of fees and course registration need to be developed. Online payment systems have already been launched, and further development to integrate this process to SISs used at HEIs is proposed. Currently financial systems are centralised and HEIs exchange relevant spreadsheets and data. To support HEI autonomy effective ICT based financial systems need to be introduced that link to the HEI SIS, and interoperate with MOE / MOF systems to meet any central requirements.</td>
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<th>d)</th>
<th>Encourage collaboration between HEIs to share systems</th>
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<td></td>
<td>Collaboration between Computer Science and Technical Universities with Arts and Science Universities within the same cities and towns (and Nationally) should be encouraged so that systems and expertise that support cost effective delivery of online and blended learning courses can be shared. Such collaborations can also support the development of new courses that combine development of digital skills with other subjects. Collaboration also decreases the likelihood of duplication and 'reinventing the wheel' in different Universities.</td>
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Objective 3: Develop the Myanmar Digital Education Platform to support Higher Education

The Myanmar Digital Education Platform (MDEP) was launched as a National initiative in 2020, providing a rapid response to teaching and learning needs in the face of the Covid-19 crisis which resulted in campuses being closer.

MDEP is focusing initially on the Basic Education sub-sector. There is potential for MDEP to support other sub-sectors including all levels of Higher Education and support for lifelong learning. The strategies outlined below, focus on the ways in which MDEP can be developed as a National level ‘service provider’ to support Higher Education and in particular Distance Education.

The following objectives are proposed:

a) **MDEP develops a range of mobile optimized online services for HEIs**

These online services aimed at supporting the development of online and blended learning should be scalable and available for all to HEI use, but they are not intended to replicate or replace effective systems already being used at HEIs. Services offered can include:

- Online Learning Environments that can be plugged into other systems used at the HEI, with for example backend integration into HEI websites. MDEP services may be of particular value as cost effective solutions for smaller HEIs that lack ICT expertise and infrastructure.
- Online classrooms, for synchronous interaction with students (e.g. BigBlueButton, AdobeConnect).
- Curated access to a wide range of educational resources for teachers and students including curriculum-based materials and Open Educational Resources (OERs) and Open Textbooks that support curriculum and wider skills. Content made available via MDEP should follow an open access policy, that encourages adaptation and reuse of resources by HEIs.
- MDEP can also offer system solutions to smaller HEIs that require support

### b) MDEP should link to / interoperate with other systems and services
- These can include EMIS, the MERAL ‘National Portal for Research and Education’, online e-library systems, SISs and systems used by HEIs, and to other online/offline services.

### c) MDEP should support inclusive access to HE sector services
- This can be done through the development of a network of Digital Learning Support Centres (DSLCs) that provide Internet access and that can provide wider access to HE sector services, training and educational resources, for those in rural areas and hard to reach parts of the country.

### d) MDEP provides support for innovation and lifelong learning
- MDEP can bring together stakeholders to encourage innovation, and support public-private sector initiatives that encourage lifelong learning and flexible models of education. Examples would be exploring the potential for ‘lifelong learning passports’ and use of blockchain technologies.
- Continued access to the platform can be provided after students leave University and relevant services for supporting lifelong learning offered.

### e) MDEP content licensing should wherever possible support an open licensing strategy
- Course content, educational resources and other content uploaded onto the MDEP platform should be clearly licensed in accordance with copyright or creative commons licensing requirements.
- Wherever possible open licensing of educational content should be encouraged and supported, to encourage sharing, and enable reuse and adaptation of resources for use in different courses and contexts.

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6 Examples of this are the eTekkatho myLibrary solution and the use of the Raspberry Pi affordable computer to distribute high quality digital content in less accessible parts of the country being tested by the Myanmar Mobile Education Project (http://www.mymeproject.org)
Objective 4: Develop Online learning and Student Support Systems

Online learning is relevant to both campus based and distance students, who increasingly make use of mobile technologies and on-campus computing facilities to access and share learning resources and engage in learning. Students also have the potential to enhance their learning through accessing a wide range of freely available resources on the Internet.

It is essential for HEIs to develop their own capacity and expertise in supporting development of effective online and blended learning courses, and to develop their online learning platforms. They also need to develop student support services related to study skills and a wide range of other needs that are designed to be inclusive of disadvantaged students.

To support this strategy the following actions are recommended:

a) **Launching a Myanmar Open University (MOU)**
MOU can be a leader in digital education in Myanmar and a beacon for wider reform, capacity development, excellence and innovation related to online learning in the HE sector.

b) **Develop Learning Management Systems (LMS) at all HEIs**
LMSs can be set up by individual HEIs setting up their own platform or by making use of MDEP as a service provider. The LMSs’ should provide Online Learning Environments to support online study needs of campus and distance learning students and should link student data found in the SIS to the appropriate learning environments. The LMS should provide a record of student performance on different
courses and together with the SIS should hold data that meets the needs of different stakeholders including HEIs and MOE/DHE and interoperate as necessary with the EMIS. Together these systems should hold data that support flexibility in terms of student transfers, credits achieved and credit exchange. And that these spaces are accessible by students to support and further enhance their learning by providing at the very minimum a sense of place and at the maximum can improve learning outcomes. (c) to (i) below can be features set up within the LMSs.

c) **Developing online courses**  
Empowerment of HEIs to develop new courses and delivery mechanisms, either through the current system i.e. the ‘Human Resource Development’ (HRD) route which provides for a more flexible fee charging and revenue sharing model, and/or through increased autonomy for developing courses relevant to the HEI location and employer needs.

e) **Development of live online teaching services**  
Make use of conferencing and teaching support software such as Zoom, Google Classrooms, Adobe Connect and BigBlueButton (currently being used by MDEP) and consider using MDEP as a potential service provider.

f) **Development of online and offline content for all students**  
Focusing on development of e-library access to e-books and journals and development or reuse of Open Educational Resources (OERs) and digital content that can be flexibly used off-line in print format or online is recommended. Digital resources should be accessible to distance and campus-based students and to support inclusion alternative versions of digital content should be made available, and likewise online/offline versions of discussion fora should be supported enabling students without Internet access to engage.

g) **Develop and use learning analytics systems**  
To improve awareness of student progression and tailor support needs.

h) **Develop online student support services**  
Include careers advice/counselling, and induction/orientation packages that meet the needs of both campus-based and distance education students.

i) **Equip staff with relevant software**  
Introduce at all HEIs software to support learning design and also productivity software (such as Microsoft 365) which can support administrative staff.

Note: Work on (c) and (d) builds on activities that have been supported by the TIDE project.
Objective 5: Develop Staff to become ‘Digital educators’

All staff including managers, academics, ICT, library and administrative need to become digitally literate in a range of different ways, developing confidence in new competencies, that equip them to be digital educators, and support the introduction and effective delivery and management of digital education.

A transition to digital approaches requires the creation and recognition of new roles, in relation to learning design, and Audio-Visual (AV) production and support for team based course development and delivery approaches.

There is currently a lack of recognisable skills and literacies within Universities supporting the use of educational technology and ICT more broadly, whilst this is gradually changing, much greater emphasis needs to be given to developing staff who can play a key role in developing and supporting online learning.
Ongoing investment in capacity development and training, that scales up through use of ‘training of trainer (TOT)’ and knowledge cascading models is recommended in the following areas:

- **Leaders/Managers:**
  - ICT / Digital Education strategy development; Change management skills related to introducing team based approaches to design and deliver blended learning; Knowledge of tools for assessing market need; Awareness and knowledge related to the HE systems environment and options for developing systems within their HEI or making use of a service provider such as MDEP

- **Academics:**
  - Training in online tutoring and facilitation; OER and Open Textbook development; learning design skills to support pedagogies that encourage critical thinking, problem solving and outcome focused learning

- **ICT and Support staff:**
  - IT hardware and software installation (including OLEs and other systems), maintenance and support; network management; database management; learning technology skills; learning design; OER and Open Textbook development; media production online pedagogies and support models

- **Administrative staff:**
  - Use of administrative software such as Microsoft 365; awareness of and ability to make relevant use of systems such as the EMIS and MDEP

- **Library staff:**
  - Open licensing and use of OER; OER identification, reuse and development; Repository management; e-library services; support for learning design. Library staff can also be trained to raise awareness of OERs and promote digital literacy among other staff and students

- **For all staff:**
  - Use of productivity tools such as Microsoft 365; training on how best to make best use of educational resources and education technologies for online and blended learning delivery

- **Recognition of professional development within educational technology and development of competency frameworks**

  To support professional development of staff, development of a competency framework for different types of HEI staff is recommended, that can recognise and incentivise development of key skills related to digital education. HEIs should also introduce their own capacity development plans for ongoing professional development of their staff in the use of digital technologies to support teaching and learning.

Note: Work on this objective builds on activities that have been supported by the TIDE project
Objective 6: Develop student digital literacy needed to engage in technology enhanced learning

The final strategic objective emphasises the need to prepare all students for study and for the workplace, by equipping them with digital literacy skills to study using digital tools and platforms. Students should also be provided with exposure to workplace environments (e.g. through internships) enabling them to develop the use of the digital literacies they are developing. Priority also needs to be given to addressing the skill development needs of students with disabilities, or who are disadvantaged in other ways.

Figure 6: Computer classroom at UCSY, 2019

The recommendations are as follows:

a) **Providing technology Access for Students**
Enable students to have good quality access to digital technologies that can support their learning in both formal and non-formal education settings.

b) **Affordable access**
Develop universal access to mobile technologies and free or affordable access to educational services would otherwise lead to barriers to study in the form of significant data service charges. Implicit in this, is also the promotion of practices and development of systems that support inclusion and address divides relating to gender, disabilities, age or location (including displacement)
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<th><strong>Develop student skills to study effectively using online and mobile learning</strong>&lt;br&gt;Provide students with training and induction material that enables them to develop their digital literacy, get online and study effectively, and make good judgements in relation to use of the Internet, navigating the online environment and using Social media to support their learning.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>Develop soft skills</strong>&lt;br&gt;Offer online courses to students that develop their soft skills including creative thinking, problem solving, communication skills, media and information literacy, collaboration, leadership and teamwork. These courses should further develop their competencies in using digital tools to support their learning.</td>
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<tr>
<td></td>
<td><strong>Access to E-library and Curated content</strong>&lt;br&gt;Provide e-library access to students and support for making use of e-library and other curated content. This should include digital access for all distance education students to relevant library and course online content.</td>
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</tbody>
</table>

Note: Work on (c) builds on activities that have been supported by the TIDE project
Cross cutting / enabling activities

Three major cross cutting activities are recommended in order to support the effective delivery of these strategic objectives:

i) Development of English language skills relevant to different subject and career requirements

ii) Development of quality assurance mechanisms around all development activities highlighted in the above strategies

iii) Identifying and engaging stakeholders from different sectors in the detailed design and implementation of the digital strategy recommendations

Addressing digital divides and providing an inclusive digital strategy

As highlighted throughout this document, inclusive approaches are needed to provide alternative ways for students to engage in the educational experience offered, and overcome barriers to doing so, which can include but are not limited to cost, electricity, access to technology, language, location, disabilities and the digital literacy related skills which support online and blended forms of learning.

This presents a major challenge, which if ignored can result in a two tier system, seriously disadvantaging those who lack access and digital literacy skills. It may not be possible to fully address all the problems highlighted and over time as ICT infrastructure improves the first level of digital divide related to access will reduce in some ways, though not completely, as speed of access and the features of the technology may vary greatly constraining what some students can do for example with their mobile phone.

During and after this transition period to a more fully digitally support context, the digital strategy should be informed throughout by the 'leave no child behind' philosophy. This highlights the need to include all students through taking into account gender, those with disabilities, and those who may be disadvantaged economically or in other ways due to their circumstances.

Devising a strategy for equitably developing the power, telecommunications and ICT infrastructure across Myanmar goes beyond the scope of this document, but this is essential as a pre-requisite for a truly equitable higher education system that places increased emphasis and reliance on use of digital technologies and in particular the Internet.

Approaches that support inclusive practices that are highlighted in this document, and re-emphasised here are:

- The development of courses that can be followed either online or in print, with provision also made for those with disabilities who are likely to have special needs
- The development of online systems and services that can also be engaged with through alternative means, e.g. an alternative to online registration, could be submission of a form or a phone call based registration process
- Support for digital literacy training for both staff and students, so that those who do have access, can overcome ‘second order’ digital divides related to knowing how to make effective use of digital technologies and online services
4. Recommendations and Next Steps

To deliver on the strategic objectives identified requires investment, prioritisation and careful planning, so that short and medium-term milestones and long term planning goals can be agreed and met.

To be effective, this strategy would benefit from support from the following key decision makers and coordinating bodies:

⇒ Department for Higher Education
⇒ National Education Policy Commission
⇒ Rectors Committee and ICT Sub-Committee
⇒ Higher Education Sub-Sector Working Group (HE-SSWG)

It is hoped that this document will also provide a valuable input for planning relevant strategies within the National Education Strategic Plan (NESP, 2021-2030)

7th September 2020