SOUTHEAST ASIA (SEA) 2022

DIGITAL CONTENT INDUSTRY TALENT REPORT

Research Collaborator:

TalentCorp
GROUP OF COMPANIES

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Yore Productions, Malaysia

Project Dreamcatcher!!

EXECUTIVE SUMMARY

The digital content industry, broadly covered as animation, games, visual effects and its related production, development, distribution and commercialisation ecosystems, is essentially a creative industry driven by innovative studios and talented individuals and teams.

The very nature of these individuals, skill sets and capabilities are the fuel of the creative industry. The Southeast Asian landscape for these talents is as diverse as the multi-ethnic cultures, languages and traditions of over 680 million people in the region.

This recent research, led by MDEC in partnership with TalentCorp Malaysia, regional industry associations with over 150 studios and education institutions, aims to continue the understanding of the region's digital content industry with a deeper focus on talent supply and demand.

The report concludes with several strategic recommendations for the digital content industry's talent landscape. It also seeks to prepare the region's industry for shifts in skill sets magnified by disruptive technologies through employment market analysis and comparing the findings against new market disruptions.

FOREWORD BY CEO

Dear members of the digital content industry,

This publication marks our fifth industry report that investigates the digital creative ecosystem within Southeast Asia.

Our mission is to provide continuous data and insights for the industry so that we, as a region, can formulate better strategies and policies that are well-suited for the industry. Not only is the industry fast-growing, but it is also fast-changing. And because of that, the ecosystem not only demands more talent but also wants talents with diverse skills.

And with that problem statement, our report this year is called "Southeast Asia (SEA) Digital Content Industry Talent Report 2022". In fact, this is our second report focusing on talent demand and supply.

This time, we want to look at both animation and games because MDEC has observed that digital content companies are essentially IP companies that face common development and production challenges.

Moreso, disruptive technologies such as the increasing growth of extended reality (XR), virtual reality (VR), metaverse, and Web 3.0 (and those companies that service these products) further blur the lines between traditional game or animation companies.

Ts Mahadhir Aziz
Chief Executive Officer
Malaysia Digital Economy Corporation (MDEC)

WE HOPE TO CHART A BETTER AND MORE FRUITFUL PATHWAY FOR OUR DIGITAL CONTENT INDUSTRY IN 2023 AND BEYOND

MDEC has seen the digital content and creative tech industry reach RM7 billion and 10,000 jobs in 2019. While the pandemic has impacted all industries, the digital content space from a global demand perspective remains strong. Globally, the revenue in the digital media market is projected to reach US$348.40 billion in 2022, with the largest market segment being video games, with a projected market volume of US$197 billion in 2022. The increase in demand shows that we need to be in the know of our talent ecosystem and how we can ensure we have the numbers with the right skills.

Currently, we also do not see a talent report specifically looking at the digital content industry in SEA. Hence, it is only right for us to work together with our SEA partners to ensure we hear the voices of both studios and IHLs (Institutions of Higher Learning). It is vital for the report not to be one-sided because the ecosystem can only supply quality talents if we provide good platforms to convince passionate students to pursue careers in the digital content industry.

Ladies and gentlemen,

This report would not be possible without the support and enthusiasm of our partners from the participating Southeast Asian nations, as well as all participating studios and IHLs.

With the release of this report, we hope to chart a better and more fruitful pathway for our digital content industry in 2023 and beyond. We are also looking forward to creating more partnerships and alliances with other SEA nations to further strengthen the industry so we can develop not only global standard IPs but also highly successful worldwide.

Thank you, and may we all benefit from the findings we have obtained so far.

FOREWORD BY HEAD OF DIGITAL CREATIVE CONTENT

Mohan Low
Director, Digital Content Development
Malaysia Digital Economy Corporation (MDEC)

It is with great pride for me to present to you our latest industry analysis paper, the Southeast Asia Digital Content Industry Talent Report 2022. The Malaysia Digital Economy Corporation has long been ensuring efforts to develop the digital content and creative sector as it represents an amazing opportunity for thousands of talented and skilled artists, engineers, programmers and designers to participate in the creation of games, animation and related disciplines.

Much has changed since we first introduced our first industry report in 2015. The industry is moving fast, not only in demand but also in technology adoption. Gone are the days when our animation was just being shown on television and in cinemas. Now, distribution is going global with the advent of TV streaming platforms like Netflix, Disney Plus, etc.

This can be similarly seen in the game industry, especially since the pandemic. The demand for games has grown, and more game stores are now available. With Web 3.0 fast approaching, we are not only seeing free-to-play games, but we are also seeing play-and-earn games in the market now. In the overall digital content sphere, the world is also looking at metaverse and Non-Fungible Tokens (NFTs).

We need to be on top of these changes and ensure our talent ecosystem is adaptable, and if not, how to ensure our policies and programs drive the talent ecosystem in the right direction.

Just looking at the global animation market in 2022,

WE FORGE THE WAY FORWARD TOWARDS DRIVING THE GROWTH OF TECHNOLOGY, INNOVATION AND CREATIVE CONTENT

the estimated market size is worth US$298.2 million[1]. Meanwhile, the games segment expects the number of users to amount to 3,803.3 million users by 2027[2]. Demands are constantly increasing, which means studios in our region need to start producing more IPs to cater to globalised audiences that are constantly hungry for more content.

Throughout the reporting process, we have spoken to many studios and institutions of higher learning throughout SEA. We want to explore the topic not just from a singular point-of-view but rather a whole spectrum because while studios generate job opportunities, our IHLs generate the talents needed by studios.

MDEC has long established itself as a digital content leader in the industry and ecosystem development. But the truth is, we could not do it alone in SEA. Together with our partners and collaborators, we forge the way forward towards driving the growth of technology, innovation and creative content, which in turn contributes to the region's economic growth. And for that, I would like to thank our partners who have helped us capture data for this report from their respective countries' studios and IHLs. We could not have done this without you. We hope to see more collaboration in the future so we can grow our industry together as one.

I am very optimistic this report will benefit many parties, and I hope it will encourage more cooperation between SEA countries to make this region the strongest market for the digital content industry.

FOREWORD BY TALENTCORP

At TalentCorp, a national agency under the Ministry of Human Resources mandated to drive Malaysia's talent strategy, we strive to work in partnership with key stakeholders to attract, nurture, and retain the right talent needed by industries for the economic growth and well-being of Malaysians. Being part of the development of the Southeast Asia (SEA) Digital Content Industry Talent Report 2022, alongside MDEC and other notable organisations, brings great significance as we embark on strengthening Malaysia's talent sources and bridging the disparities between talent supply and demand.

The digital content industry is crucial for Malaysia as it grows in tandem with the rising digital transformation in the education, telecommunications, media, and entertainment sectors. Based on our 2020/2021 Critical Occupation List (MyCOL), 86% of occupations that appeared for the first time are predominantly digital professions, with particular demand for animation and visual effects professionals, digital games, and e-sports. This greatly reflects the vital need for us to support the industry's talent development in producing knowledgeable, multi-skilled, industry-ready, and future-ready local talent that will drive the industry forward.

While we strongly advocate and undertake measures to forge greater collaboration between the industry and academia, the digital content talent insights highlighted in the report will help us, together with other policymakers, industries, and academia, to better understand the talent landscape of the digital content industry enabling us to work hand-in-hand to close the skills gaps.

Nazrul Aziz

Vice President, Graduate, Diaspora, and Industry Partnership
TalentCorp Malaysia

This report has perfectly emphasised how crucial the role of stakeholders is in promoting talent development that can boost the level of talent and leadership for the next generation. In addition to creating awareness of opportunities for local talent, we are eager to see this platform foster more collaboration within the SEA countries towards developing a robust SEA talent pipeline which fulfils the growing demand for highly skilled talent within the region.

FOREWORD BY REGIONAL PARTNERS

Ameir Hamzah Hashim

President of ANIMAS
(Persatuan Animasi Malaysia)

Animation is a huge part of the creative content industry that is becoming significantly popular and actively growing in Southeast Asia and successfully breaking through to the world stage. In Malaysia, it is strongly recommended that all stakeholders jointly study to improve the employment ecosystem in the animation industry in order to welcome the collaboration between educational institutions - industry players - government agencies - TV stations and other parties so that the link in the employment chain can remain powerful and not hindered or broken in the middle of the journey. The SEA Digital Content Industry Talent Report 2022 is very welcome and necessary to enlighten all parties to prepare and fill the gap so everyone can benefit. The sharing of inputs among industry players and policymakers at the Southeast Asia level will open up more opportunities for joint ventures and mutually strengthen the coveted ecosystem.

Shawn Beck

IGDA Malaysia Chapter Coordinator

In order to close the talent gap that currently exists, the SEA Digital Content Industry Talent Report 2022 aims to help stakeholders in the SEA game industry get the most up-to-date information on our current game industry ecosystem. We sincerely hope that our industry's key players, government, and academic institutions, will be able to translate the findings of this research into practical steps that will enhance our talent ecosystem.

FOREWORD BY REGIONAL PARTNERS

Eka Chandra

Secretary General of AINAKI
(Association of Indonesia Animation Industry)

The animation industry is part of a larger creative economic industry, and the demand for animation production services in Indonesia is increasing significantly. The problem we are facing is still around the resource to cater for the increasing demand. The collaborative partnership between SEA countries plays an important role now and in the future. SEA Digital Content Industry Talent Report 2022 will surely help the SEA creative industries better understand the animation and other creative business landscapes.

Cipto Adiguno

President of *Asosiasi Game Indonesia*

As the digital game industry continues to grow at a rapid pace around the world, talent becomes the critical resource every company is fighting for. Not only do we need more talent than ever, but new technologies in the medium demand new specialisations that very few talents currently have. I believe the report is crucial to providing insights into how we as a united industry can unravel this issue and reach greater heights together.

FOREWORD BY REGIONAL PARTNERS

Magoo Del Mundo

Former President of SIKAP
(The Creative Content Creators' Association of the Philippines)

The SEA Digital Content Industry Talent Report 2022 allows industry professionals insight into the supply chain of the region's creative sectors. This report is invaluable for territories in SEA who are serious about further developing their creator and creative economies.

James Ronald H Lo

Co-Founder and President of GDAP
(The Game Developers Association of the Philippines)

The animation and game development industries have grown leaps and bounds over the past two decades. Our adaptability as an industry has allowed us to evolve amidst all the changes that have taken place around the world.

Over the years, studios in the region have developed skills in delivering world-class content intended for international audiences. We no longer work in silos as we bridge gaps in communications and open doors for collaboration via continued correspondence with industry associations.

Today, the world searches for refreshing stories and unique cultures to discover. Now is a particularly opportune time to put our focus on creating our own content. Tomorrow is what we look forward to, as it is when we are able to share our stories, our culture, and our content with the world.

Let's make that happen. Game on!

FOREWORD BY REGIONAL PARTNERS

Elicia Lee

Chairperson of SGGA

(Singapore Games Association)

Unlike the larger markets like the US or Japan, we currently lack in-depth industry data on the individual ecosystems within the Southeast Asian games industry, which is what makes the SEA Digital Content Industry Talent Report so valuable. Having access to data like this allows trade associations like the SGGA to make informed decisions on how we can better support our companies and create opportunities for our talent.

Nop Dharmavanich

President of TACGA

(Thai Animation and Computer Graphics Association)

The animation and game industries continue to expand, necessitating further government support for the ecosystem. The report's conclusions and suggestions offer useful information for developing better knowledge and long-term strategy with an emphasis on talent development."

FOREWORD BY REGIONAL PARTNERS

Anh

President of Vietnam Game Dev

The SEA Digital Content Talent Report 2022 helps us to understand the talent situation of other countries in the region. The Vietnamese content industry is vibrant and technologically savvy, but findings from around the region can provide insights and learnings for us in the community to build suggestions and direction with our stakeholders and government.

01 OBJECTIVE

Anima Vitae Point, Malaysia

OBJECTIVE

The Southeast Asia (SEA) Digital Content Industry Talent Report 2022 aims to develop strategic recommendations for the digital content industry's talent landscape. The report also seeks to prepare the region's industry for shifts in skill sets magnified by disruptive technologies through employment market analysis and comparing the findings against new market disruptions.

02 BACKGROUND

BACKGROUND

The digital content industry, broadly covered as animation, games, visual effects and its related production, development, distribution, and commercialisation ecosystems, is essentially a creative industry driven by innovative studios as well as talented individuals and teams.

The very nature of these individuals, skill sets and capabilities fuel the creative industry. Hence research into their development, support, and opportunity for growth, is an essential part of developing a sustainable and robust ecosystem.

The Southeast Asian landscape for these talents is as diverse as the multi-ethnic cultures, languages and traditions of over 680 million people in the region. This recent research was led by MDEC in partnership with more than ten regional industry associations and over 150 studios and higher education institutions.

From an industry standpoint, several major industries which impact the overall digital content industry from a demand perspective are significant:

Visual Effects (VFX) Market size was valued at USD7.51 Billion in 2021 and is projected to reach USD11.26 Billion by 2030, growing at a CAGR of 5.19% from 2022 to 2030[3].

The Global Virtual Production Market is estimated to be USD2.4 Billion in 2021 and is expected to reach USD5.4 Billion by 2026, growing at a CAGR of 17.6%[4].

BattleBrew Productions, Singapore

The Metaverse market may reach USD783.3 Billion in 2024 vs USD478.7 Billion in 2020, representing a compound annual growth rate of 13.1%, based on our analysis and Newzoo, IDC, PWC, Statista and Two Circles data[5]

The global animation market size was estimated at USD372.44 Billion in 2021 and is predicted to reach over USD587.1 Billion by 2030, growing at a CAGR of 5.2% during the forecast period 2022 to 2030[6]

Blockchain gaming is estimated to grow to USD50 Billion by 2025, a growth rate 10x of traditional gaming[7]

The global games market generated USD196.8 Billion in 2022, up by +2.1% year on year. The primary driver of revenue growth across the world's games market is mobile, which will generate revenues of USD103.5 Billion this year (53% of the market), representing a growth of +5.1%[8].

Moredoor Interactive, Malaysia

With the increasing adoption and development of new technologies, Southeast Asian governments are competing to develop a strategic roadmap toward becoming Web 3.0 nations. While Web 2.0 positioned creators to be dependent on centralised platforms, Web 3.0's innovations offer creators freedom from these platforms and provide simpler monetisation routes[9].

The rise of blockchain applications, metaverse, virtual production, non-fungible tokens (NFTs), and others has spurred global demand for content creation, sparking a greater need for specialised talents. As such, the content creator economy will see new employment opportunities alongside a shift in skills to meet market needs.

Nevertheless, even in the absence of new disruptive technology, there is still a talent shortage in the conventional digital content industry across Southeast Asia. Indeed, the demand for quality talent continues to exceed the supply, and this is not expected to change in Southeast Asia (SEA) and the global market.

Having said that, the opportunities for talent development in the digital content industry are extremely promising and exciting. Therefore, a study comprising a survey and interview was proposed to obtain the primary data from existing digital content players. The findings from the study, combined with reviews from other relevant sources, will be used to establish an understanding of the industry's position in the job market.

In addition, the report will also develop strategic recommendations to drive potential opportunities in talent development and equipping talent with the skill sets necessary for the Web 3.0 future.

03 METHODOLOGY

METHODOLOGY

The approach for this paper was based on the following three (3) phases:

PHASE 1
SOUTHEAST ASIA DIGITAL CONTENT INDUSTRY: SUPPLY AND DEMAND OF INDUSTRY TALENT

In this phase, primary and secondary data were gathered to provide a fair view of the talent ecosystem in the digital content industry, specifically the animation and game industry. Regional surveys and interviews with industry representatives and higher education institutions were used to assess the current state of talent supply and demand in Southeast Asia. The research frame was conducted based on three main pillars, which are industry growth, talent development, and government support in developing talent, from a supply-demand perspective:

Industry growth
Understanding the talent landscape in the industry, from talent acquisition, pipeline, organisational values, learning and development, to compensation management.

Talent development
Discover key trends and changes, opportunities, and challenges in talent development, including critical roles, salaries ranges by roles, skill set, organisation culture and career advancement.

Government support
Assessing how the government supports the development of talent in the industry to produce future-ready talent.

In the context of the Southeast Asian digital content industry, the terms "supply" and "demand" of talent refer to the following aspects:

- **The talent demand of the digital content industry:** This refers to talent drivers, consisting of digital content-related companies that require and employ talent with the essential skills, experience, and industry know-how to create products and services in the digital content industry.
- **The talent supply of the digital content industry:** This refers to the talent pipeline, which is a pool of applicants produced through higher education who are searching for employment in the digital content industry.

The primary research was conducted through two main methods: the online survey and interview with an exploratory research design. The sample population consisted of companies with talent needs and educational institutions supplying talent to Southeast Asia's digital content industry. Two sets of survey and interview questions were prepared for the previously mentioned companies and educational institutions involved in the digital content industry.

One of the research methodologies implemented in this study was the purposive or judgemental sampling technique. The participant outreach was conducted based on the recommendations of the game and animation associations that are industry representatives in each of the Southeast Asian countries.

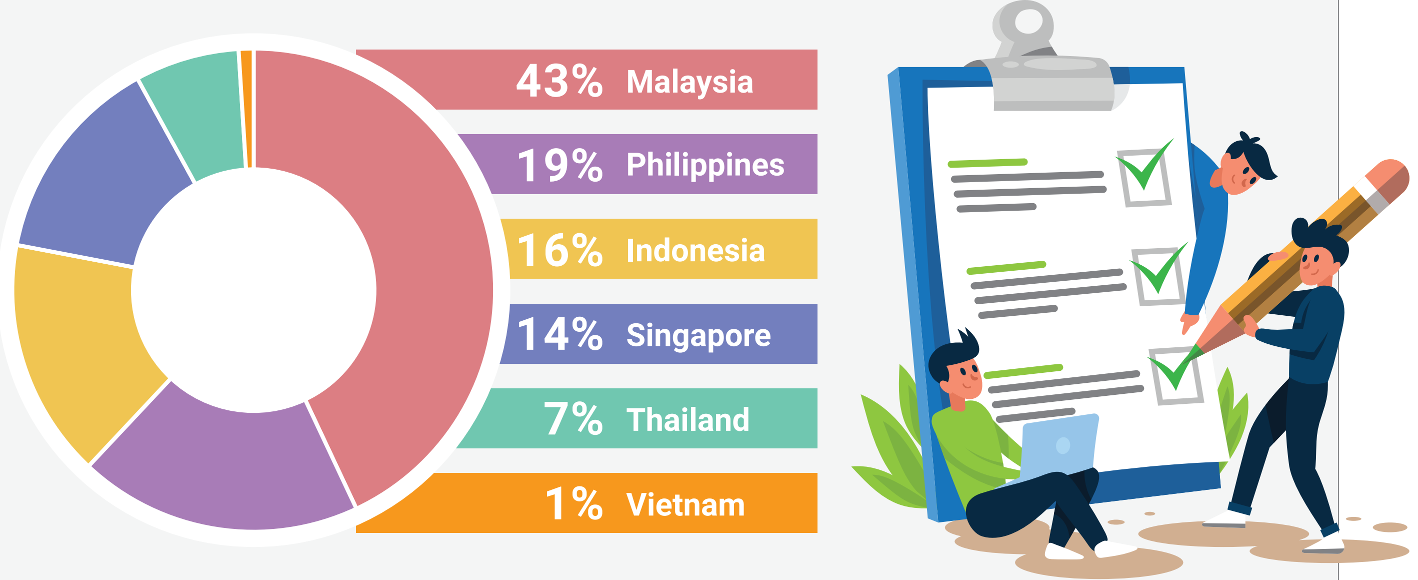
Overall, 119 online surveys and 41 interviews were conducted with a total of 119 studios and 41 educational

institutions across Southeast Asia countries. There is a limitation in the sample size, particularly the responses from Vietnam.

The breakdown of the total sample size of 160 by country is shown in Figure 1.

The results of the quantitative and qualitative research methodologies are broken down and analysed in detail independently. A SWOT analysis was undertaken subsequently to identify the various strengths, weaknesses, opportunities and threats associated with each nation. The findings are validated through a dialogue with an association representing the animation and games industries.

Figure 1: Total Number of Respondents



METHODOLOGY

PHASE 2
BENCHMARKING OF A SUCCESSFUL DIGITAL CONTENT INDUSTRY HUB

The United Kingdom (UK) was chosen as the benchmark for a successful digital content industry hub.

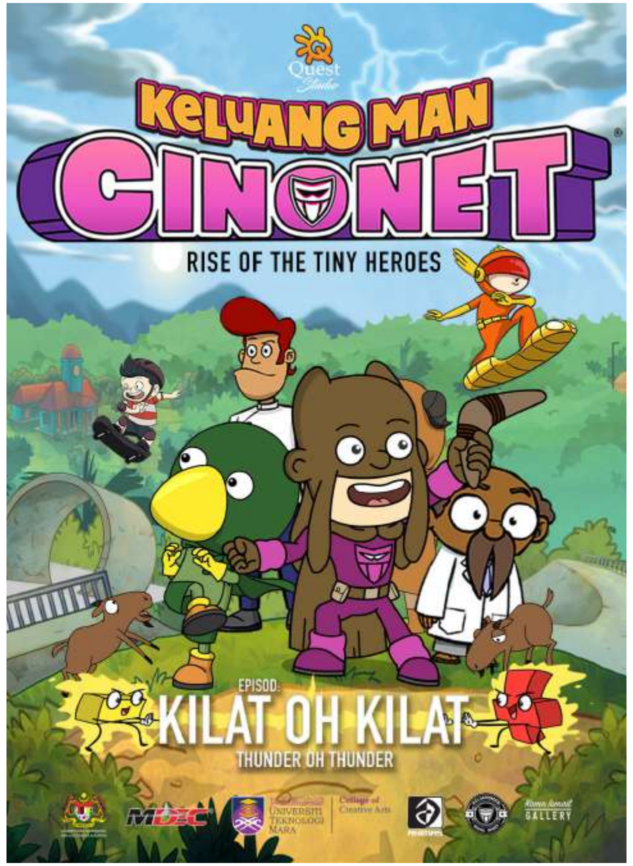
The quality of its workforce is one of the key competitive advantages of the UK games and animation industry. Industries in the UK typically employ highly qualified, experienced and creative individuals. As such, the nation has a highly skilled and experienced workforce capable of creating content and original IP that sells worldwide.

The following are the primary justifications for using the UK as a benchmark:

1. Higher education in the UK strongly supports the games and animation industry, with industry-recognised accreditation courses.
2. High job demands and employment growth in the game industry.
3. There are viable professional careers with paths to promotion in the UK games industry.
4. There is continuous support for professional development for the current and future workforce in the games and animation industry.
5. Accessibility of incubator and accelerator programs specifically for the games and animation industry.

PHASE 3
SWOT ANALYSIS AND RECOMMENDATIONS

In this section, learnings in the earlier phases were presented together in a useful context. The objective of this phase was to show the strengths and weaknesses of the digital content industry's talent ecosystem and formulate recommendations for improvement.



Quest Studio, Malaysia

04 INSIGHTS & OBSERVATION

INSIGHTS & OBSERVATION

QUANTITATIVE RESEARCH: SOUTHEAST ASIA REGION

INDUSTRY

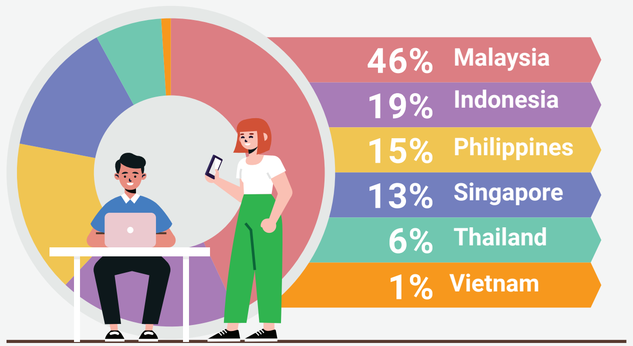
1. Talent Landscape: Overview of Digital Content Industry in Southeast Asia

The digital content industry in Southeast Asia is unique in that most studios are of modest scale, despite years of operation. Southeast Asian studios with a good talent pool have a proven track record of success, having worked on global intellectual properties (IPs) for external development and original content creation. Some regional creative professionals are also employed by leading companies worldwide.

A total of 89 studios from the digital content industry across Southeast Asian countries, consisting of Malaysia, Indonesia, Philippines, Singapore, Thailand and Vietnam, participated in the online survey.

The breakdown of participation by country is as below:

Figure 2: Number of Respondents by Country



Hide and Seeds Production, Malaysia

The following are the findings of the online survey:

2. Talented people in the region have the skills, creativity, and capacity to develop global-quality content

A majority of the respondents were involved in the animation (56%) and game development (44%) industry (Figure 3) for outsourcing and original content creation (Figure 4). There is also a growing trend of original content creation for over-the-top (OTT) platforms such as YouTube, Instagram and TikTok. The trend is primarily due to self-investment, as these platforms require fewer resources to develop content.

In Malaysia, the animation sector has long been established since the proven success of the Saladin animated series, which was co-produced by MDEC and Al Jazeera Children's Channel in 2006. Similarly, the Malaysian game, Rhythm Doctor also led the charts as one of Steam's Best-Rated Games in 2021[10].

In Vietnam, Flappy Bird was an unexpected success in the highly competitive mobile phone game market in 2014. Its successor, Axie Infinity, a non-fungible token-based online video game, has pioneered new game models centered around Web 3.0 technologies. Thailand's first Netflix kid's animation series, Sea of Love, was produced by The Monk Studios and Oddbods is an animation series produced by Singaporean One Animation.

These successes prove that regional talents have the knowledge, creativity, and technology to produce high-quality content catered for the global market and on par with international players.

Figure 3: Respondent by Sector

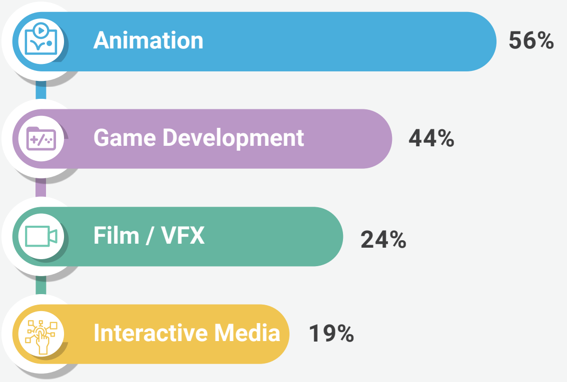
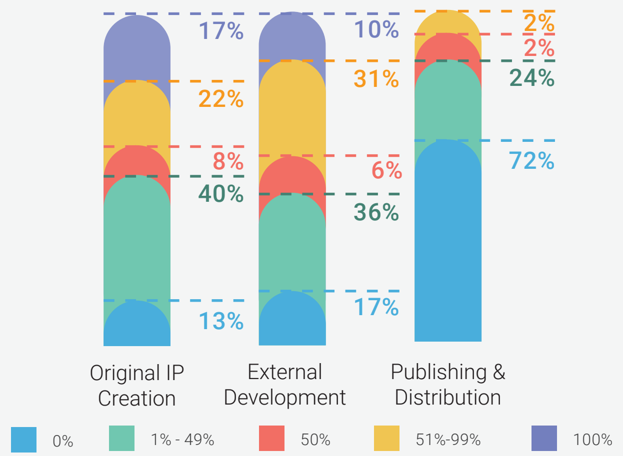


Figure 4: Nature of Business



3. Modest-scale studios in Southeast Asia have untapped promise and opportunity

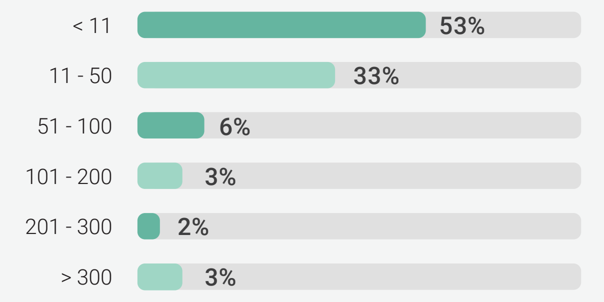
While there are large studios in Southeast Asia with more than 300 professionals (3%), the findings show that the majority of studios are small in scale, with less than 50 employees working in a production role for the animation and game industry (86%) (Figure 5).

This opens up the opportunity for the studios to be targets for mergers or acquisitions as investors and publishers observe value and market share capture. In the game industry, indie game developers are also frequent targets for mergers and acquisitions (M&A)[11]. Here are some examples:

- Indonesian game developer and publisher Toge Productions announced their acquisition of Tahoe Games, an indie game studio in Kediri, East Java, Indonesia[12].
- iCandy Interactive (iCandy) announced the complete acquisition of Lemon Sky Studios (Lemon Sky) to expand its capabilities[13].

Therefore, smaller studios in the Southeast Asian region have promising potential and opportunities.

Figure 5: Studio Size



4. Positive profit margin growth trend, with 75% of studios operating at or above the break-even point

In the past three years, a consistent positive profit margin growth trend has been observed, with 75% of studios surveyed and in operation showing their financial performance as at or above the break-even point. Only 25% of studios did not earn profits, with 32% generating an average gross revenue of less than USD10,0001. For context, 19% of companies surveyed earn revenues exceeding USD500,000 per annum, showcasing a strong leading class of Southeast Asian studios powering the space (Figure 6 & 7).

Many factors contribute to the difference in revenue spread:

- 17% of the studios are entirely focused on creating original content (Figure 4), which takes longer to develop from conceptualisation to commercialism.
- 21% of studios have less than three years of experience and fewer than 11 employees. These studios are likely in their early years of operations and faced challenges in growing their business due to the pandemic in 2020.

Figure 6: Average Profit Margin for The Past 3 Years

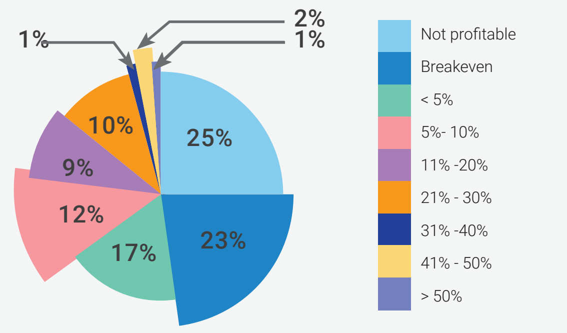
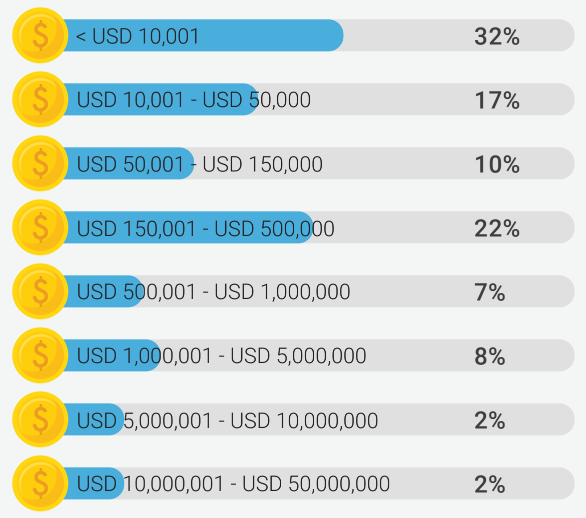


Figure 7: Average Yearly Gross Revenue for The Past 3 Years



INSIGHTS & OBSERVATION

5. Strong competition for well-qualified talent and in-house training helps keep up with changing needs in skills

With the rise of new business opportunities and the shift in skill sets required to keep up with the fast-changing technology, the competition for finding the right talent is fierce in the digital content industry.

Below are the views on the employment market and resourcing in the digital content industry (Figure 8):

- 64% of respondents believe that competition for well-qualified talent is high and has drastically increased over the past years.
- 54% of respondents stated that there are extreme changes in the skills necessary for jobs in their companies.
- Over the last 12 months, 49% of studios have more highly developed in-house talent than the previous year.
- Only 32% of studios have recruited from a much wider geography than the previous year, despite having more borderless and remote working options.

Notably, the increase of metaverse development in the region has led to talent poaching, especially game developers, by companies with more investor funds. Subsequently, the companies overflow the market by offering exorbitant salaries. The economic outlook, including trends such as remote work with better salary payouts and shifts in career paths to NFT spaces, has also contributed to the rising turnover rate.

INSIGHTS & OBSERVATION

Figure 8: Views on The Employment Market and Resourcing of Digital Content Industry

		Not at all	Slighty	Moderately	Very	Extremely
View 1	Competition for well-quailfied talent has increased over the past year	4%	14%	18%	36%	28%
View 2	The skills needed for jos in our companies are changing	1%	12%	33%	36%	18%
View 3	Over the last 12 months we have developed more talent in-house compared with the previous year	5%	20%	26%	32%	17%
View 4	Candidates are more cautious about moving jobs compared with a year ago	18%	17%	28%	25%	12%
View 5	Over the last 12 months we recruited a more diverse workforce compared with the previous year	20%	16%	29%	22%	13%
View 6	Over the last 12 months we recruited talent from a much wider geography compared with the previous year	18%	22%	28%	18%	14%
View 7	Over the last 12 months we saw more unsuitable applicants for each post compared with the previous year	15%	22%	34%	18%	11%
View 8	Talent is increasingly difficult to retain compared with a year ago	12%	16%	26%	26%	20%

INSIGHTS & OBSERVATION

6. Investing in talents for the success of the company

Investing in talent is essential for long-term business success, particularly in the digital content industry, where talent is the primary economic resource in creative businesses. These investments include pay and benefits, training development, and professional growth as part of the business strategy.

Of the surveyed companies, 40% of studios spend more than half of their gross revenue on payroll, accounting for most of their business operating costs (Figure 9). The average monthly salary is between USD751 to USD1,000 (24%), and 67% of studios provide an annual salary increment to their employees (Figures 10 and 11). Contributing factors to the salary adjustment include rising living expenses and performance variables (Figure 11).

However, 13% of Southeast Asian studios pay less than USD251 in salary (Figure 10), primarily in Indonesia and the Philippines. At the same time, young high school graduates aged 18 and above studying animation are among the talents working in the industry in Indonesia and the Philippines.

In terms of talent management, companies are now mainly focused on providing training and learning development to their current employees (46%) (Figure 12). Indeed, studios are more likely to build a highly skilled workforce and meet the shift in skill sets by committing to upskilling existing employees. This approach is also part of the studios' employee retention strategy to keep top talent on board.

Figure 9: Percentage (%) of Payroll from The Gross Revenue

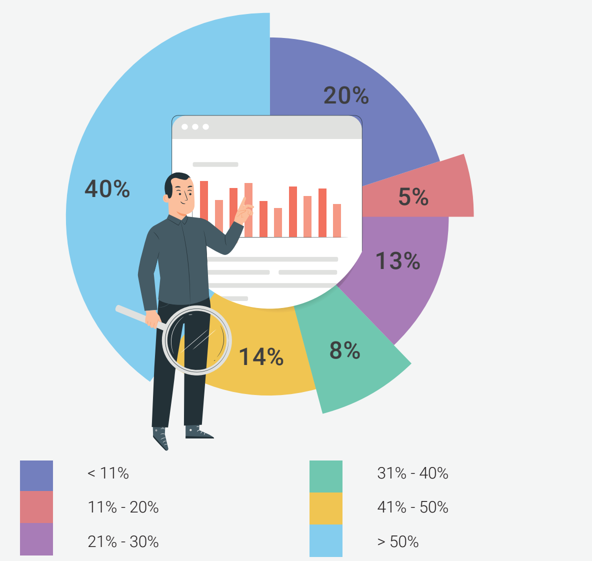


Figure 10: Average Monthly Salary in A Company

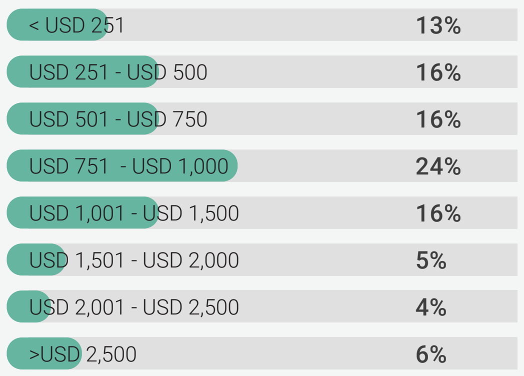


Figure 11: Yearly Average Salary Increment

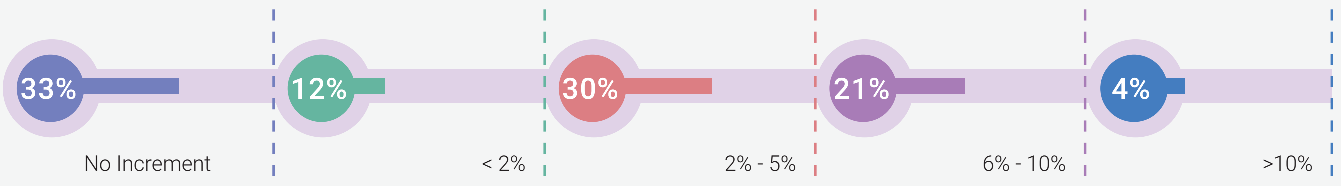
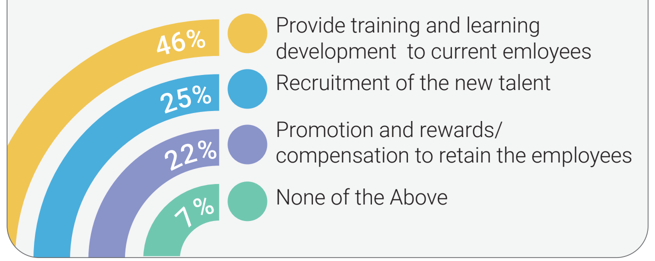


Figure 12: Company's Main Focus in Talent Management



7. Increase in recruitment costs mainly due to new skills requirements and businesses opportunities

The pandemic has sped up the digital transformation as the global demand for digital content consumption has surged. This has opened new horizons for both current and new businesses in the digital content industry, adding to the pressure to find talent with the right skills and aptitude to realise growth potential.

From the survey, the majority of the studios are of the opinion that the talent management budget (63%) with the allocation for recruitment costs (43%) will increase, whereas nearly 36% believe that it will remain the same (Figures 13 and 14). Further, 57% of studios anticipate more than a 5% increase in recruitment cost from gross revenue, and 43% expect an increase in recruitment cost of less than 5% (Figure 16).

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Among the most likely reasons for hiring new talents (Figure 15) are:

- New skills needed (67%)
- New business opportunities (66%)
- Limited employee capacity (47%)

Most studios prioritise skill sets and experience (79%), and soft skills (64%) when recruiting talents. Cultural fit and headcount budget are the least significant concerns for studios, as internal environmental factors are controllable (Figure 17).

Figure 14: Changes in Company's Recruitment Cost

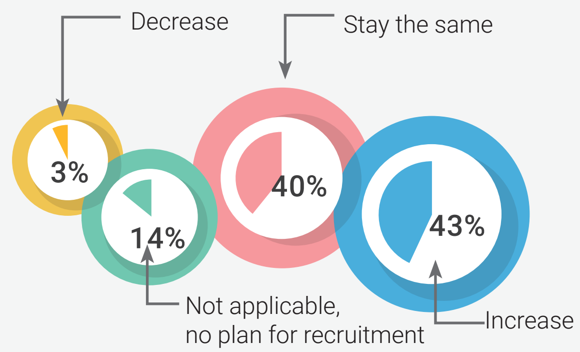

Figure 13: Changes in Company's Talent Management Budget

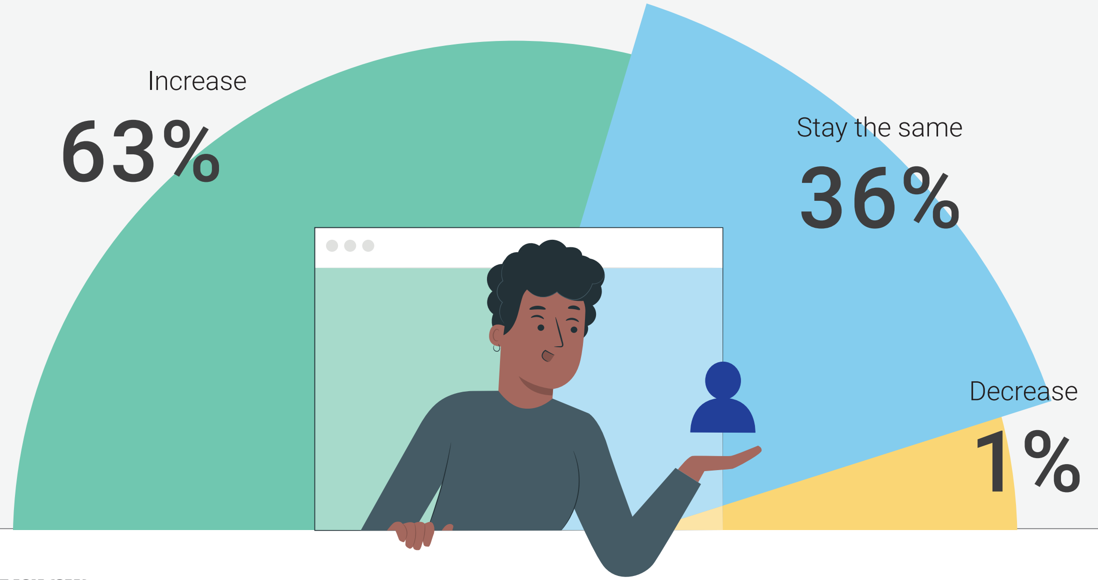

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Figure 15: Reason for Future Planned Studio Recruitment

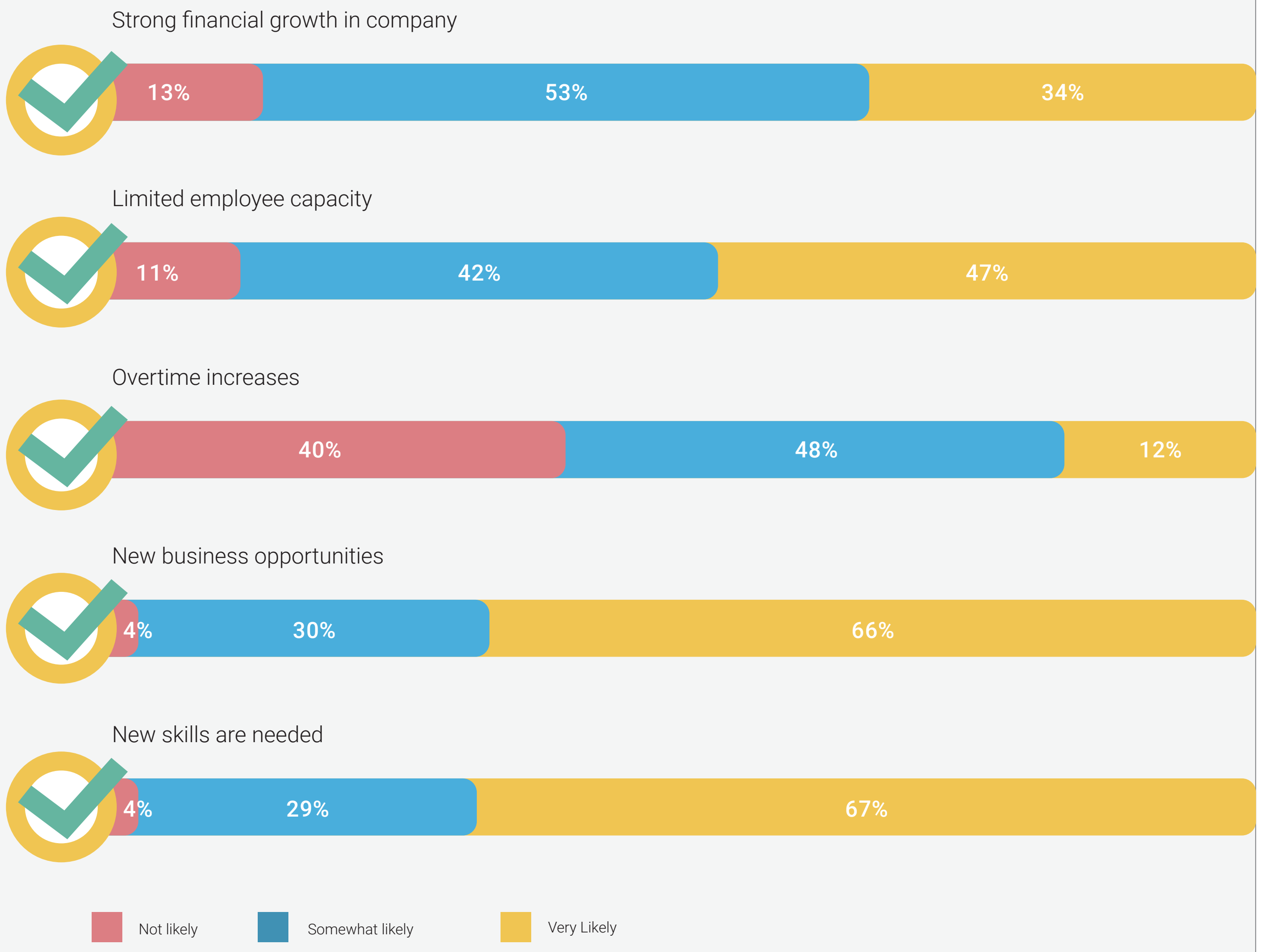


Figure 16: Percentage (%) Increase of Recruitment Cost from The Gross Revenue

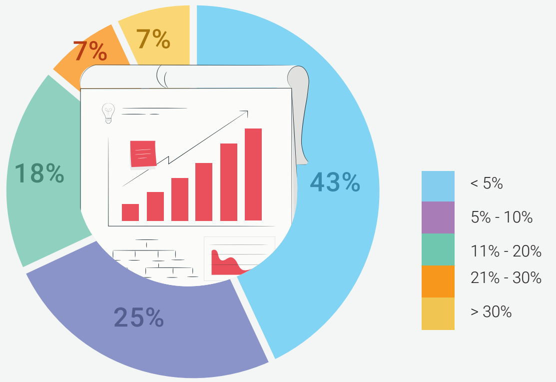
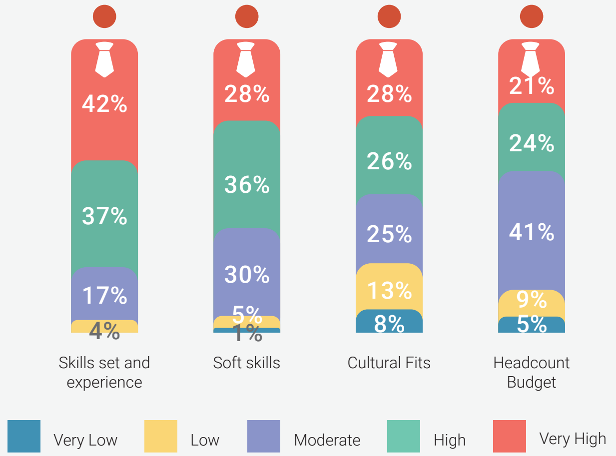


Figure 17: Company's Current Concerns When Recruiting Talent



8. Growth in salary demands and training development

New hires with a good fit of skill sets are in high demand among Southeast Asian studios, leading to competitive salaries and benefits in the employment market. Therefore, the overall increases in recruitment costs are mainly attributed to higher pay and benefits (57%), and training and development (56%) (Figure 18).

Most studios also offer internal training, such as onboarding and training programs for new hires and upskilling for existing staff (Figure 12). Upskilling helps existing employees stay relevant in the business and minimises recruitment costs.

The salary demands for new hires have grown by 10-20% (34%) and 21-30% (14%) (Figure 19). Job roles with a significant salary increase include:

- Programmer
- Technical artist
- Animator

Other cited job roles that saw salary increases include:

- Art-related skills
- Gameplay programmer
- Marketing manager
- Game designers
- 3D technical director
- 2D & 3D painters
- Rigger
- Modeller
- Hand-drawn/2D animator
- 3D artists
- Project manager
- Producer

Staffing agencies (40%), recruitment platforms (26%), and recruiting events (28%) are regarded as the least significant when it comes to recruitment costs. This is because talent is primarily acquired through social media platforms, internship programs and word of mouth (Figure 18).

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Figure 18: Percentage (%) Breakdown of The Overall Recruitment Cost

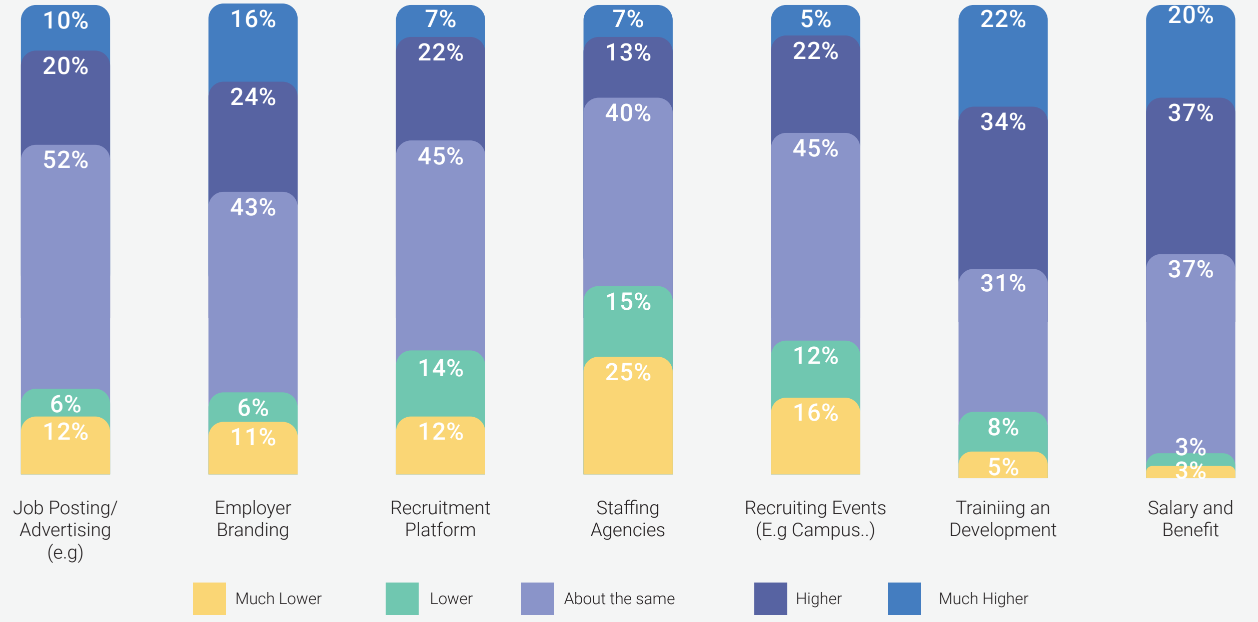
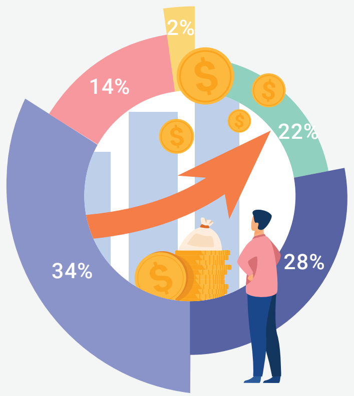
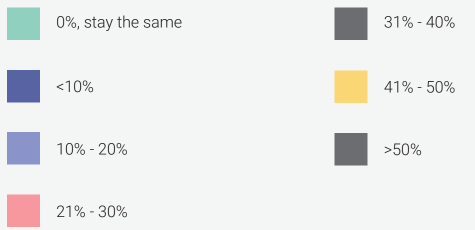


Figure 19: Changes in Salary Demand for New Talent Recruitment





9. Embrace disruptive technologies as it is inevitable

Most studios in Southeast Asia believe that disruptive technologies are inevitable and that it is important to explore potential benefits to the industry. However, disruptive technology in the digital content industry has been met with a mix of promise, genuine interest and fair criticism, as outlined below:

Table 1: Industry's View on The Disruptive Technologies

Positive

- Embrace disruptive technologies as it is inevitable. However, further study and understanding are vital before they can be widely adopted.
- Disruptive technology has tremendous potential to create new opportunities for businesses and talents in the digital content industry. For example, the investment trajectory of international funds and the demand for new skill sets or job roles, whereby more 3D expertise is needed in the metaverse and NFT industries.
- Web 3.0 will be beneficial to content developers as it results in increased demand for content.
- Virtual production has been proven viable in numerous real-world contexts. For example, real-time game engines and screen projection backgrounds have been used in the virtual production of a live-action series or film. This has increased production productivity and removed the need to use a green screen for computer-generated images (CGI) in the background.
- Blockchain in games is acceptable, provided it integrates well with the existing game economy. The integration should also offer real utility while maintaining the fun and entertainment aspects of the game.
- The huge increase in metaverse projects has amplified the need for cross-disciplined talent. As such, talents must keep up with new technologies and step out of their comfort zones in gaming or animation.

Negative

- Blockchain, metaverse, Web 3.0 and non-fungible tokens (NFT) are all fads. It is still too early to tell if the technology will fulfil its full potential.
- There is essentially no feasible application that adds value to the playing experience in blockchain and non-fungible token (NFT) games.
- The excitement surrounding the term "metaverse" largely stems from its somewhat abstract and hard-to-grasp concept.
- Disruptive technology is developing so rapidly that startup studios and employees struggle to stay abreast with new developments and resources.
- Disruptive technology has raised the cost of talent but not the quality of skill.
- New courses being offered in universities in response to disruptive technologies coupled with low demand in the region may result in a surplus of trained workers. While some will perform exceptionally well, most will be forced to enter other industries.
- Web 3.0 is subject to highly volatile conditions for investment and adoption. For instance, the industry's reliance on market conditions, such as the mid-year market crash due to the Russo-Ukrainian War, had a negative impact on Web 3.0 demand.

10. Studios prefer contract or permanent staff with a bachelor's degree, but freelancers offer more advantages

The findings from the survey showed that most studios prioritise skill sets and experience in addition to educational qualifications. The majority of studio employees possess bachelor's degrees (70%) (Figure 20) and work as either contract or permanent staff (Figure 21). The hiring preference based on employment types are summarised below (Figure 22):

Table 2: Reason for Preferred Employment Type

Preference of employment type	*Permanent*	*Contract*	*Free lancer*	*Interns*
Cost savings				●
Access to specialized talent		●		
High-quality work		●		
Faster deliverables	●			
Larger talent pool			●	
Company risk reduction		●		
No long-term commitment			●	
Ease of finding, hiring, and onboarding			●	
Increased diversity			●	
Schedule flexibility			●	
Short-term deadlines			●	
Fresh perspective			●	

Figure 20: Average Level of Education

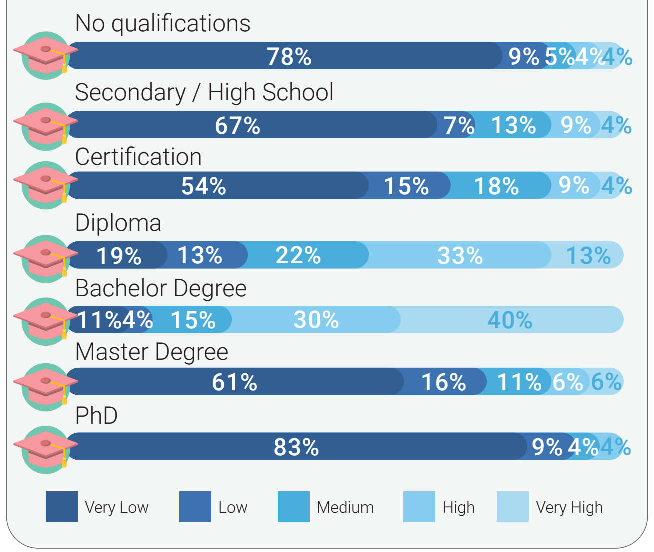


Figure 21: Preference of Employment Type

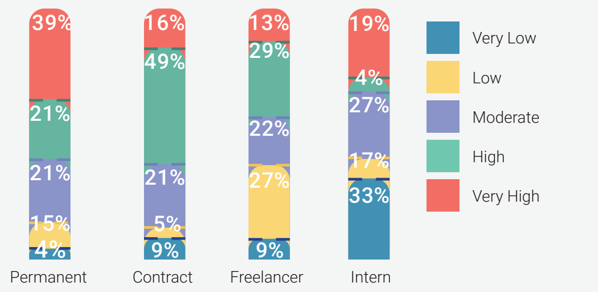
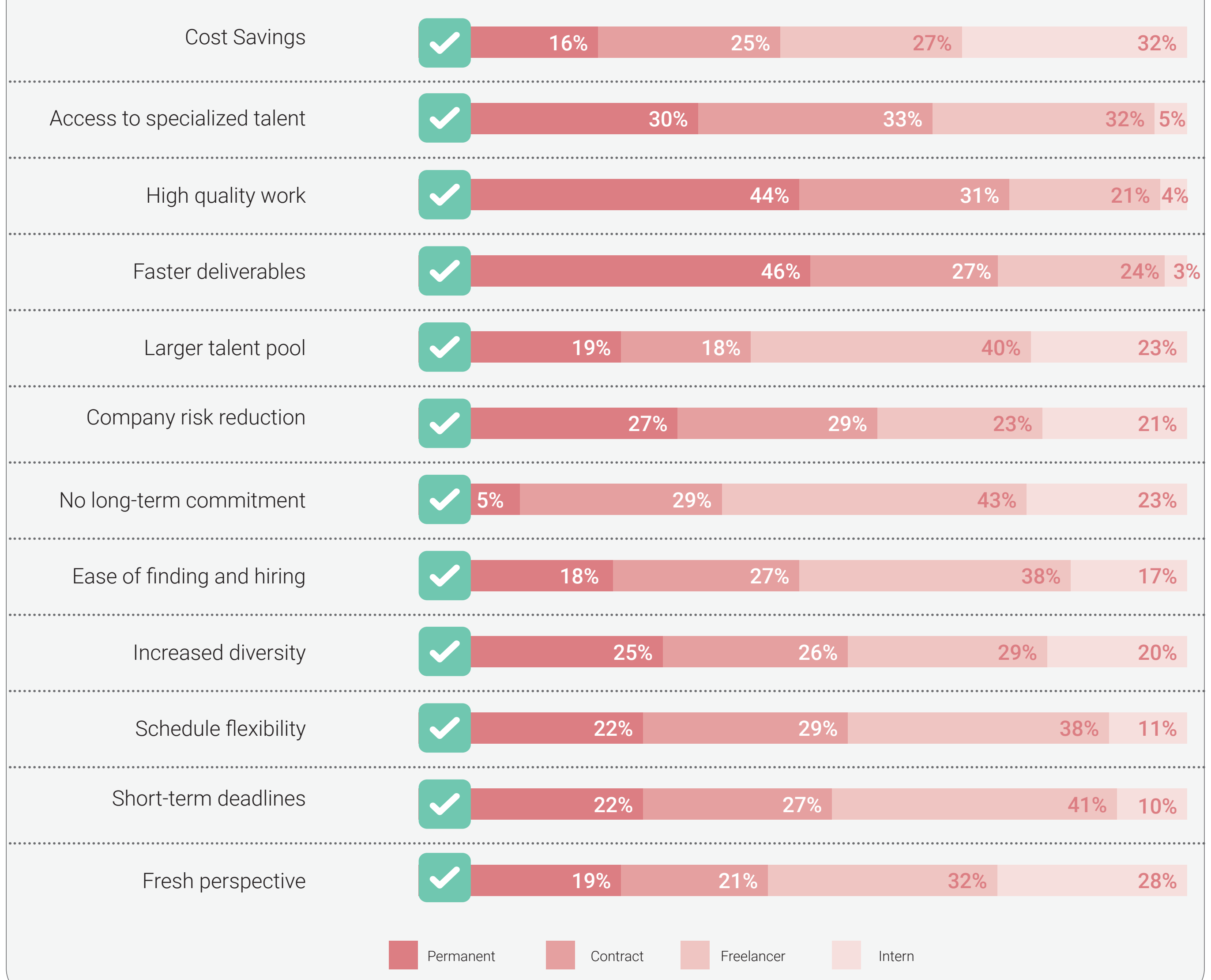


Figure 22: Reason for Employment Type Preference



11. Demand for talent to grow at +7.59% CAGR in the next 3 years

For the following three years, the talent demand in the digital content industry in the SEA region is predicted to increase by 7.59% year over year (Figures 23 and 24).

Over the years, the technical skills that have been the hardest to recruit include creativity, storyboarding, game concept design, and quality assurance testing skills.

Similarly, among the technical roles that have been the hardest to fill are storyboard artist, programmer, animator, VFX compositor, effect artist, modeller, 3D artist, 2D artist, Unity tech art and developer, Unreal technical artist, pipeline technical director, technical artist, audio programmer, technical sound designer, project manager, concept artist, illustrator, CG supervisor, clothes simulation artist, hair and fur groom artist, generalist, real-time technical artist, video game community manager, scriptwriter, and game digital marketer.

The top three (3) most in-demand soft skills (Figure 25) are:

- Collaboration
- Problem-solving skills
- Communication skills

The pre-production, production, and post-production stages of game and animation development necessitate close collaboration and open communication among team members.

Figure 23: Current Number of Employees Based on The Employment Type

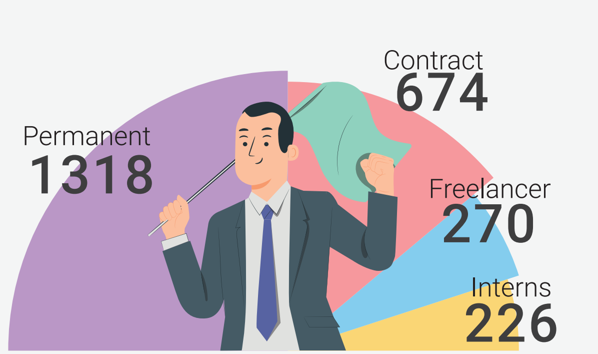


Figure 24: Projection Number of Employees Based on the Employment Type for The Next 3 Years

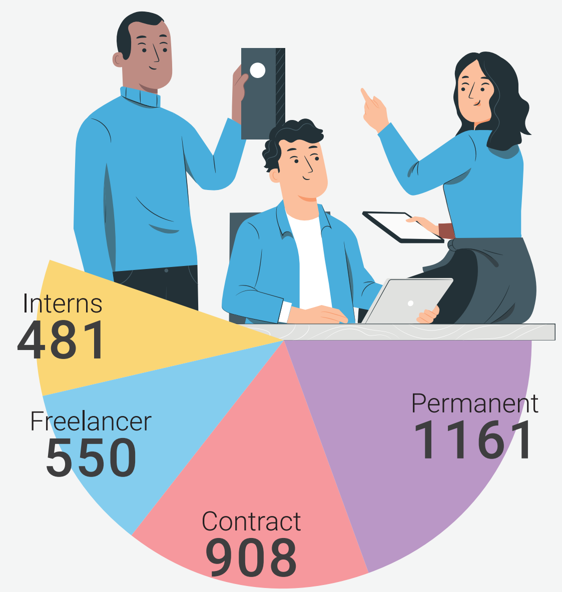
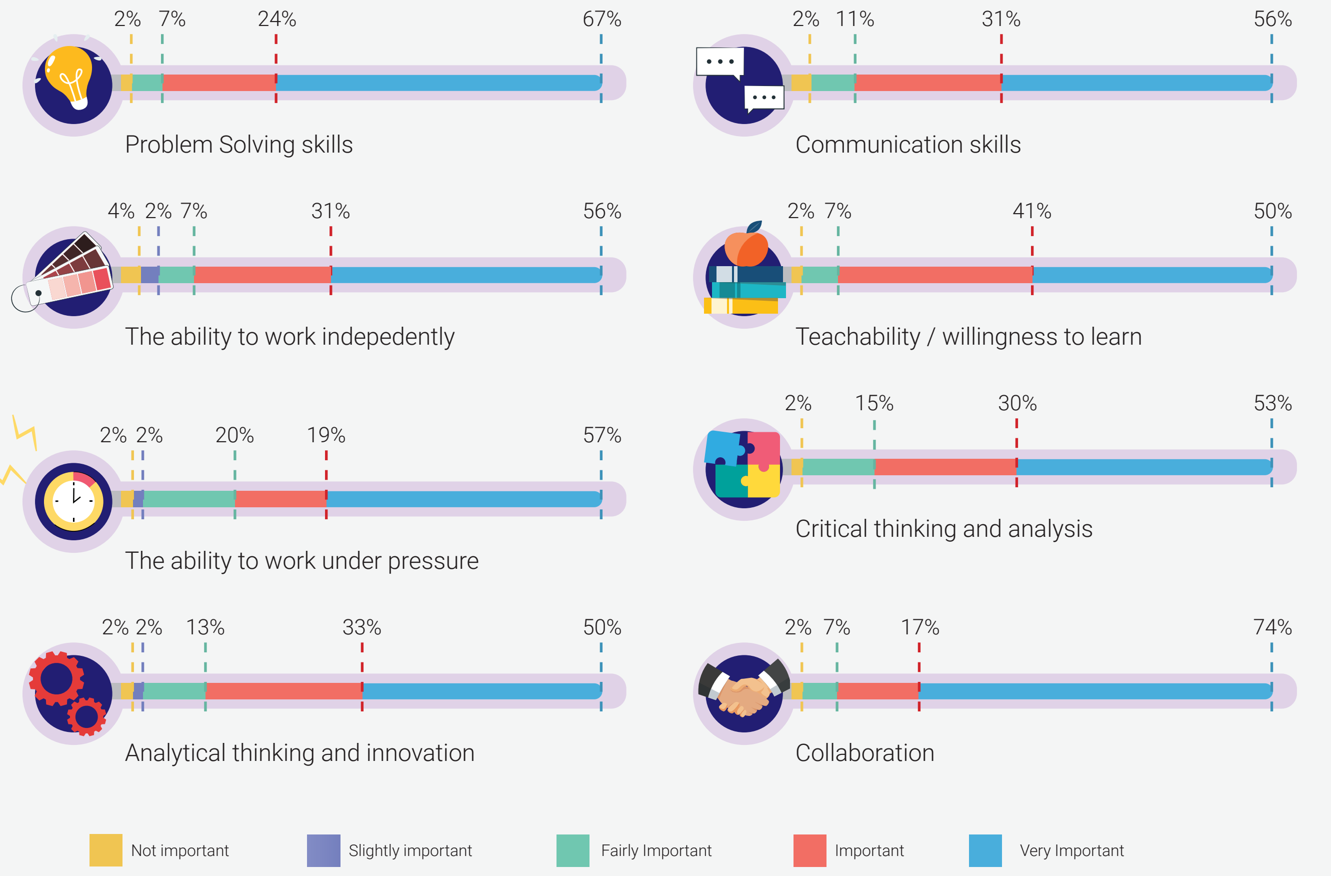


Figure 25: The Most In-demand Soft Skills



12. Higher salary demands and a scarcity of specialists pose a significant barrier

The majority of studios are facing significant challenges in hiring because talents are demanding higher salaries than what the company can offer (28%), and the shortage of specialists or talent with technical skills (24%) in the talent ecosystem (Figure 26). For those with experience, freelancing is viable as clients are more open to paying lesser rates for their services. The growing number of international companies establishing operations in SEA has also increased the competition for the region's talent pool.

The standard practice for studios to reduce recruitment issues (Figure 27) include:

- Upskilling existing employees to fill hard-to-recruit positions (72%)
- Offer greater work flexibility (61%)
- Recruiting candidates with potential but lack experience (54%)

Interestingly, despite recruitment difficulties, most SEA studios are not open to the idea of bringing in talent from outside the region (35%) but instead do look towards some form of outsourcing (35%) among other mitigation measures to tackle the hiring challenge.(Figure 27).

Figure 26: Reasons for Recruitment Difficulties

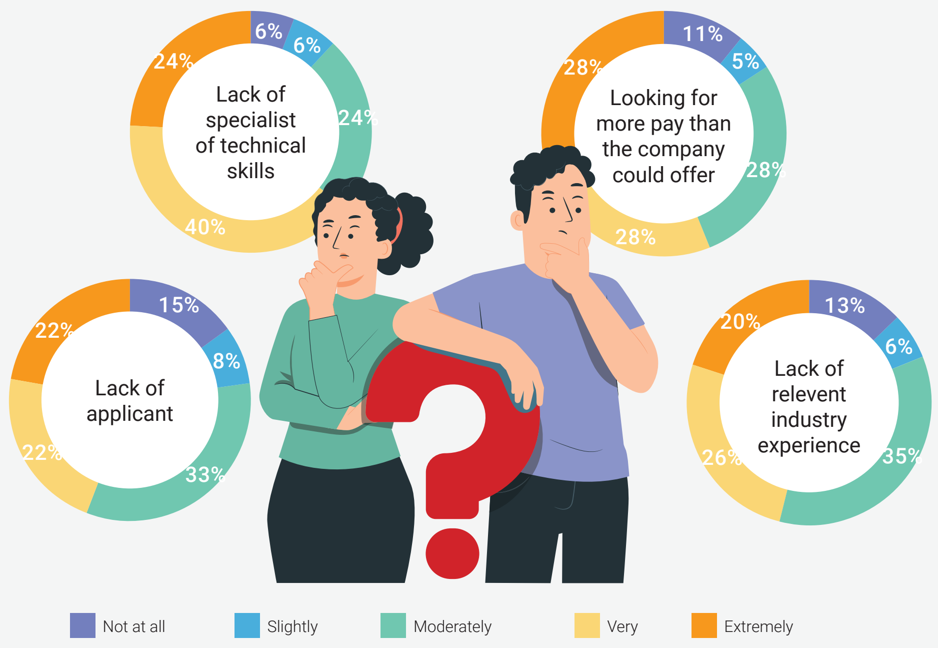


Figure 27: Methods Studios Mitigate The Challenge of Recruiting

13. The importance of a well-defined mission and values in an organisation to attract top talents, preferably from the region

The most significant aspects of an employer's brand for attracting potential talent are the organisational value (44%), company goal and strategy (41%) and career development opportunities (37%) (Figure 28).

The three most effective methods used in hiring talents (Figure 29) are:

- By encouraging speculative applications/word of mouth (26%)
- Internal advertising to the existing talent pool (24%)
- Linking with schools/colleges/universities (22%)

Currently, most studios are providing administrative support (24%) to entice international talent, and are unlikely to consider offering clear and generous relocation benefits (39%) (Figure 30). Furthermore, 39% of studios have less than 10% of foreign employees within their company, while 40% do not hire international talent at all (Figure 31). Several factors contribute to this, including:

- The majority of studios in the region are small scaled
- The salary offered is unattractive to talent from Western countries
- Hiring talent from Southeast Asian countries is preferred

Figure 28: Employer Brand for Talent Attraction

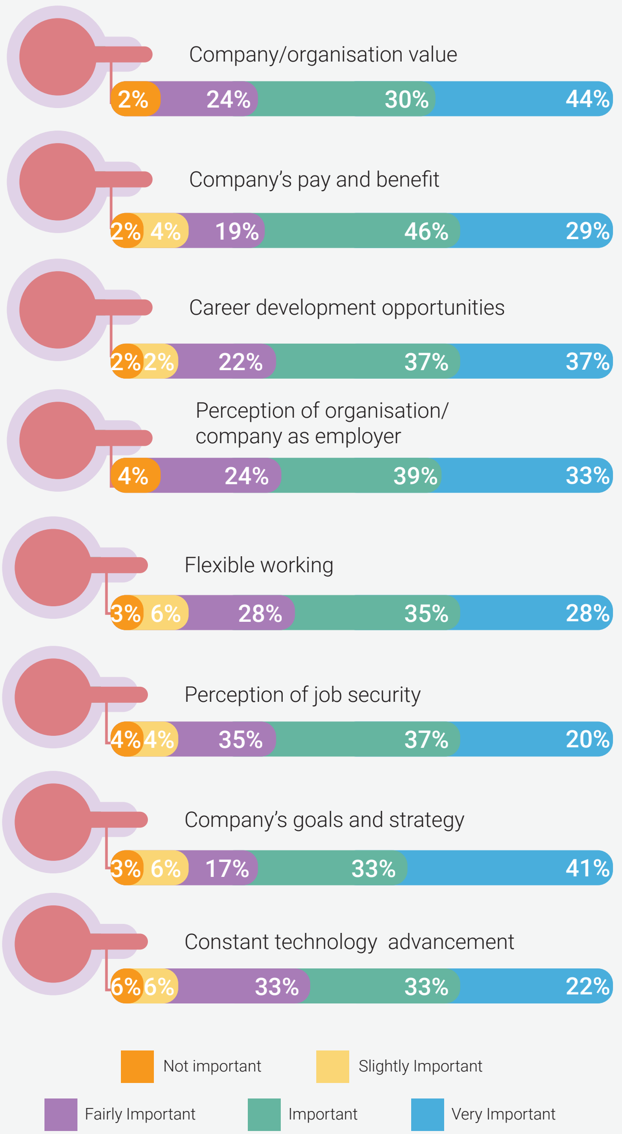


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Figure 29: The Most Effective Methods for Hiring Talent

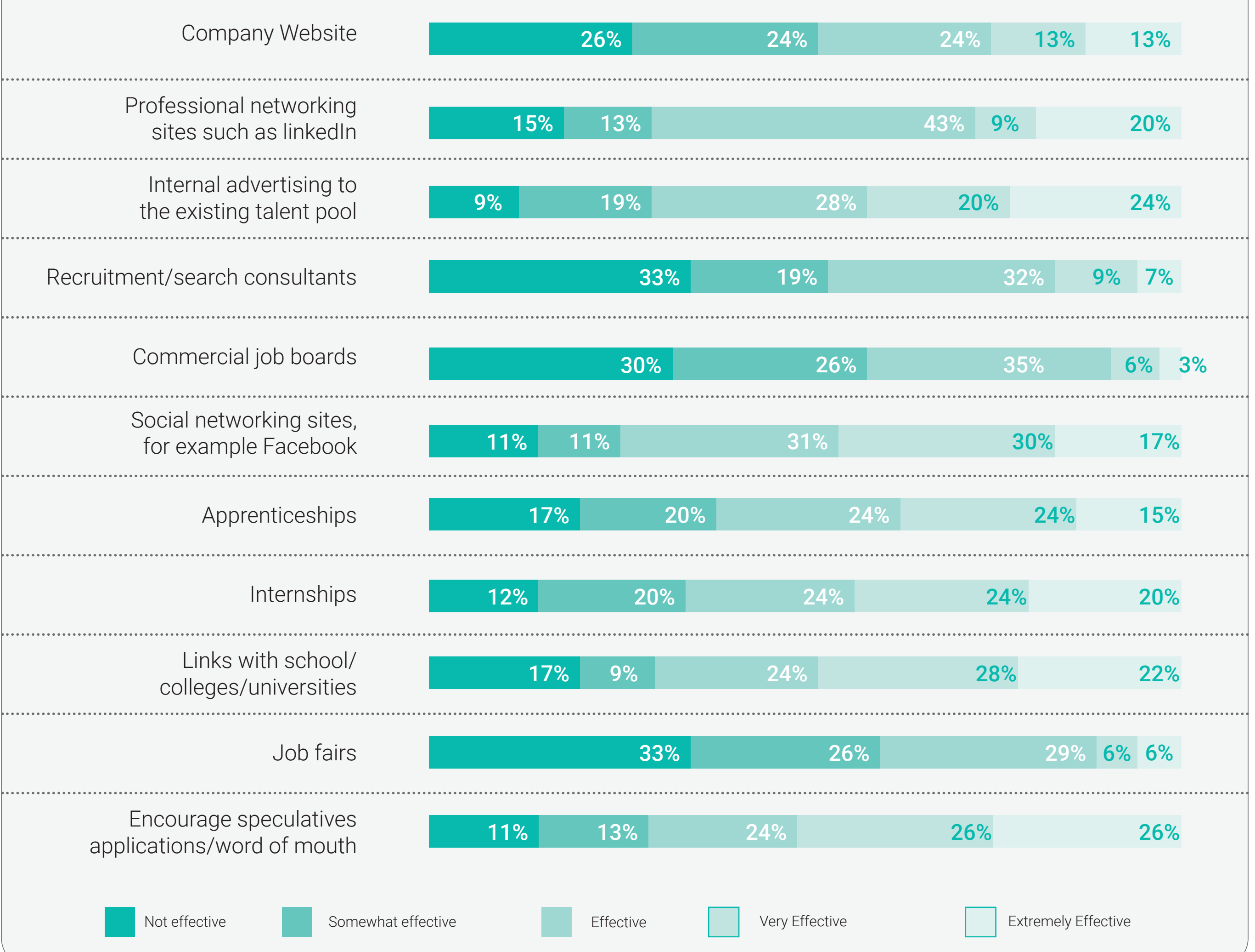

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Figure 30: Ways To Attract International Talent

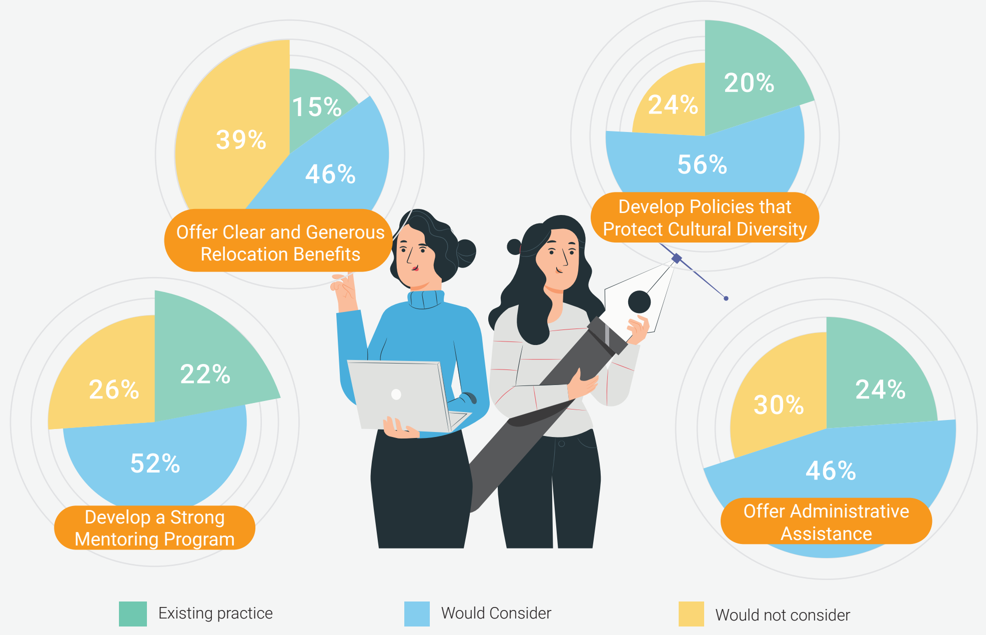
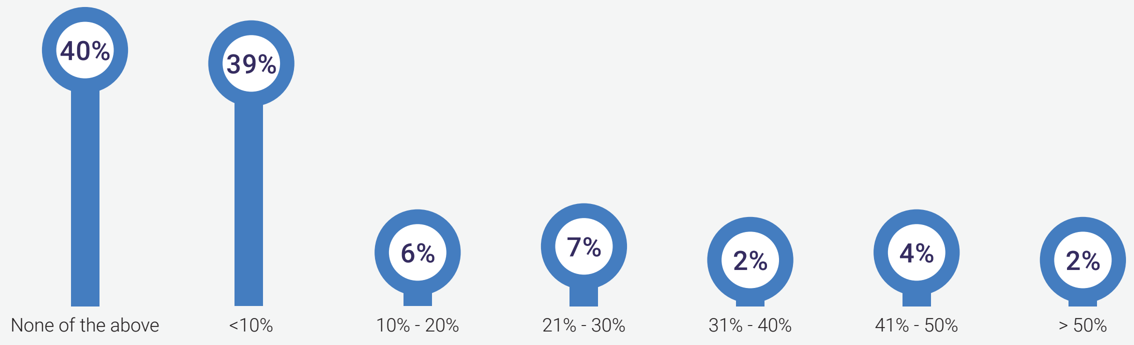


Figure 31: Percentage (%) of Foreign Talents



14. Among employee retention strategies are increased salary, promotion of work-life balance and training development

For the past three (3) years, most studios (46%) had an average employee retention rate of less than 70% (Figure 32). The survey indicated that the following are effective measures implemented (Figure 33) to improve employee retention:

- Increased pay (35%)
- Other changes were made to improve work-life balance (32%)
- Created clearer career path (28%)

Besides, talents with four (4) to seven (7) years of experience (28%) are highly difficult to retain, while talents with experiences beyond seven (7) years are the least likely (35%) to leave the studios (Figure 34).

As such, most studios promote work-life balance (63%) and provide in-house training (53%) to boost productivity and performance (Figure 35).

Figure 32: Average Employee Retention Rate Over the Past 3 Years

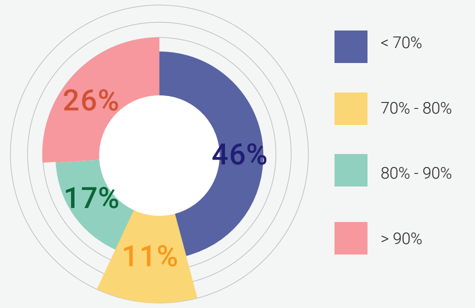


Figure 33: Steps Taken To Improve Employee Retention

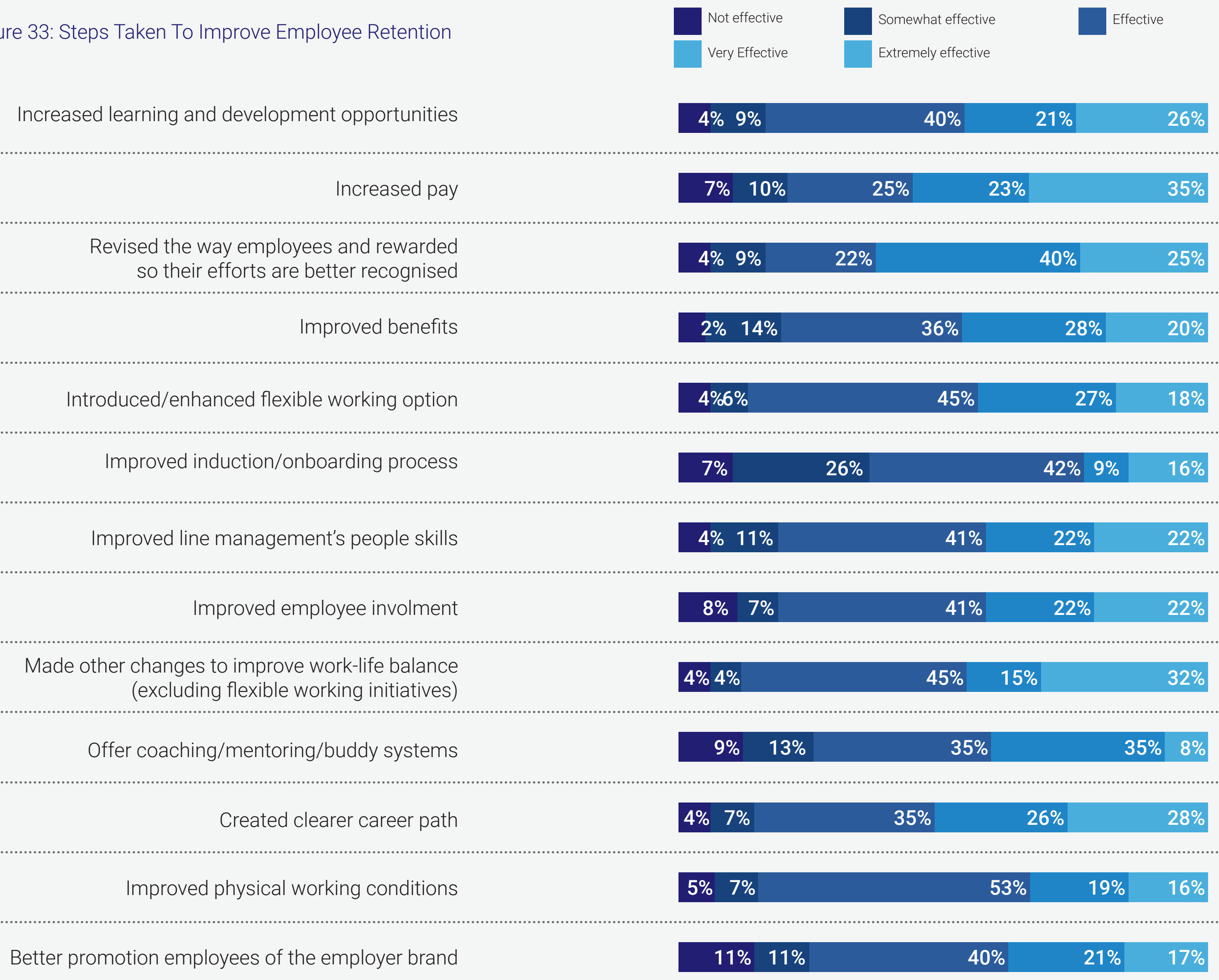


Figure 34: Group of Talent with Years of Experience That Is Difficult To Retain

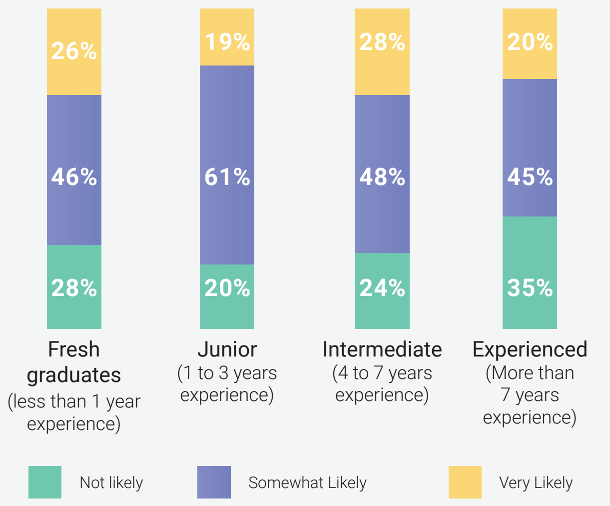
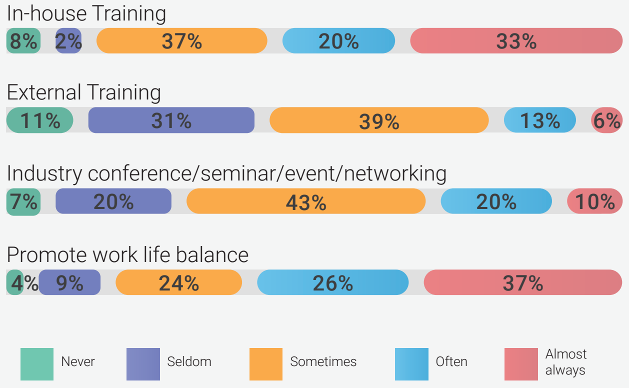


Figure 35: Ways of Company Helps Employees Improve Work Quality and Frequency



15. Institutes of Higher Learning (IHLs) play a significant role in graduate employability

Most studios (63%) believe that Institutes of Higher Learning (IHLs) can significantly improve graduate employability through industry partnership programs (Figure 36). Other factors, such as enhanced educator competency and student attitude, are also deemed essential to increase graduate employability.

IHLs graduates who were provided with industry-driven courses, teaching and learning strategies (50%), and education on workplace skills, ethics and professionalism (50%) were given priority for employment by studios (Figure 38).

When establishing partnerships and collaborations with IHLs, studios most commonly face challenges in securing financial support (61%), followed by inadequate time and resources (52%) (Figure 37).

Figure 37: Challenges in Collaborating with The Institutes of Higher Learning (IHLs)

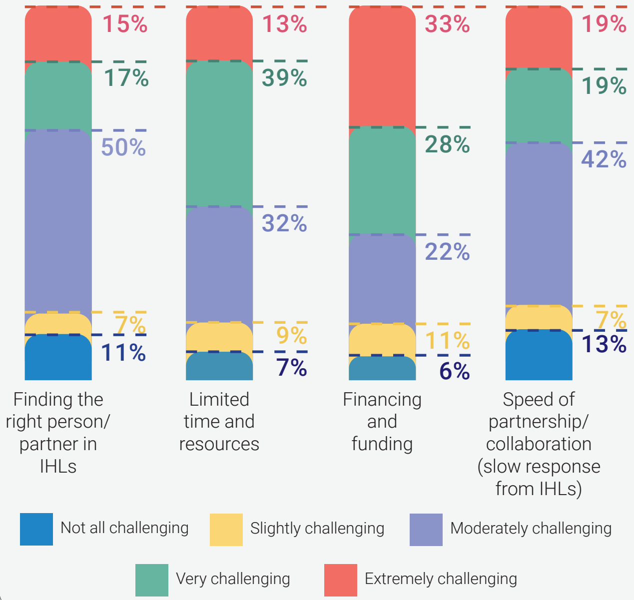


Figure 36: Ways of The Institutes of Higher Learning (IHLs) Improve Graduate Employability with Connections To Industry

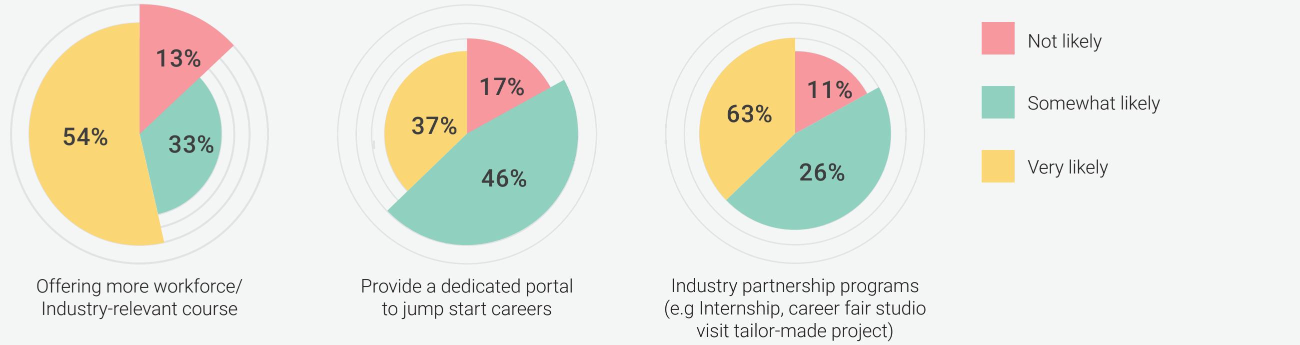
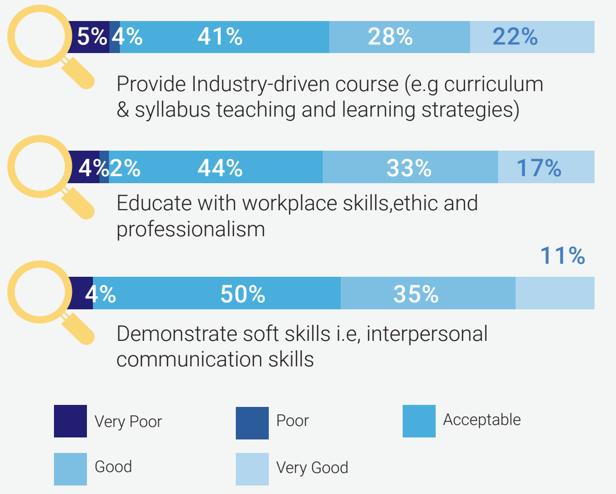


Figure 38: Preference for Recruiting Graduates from The Selected Institutes of Higher Learning (IHLs)



16. Government to support industry-oriented education system and financial assistance in talent development

Most studios strongly recommended the following measures (Figure 39) to build a skilled workforce, ensuring strong, sustainable and balanced growth:

- The education system should respond better to industry requirements (54%)
- Provide clarity on available resources (i.e. funding for skills/technology) that were open to various stakeholders (35%)

37% of studios in SEA believe that government support for the talent ecosystem is acceptable (Figure 40). However, the government may improve the talent and workforce ecosystem even further by offering wage subsidies (60%) and financial training assistance (57%) (Figure 41).

Figure 39: Recommendation To Build A Skilled Workforce for Strong, Sustainable and Balanced Growth

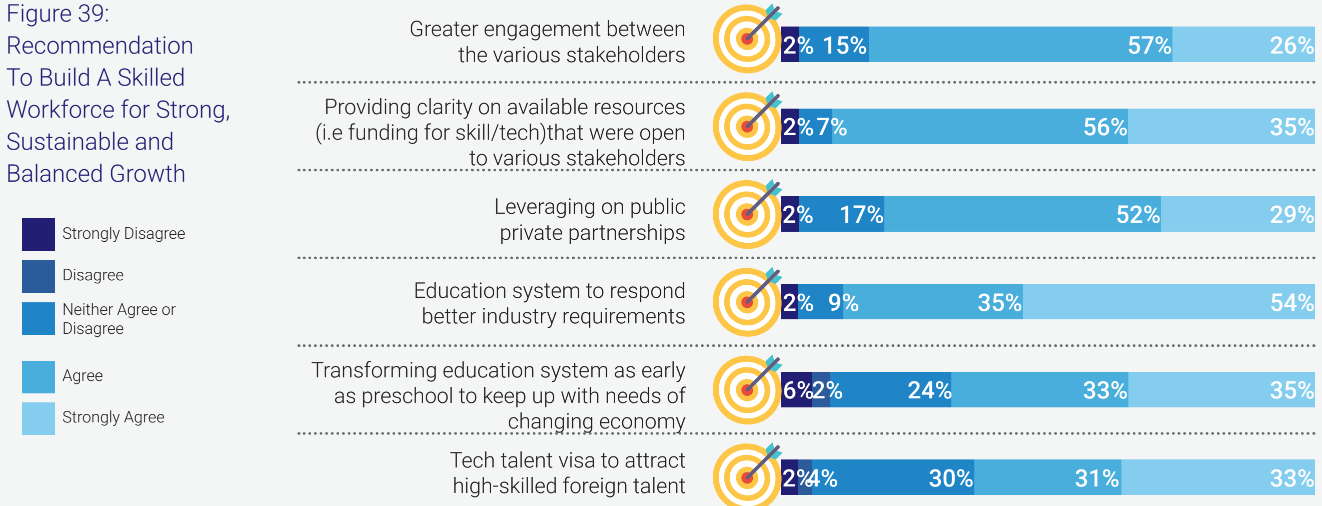


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Figure 40: Government Support for The Talent Ecosystem

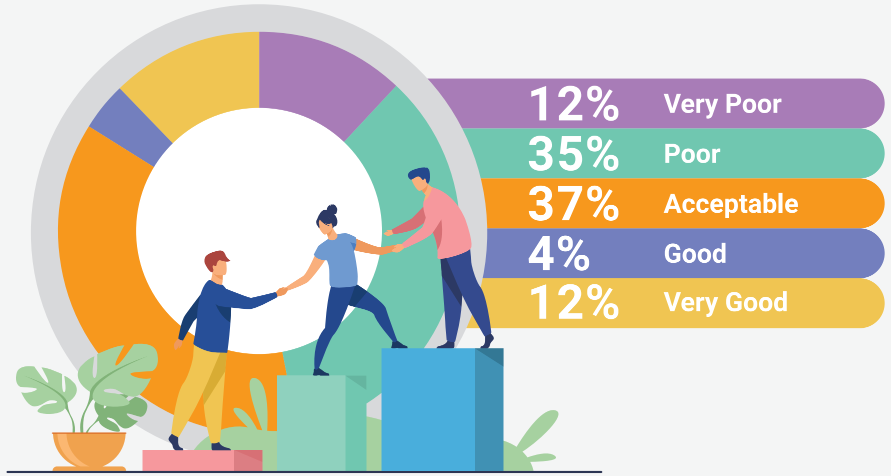
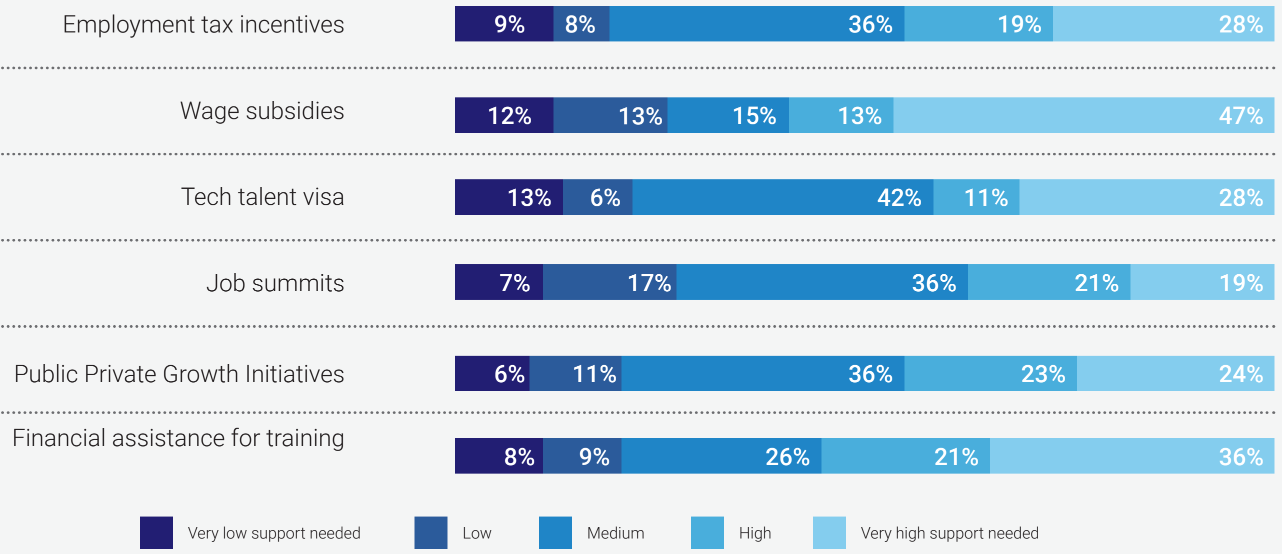


Figure 41: Type of Government Supports Needed for Talent and Workforce Ecosystem Improvement



INSIGHTS & OBSERVATION

Figure 42: Average Salary Range Based on The Job Roles

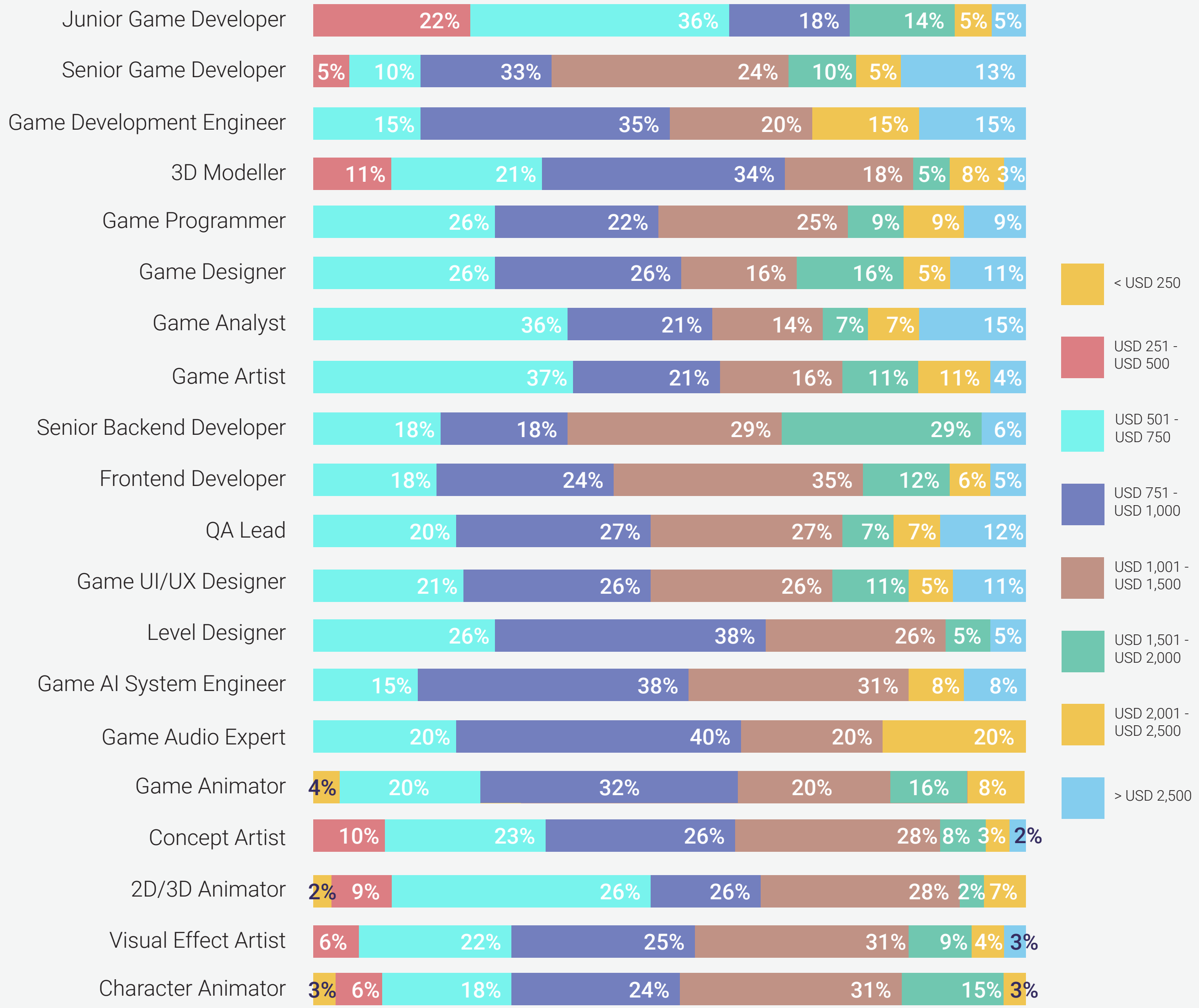
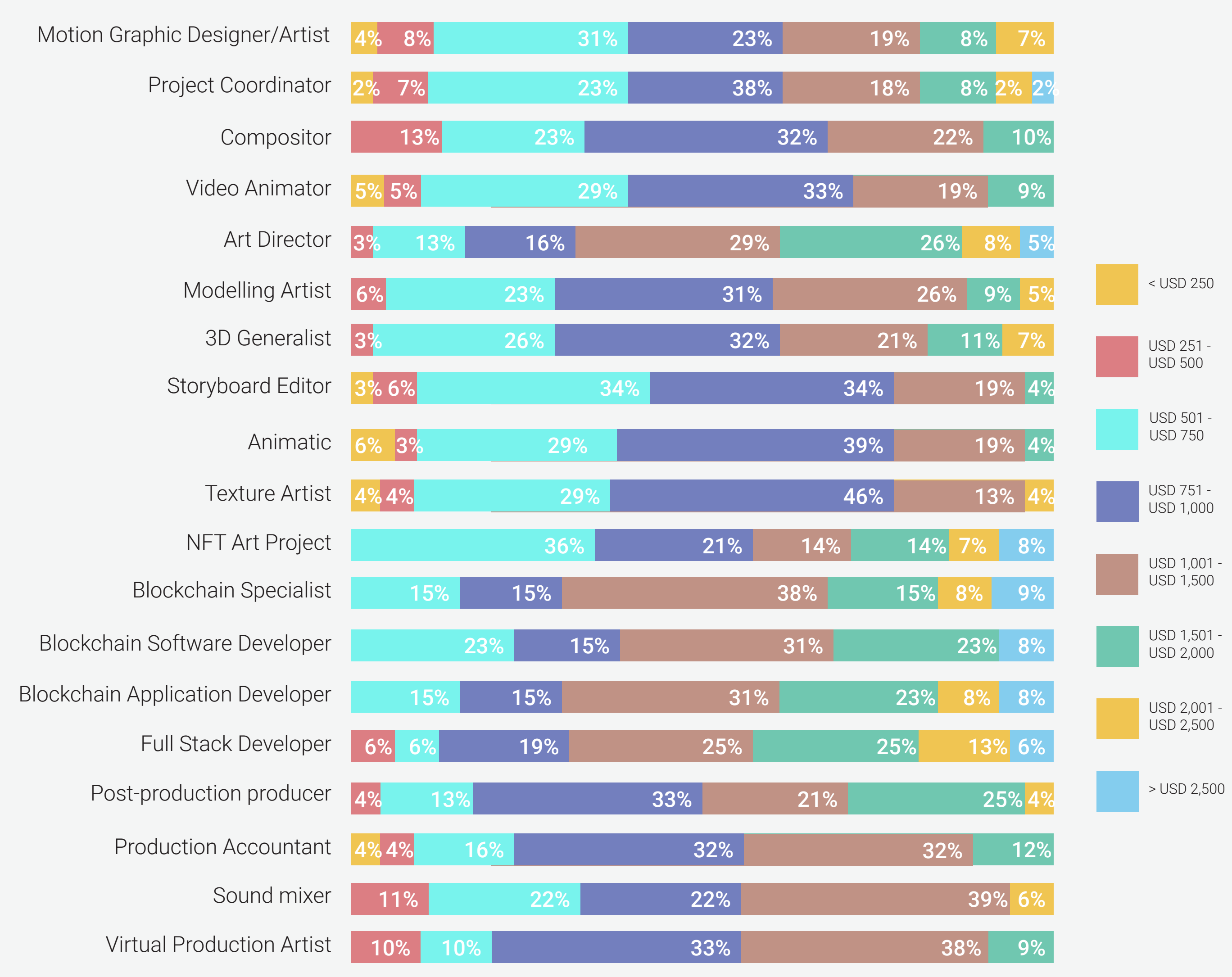


Figure 42: Average Salary Range Based on The Job Roles



INSTITUTIONS OF HIGHER LEARNING (IHLS)

1. Talent Landscape: Overview of Digital Content Industry in Southeast Asia

Over the next three years, the talent demand in Southeast Asia's digital content industry is expected to rise at a CAGR of 7.59% (Figures 23 and 24), with most studios highly recruiting graduates possessing at least a diploma (46%) or bachelor's degree (70%) (Figure 20).

In today's competitive job market, the employability of graduates has become an essential determining factor in assessing educational success. However, there has been debate about whether higher education should solely focus on teaching students foundational knowledge or nurturing them to be industry-ready.

There have been consistent concerns in the industry about the lack of fitting skills due to academic programs that cannot keep up with industry requirements. With the increased complexity of skills needed in the current job market, it is now more important than ever for graduates to have both hard and soft skills.

A total of 30 higher education institutions across Southeast Asian countries, consisting of Malaysia, Philippines, Singapore and Thailand, participated in the online survey.

Of the respondents, the higher education institutions are public universities (37%), private higher education (37%) and polytechnics (13%) (Figure 43). The higher education institutions mainly offer bachelor's degrees (73%) (Figure 44) and have more than five intakes per year (37%) (Figure 45).

Typically, the duration of the programs or courses for a bachelor's degree is at least three years (43%) or more (50%) (Figure 47), with more than 50 graduates per year (Figure 48).

Figure 43: Type of Institutions of Higher Learning

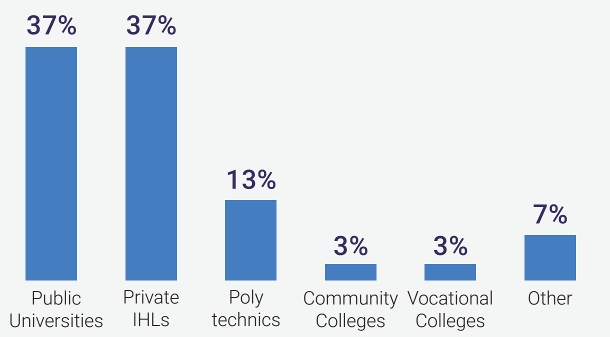


Figure 44: Level of Education Offered by Institutions of Higher Learning in Relation To Digital Content Programs/Courses

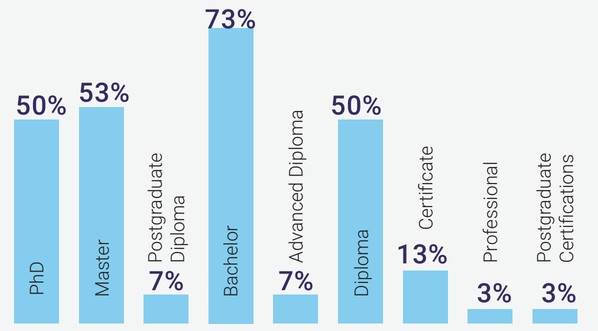
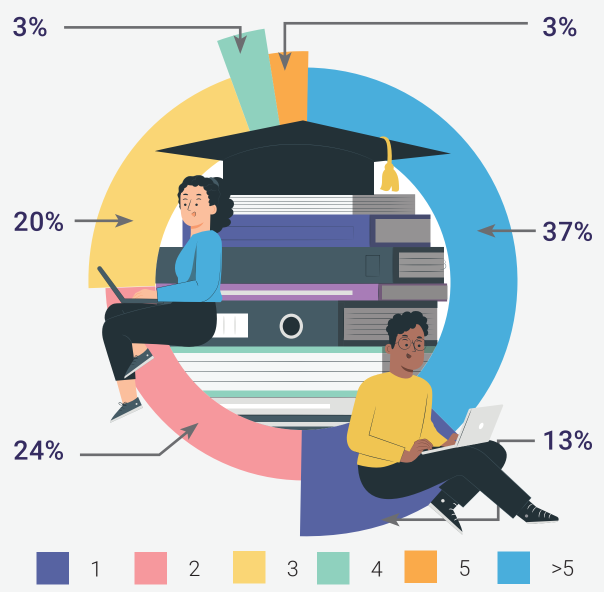


Figure 45: Intake per Year



2. Animation and game programmer/game tech graduates are on the decline from 2019 - 2021 due to the impact of COVID-19 but since then, student enrollment is rising

Higher education institutions offer a variety of programs/ courses related to the digital content industry, ranging from art to programming (Figure 46). Based on the trend of the number of graduates from 2019 to 2021, the findings show that:

- There was a decline in animation and game programmer/technology graduates.
- In contrast, the number of graduates in game arts and concept art was increasing.
- The number of graduates in game design and visual effects followed a steady pattern

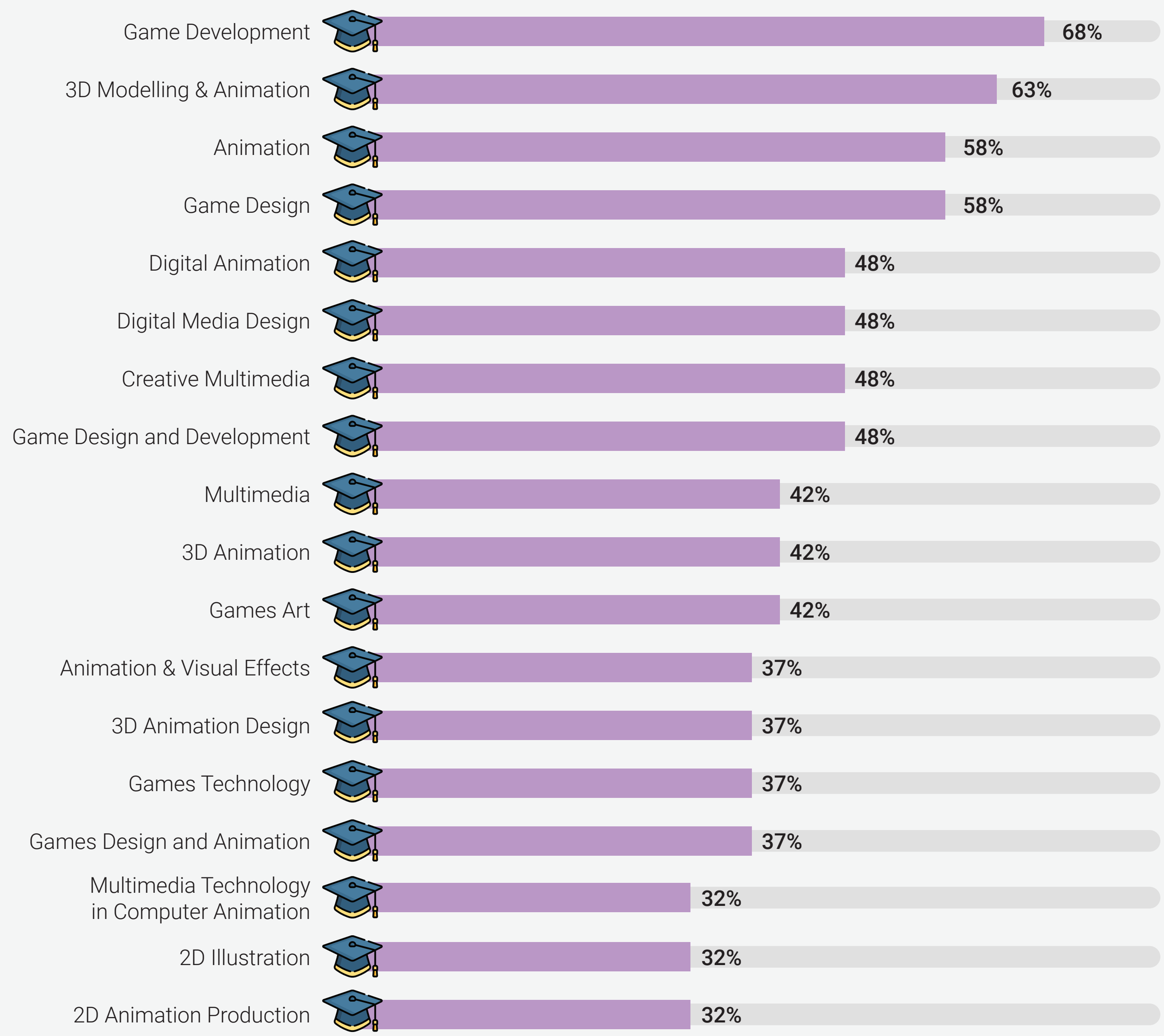
The number of graduates based on specialisation and feedback from the majority of higher education institutions is summarised below (Figures 49, 50 and 51):

Table 3: Number of Graduates Based on Specialisation from 2019-2021

Specialisation	2021	2020	2019
Animation	*10 - 20*	*21 - 30*	*21 - 30*
Game design	*<10*	*<10*	*<10*
Game programmer/Game Tech	*<10*	*<10*	*10 - 20*
Game Arts	*10 - 20*	*<10*	*<10*
Visual Effect	*10 - 20*	*10 - 20*	*10 - 20*
Concept Art	*> 50*	*41 - 50*	*41 - 50*

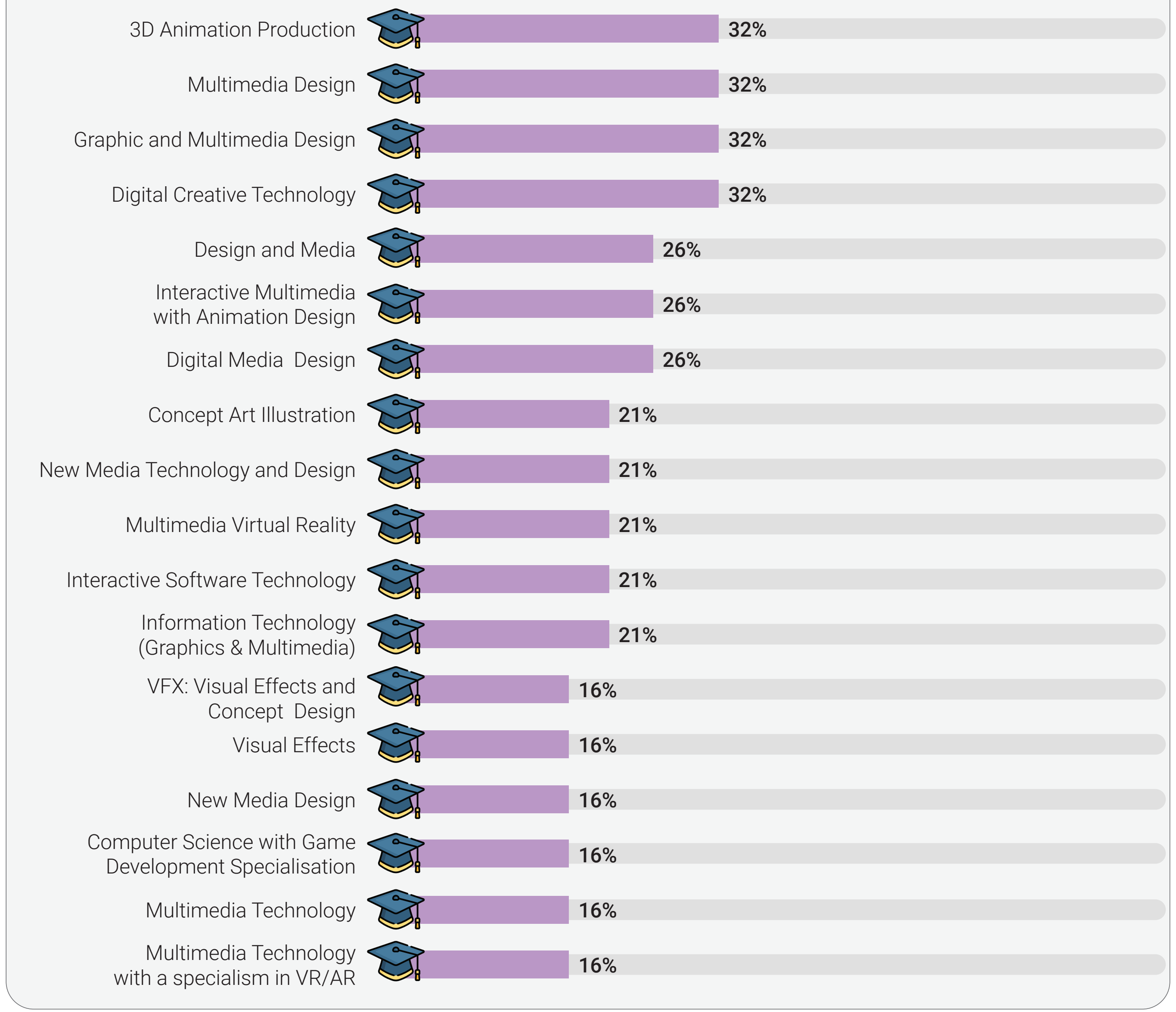
INSIGHTS & OBSERVATION

Figure 46: Available Programs/Courses Related to The Digital Content Industry



INSIGHTS & OBSERVATION

Figure 46: Available Programs/Courses Related to The Digital Content Industry



INSIGHTS & OBSERVATION

Figure 46: Available Programs/Courses Related to The Digital Content Industry

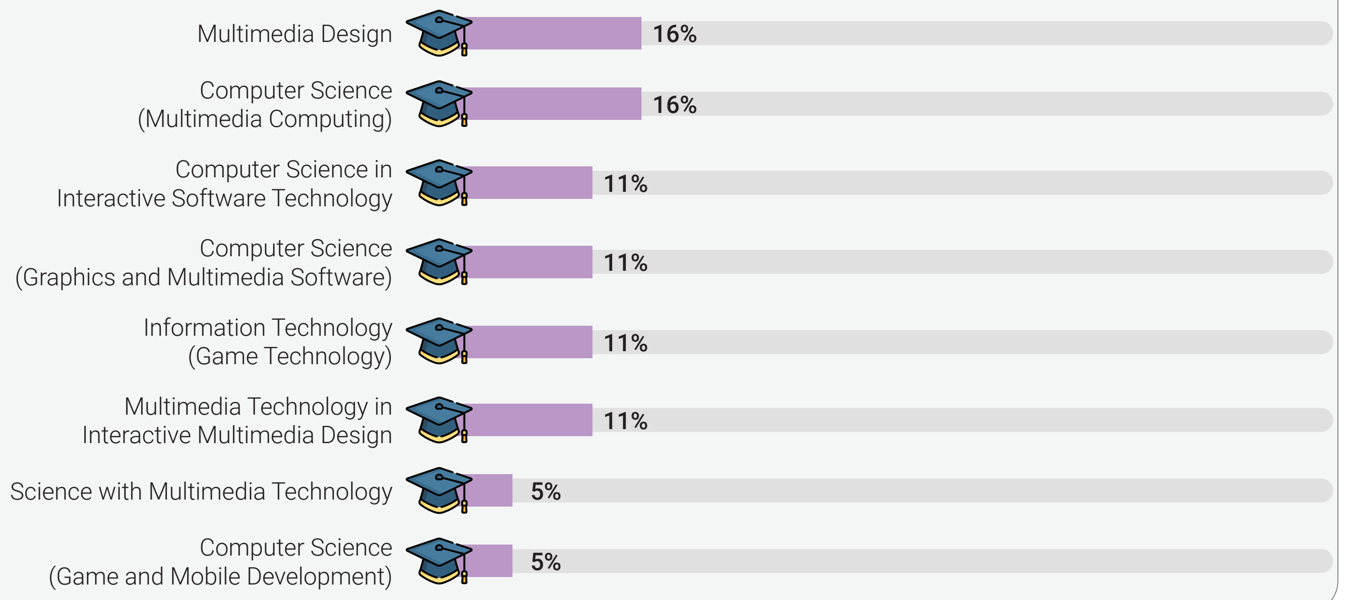
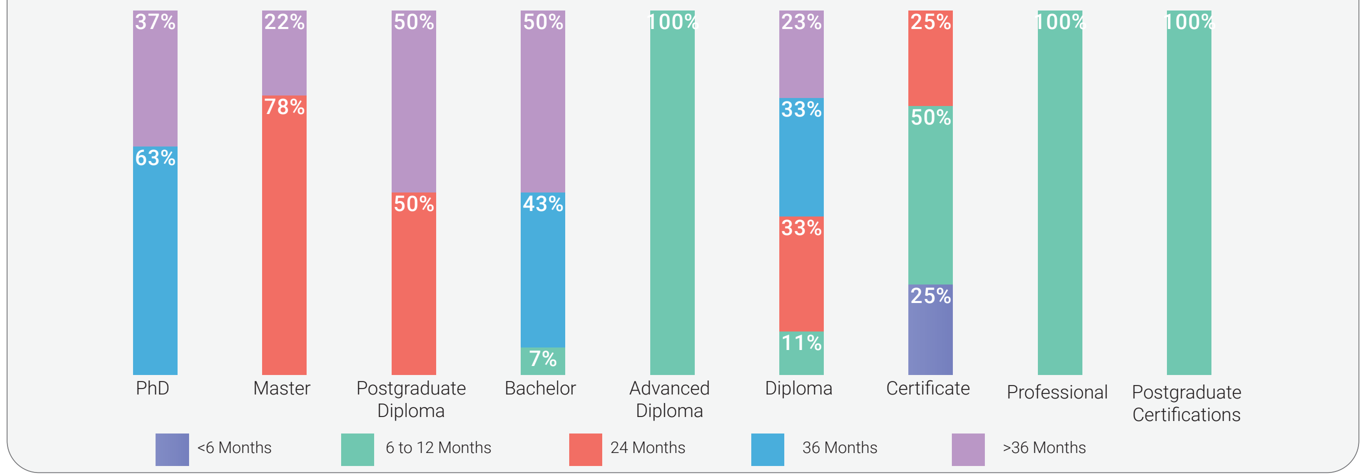


Figure 47: Duration (months) of the Programs/Courses in Relation to The Digital Contentlindustry by Category



INSIGHTS & OBSERVATION

Figure 48: Number of Graduates per Year in Relation To The Digital Content Industry by Level of Education

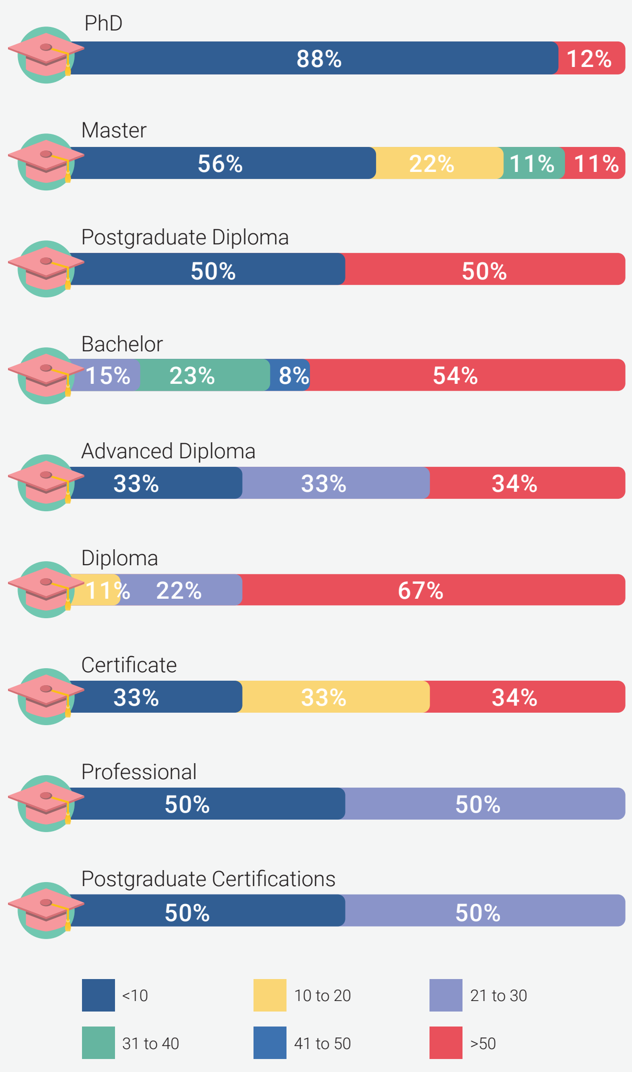
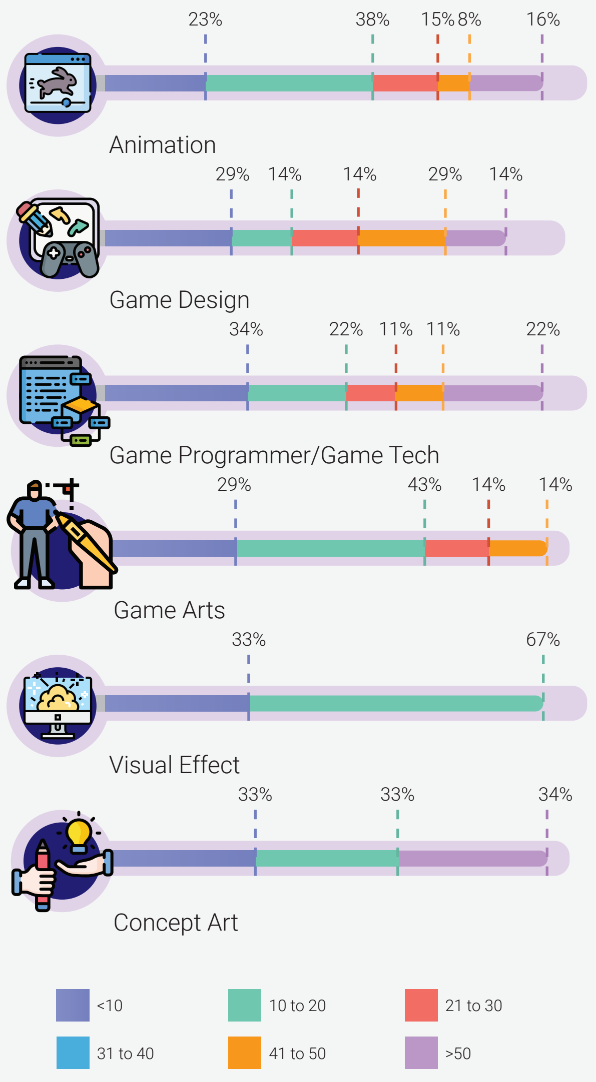


Figure 49: Number of Graduates Based on Specialisation in 2021



INSIGHTS & OBSERVATION

Figure 50: Number of Graduates Based on Specialisation in 2020

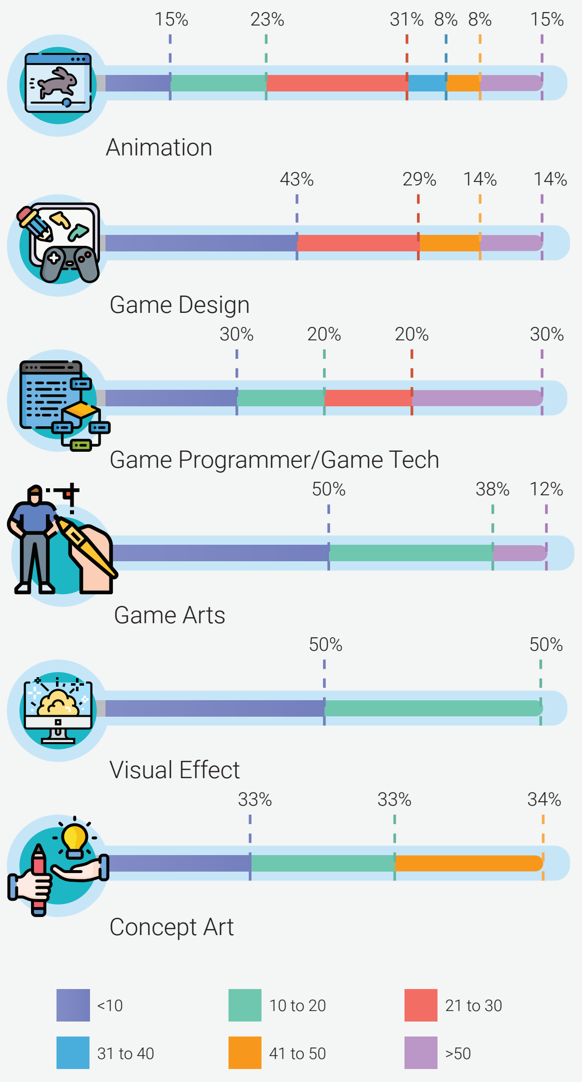
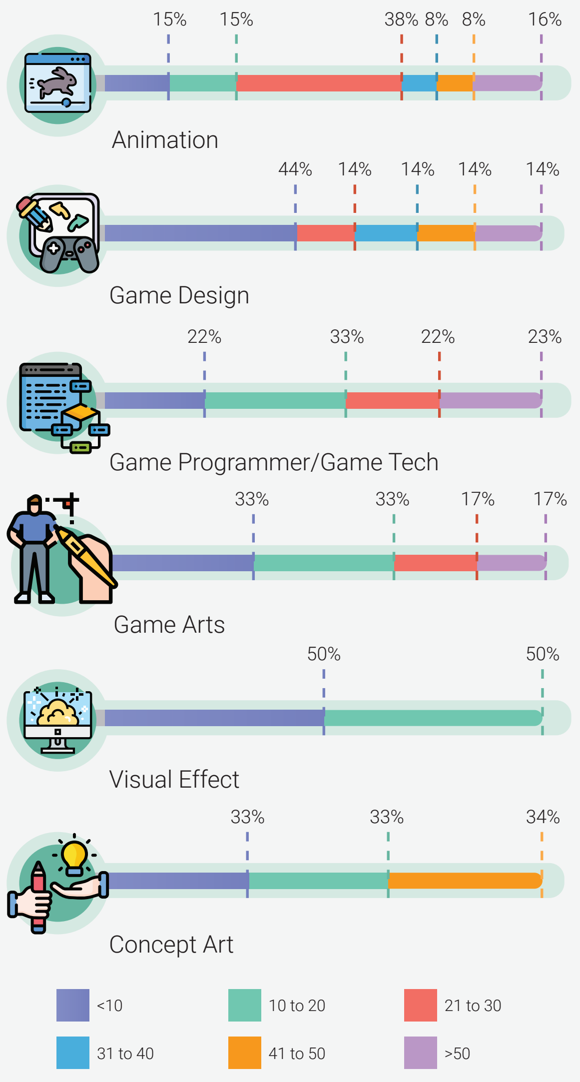


Figure 51: Number of Graduates Based on Specialisation in 2019



3. Employment opportunities are influenced by the performance of graduates who have received industry-relevant education

Most (47%) higher education institutions have a graduate employability rate of over 90% (Figure 52). From their perspective, the following are considered to be the most effective strategies (Figure 54) to enhance graduate employability:

- Working experience/internship placements (94%)
- Industry networking (78%)

Key factors influencing graduate employability include academic performance and technical skills (89%), curriculum design by IHLs (84%) and competency of lecturers (78%) (Figure 53). Additionally, it is also essential to provide a dedicated portal to jump-start graduates' careers (67%) and set up industry partnership programs (67%) (Figure 55). Even so, the number of graduates is also affected by student attribution, which is attributed to the following factors (Figure 56):

- Lack of financial assistance (45%)
- Low salary (44%)
- Unclear career path (45%)

It is likely that students are leaving their programs because they perceive that the digital content industry offers unclear career pathways and minimal salaries. Therefore, the general public must be made aware of the tremendous potential that the industry possesses to educate both parents and future talent.

Figure 52: Employability Rate of Graduates

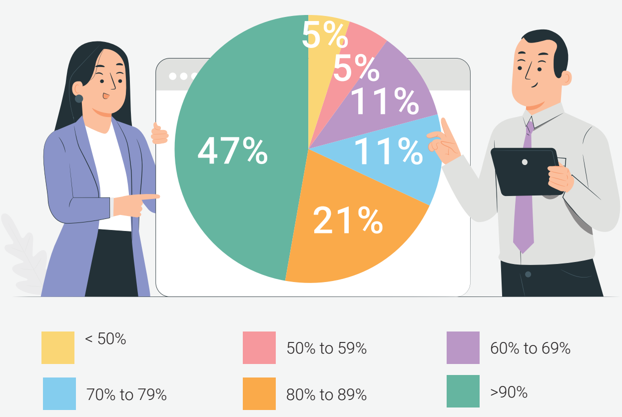


Figure 54: Strategies To Improve Graduates' Employability

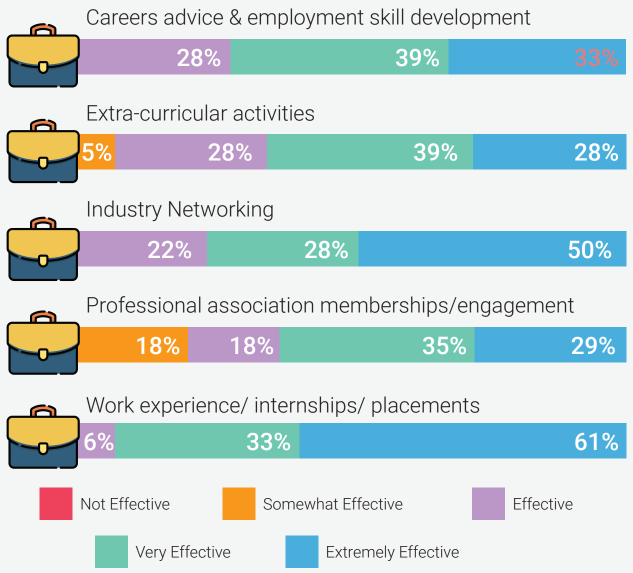
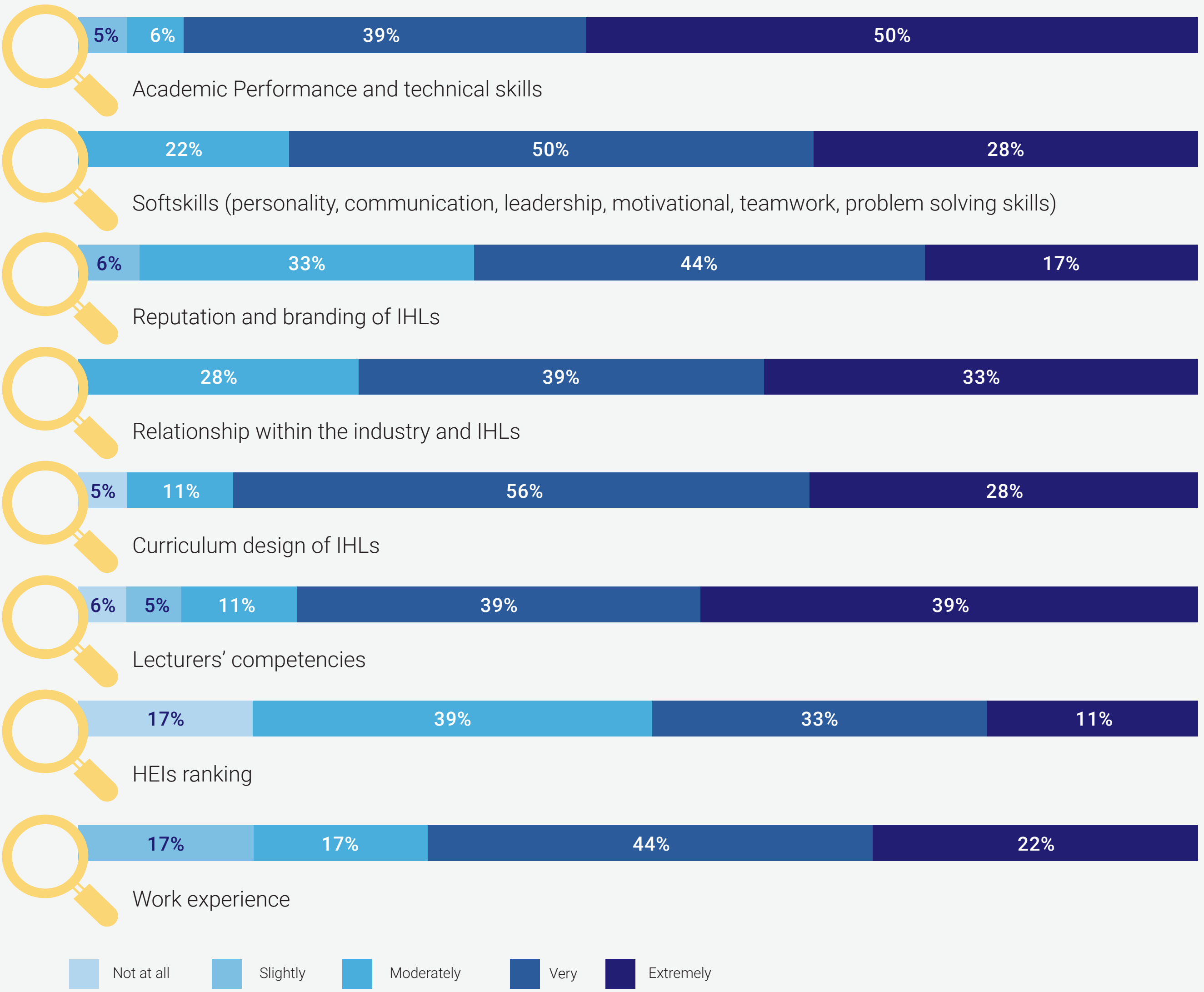


Figure 53: Factors That Affect The Graduate Employability Rate



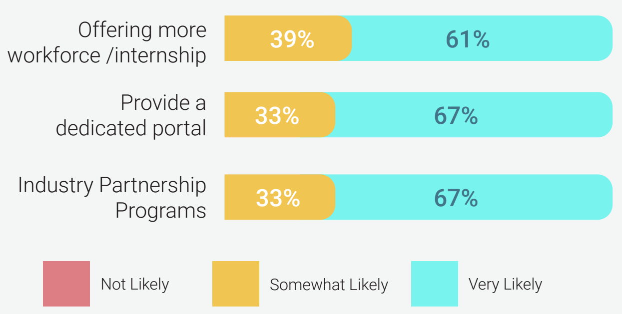


Figure 55: Ways To Improve Graduate Employability

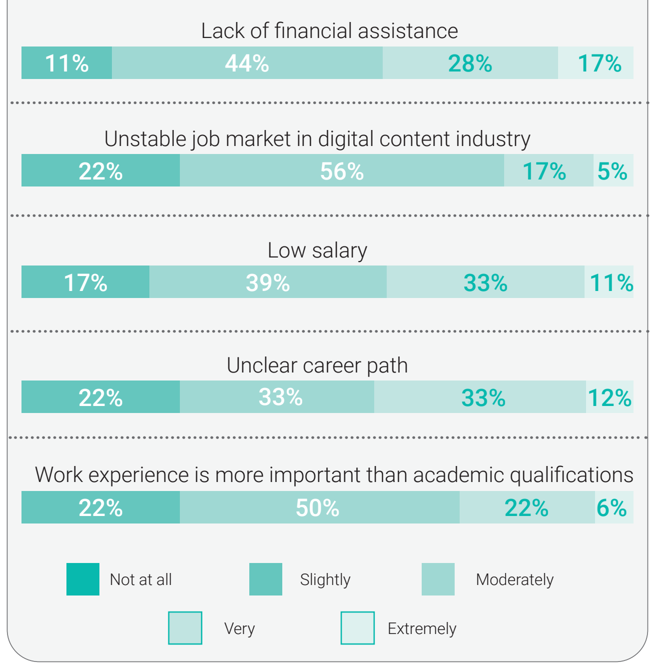


Figure 56: Factors for Students' Dropouts

4. There is a rise in student enrolment and a thriving job market

Most higher education institutions are of the opinion that the employment market for fresh graduates has been growing in terms of job market activities (67%) and the number of self-employed or freelancers (56%) (Figure 57). This year, an upward trend is also apparent in student enrolment (61%) (Figure 58).

Among the essential areas of improvement to promote student enrolment (Figure 59) are:

- Industry recognition and network (56%)
- Student support (i.e. scholarships, facilities and infrastructure in IHLs) (44%)
- Job placement opportunities (39%)

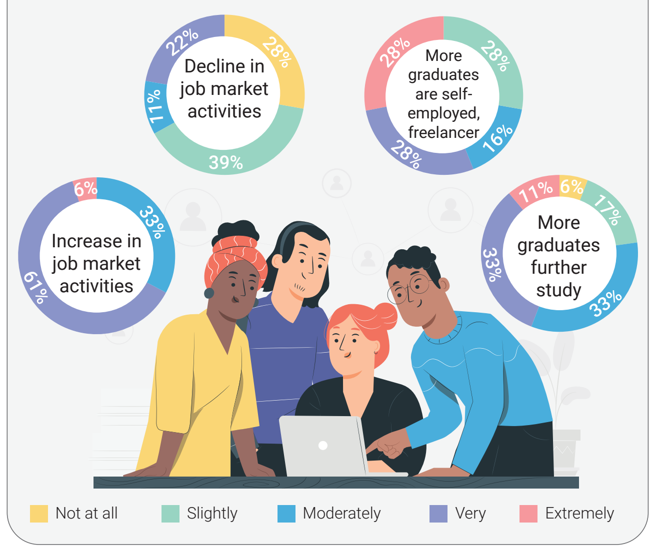


Figure 57: Views on The Employment Market for Fresh Graduates

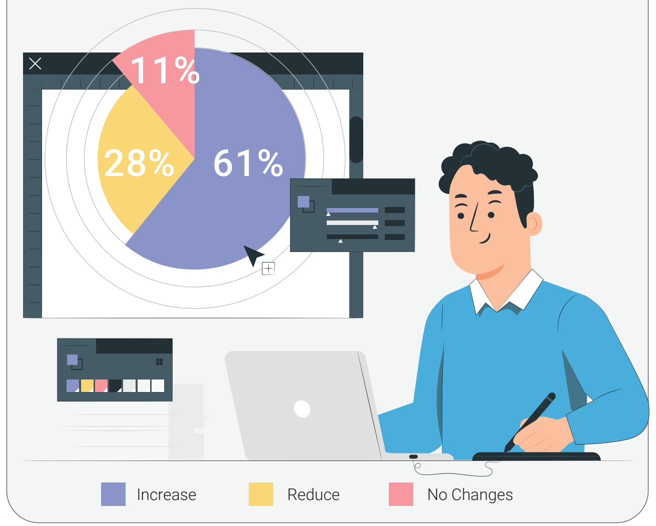


Figure 58: Student Enrolment Trend

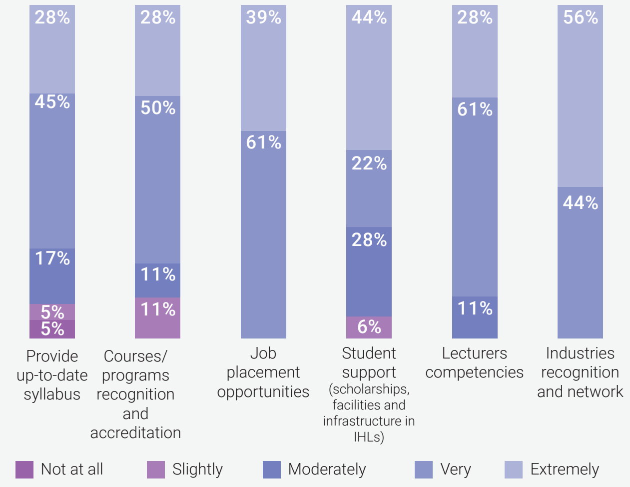


Figure 59: Areas of Improvement To Increase Student Enrolment

5. Financing, time and resources are the main challenges faced by the industry and higher education institutions

The majority of higher education institutions and the industry at large expressed similar opinions that financing and funding (83%) and limited time and resources (50%) are the two main challenges for partnership and collaboration (Figure 60).

Some of the other challenges faced by higher education institutions include:

- The lack of qualified lecturers, whereby the prerequisite for becoming a lecturer is evaluated by education qualification but not industry experience
- The poor alignment of curriculum with industry requirements
- The diminished passion and motivation of students
- The public's awareness of the industry

The vast majority of higher education institutions think that the government should (Figure 61):

- Provide more autonomy, deregulation and decentralised competence for the design of study programs/courses (77%)
- Improve governance structure by increasing self-organisation and transferring decision-making authorities to the higher education institution head (71%)

Figure 60: Challenges of Collaborating with Industry Players

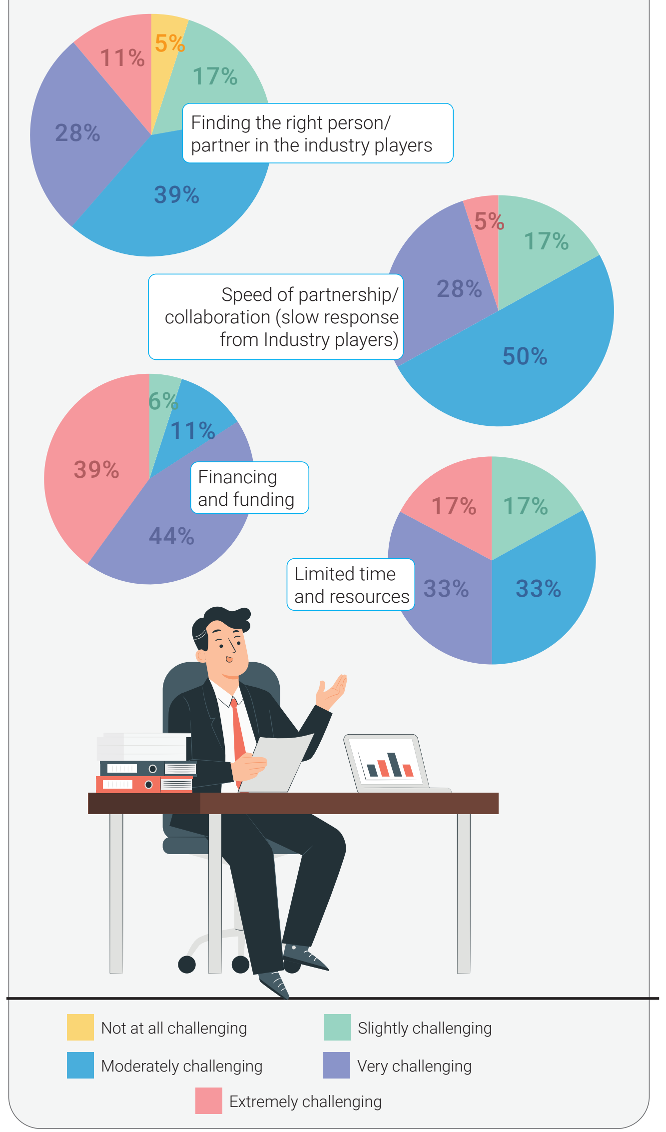
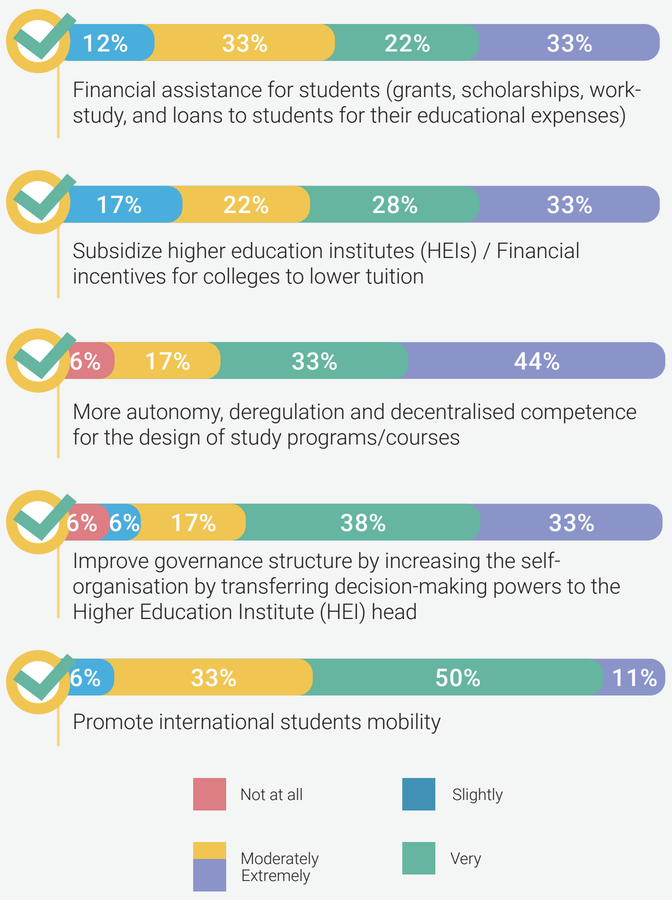


Figure 61: Type of Government Supports Needed for Higher Education



QUALITATIVE RESEARCH

SOUTHEAST ASIA

Talent Development Theme and Quotes in SEA Digital Content Industry

Emerging Themes	Quotes
Hiring the right people takes time with limited, scarce skills talent pools	"We focus on skill sets when hiring, but of course, education attainment is also important. These include communication skills, and because of the abstract of the job, it demands critical thinking skills. Better educated individuals have better capability to grasp those skills." (Animation Studio, Philippines) "Finding the people with the skill sets that we need is really difficult. So we figured out to find good people who the studio could work with. For example, the right attitude, smart and really passionate about the job and building these people by giving them skills through the job involvement." (Games Studio, Singapore) "We couldn't recruit fast because the demand in the job market is more than the supply of talents." (Animation Studio, Malaysia)
Training is needed to create a skilled workforce with employment potential	"Training is required for three to six months, depending on the position, while key animation and 3D graphics take a longer time of almost a year." (Animation Studio, Philippines) "There are two upskilling programs initiated, including the Explorer Program for diploma and degree graduates and the TVET Program for certification. The Explorer Program is a one month classroom and five month on-the-job training program." (Animation Studio, Malaysia)
Employee poaching is happening in this competitive job market	"Talent poaching happens whenever there's a company awarded with a new project." (Animation Studio, Malaysia) "The talent pool in the game industry is declining because game studios are not able to compete with the higher salary offered by fintech and cryptocurrency companies, especially for programmers." (Games Studio, Singapore)

Emerging Themes	Quotes
The education system and curriculum need to be reshaped to meet future needs	"The education system is not doing a good job in fostering the passion of the talent. Making people leave the excitement in making games." (Games Studio, Singapore) "Institutes of Higher Learning have to keep up with the fast changes in technology and the speed at which curriculum is updated and approved." (Games Studio, Malaysia)
Open talent economy in a borderless workforce	"The job market is extremely competitive because we are competing with foreign brands in getting the Philippines artists. There is no more workforce barrier with a global phenomenon of having a talent shortage." (Animation Studio, Philippines)
Seizing new possibilities presented by evolving technologies with the shift in skill sets	"Studios should embrace new technologies like blockchain technology since it creates an avenue that demands more content from the industry." (Games Studio, Malaysia)
Governmental support is essential	"The government should also explore the potential of promoting cultural exports through the medium of games. Due to the absence of a country pavilion at international game trade shows, Singapore's presence has also declined in recent years." (Games Studio, Singapore)

Overall, there is a significant gap between the demand and supply of talent, driven by many factors, such as:

- Higher education institutions are not producing talent fast enough
- The implication of the COVID-19 pandemic has slowed down and restricted foreign hiring activities in labour markets
- There is a surge in demand for content consumption
- High competition in the local job market due to the growth of studios

Southeast Asia's new normal: borderless and collaborative

This has resulted in the hampered growth and expansion opportunities of companies in the digital content industry. For instance, companies have had to turn down outsourcing work due to resource constraints.

Despite the media glorifying the work-from-home culture, the reality is far from ideal. Employers face unprecedented challenges with fresh graduate employment, with a lack of experience and demand for flexibility contributing to low work performance. Notably, companies adopting a remote working policy have emphasised the importance of rapid communication.

Studios are also increasingly working closely with vocational schools and higher education institutions. In Indonesia, notable examples include University of Technology Nusantara, Binus University, Universitas Multimedia Nusantara, and The Bandung Institute of Technology, which are to offer internship programs.

Some suggestions to improve collaborations between local higher educational institutions and game studios include being responsive to industry needs and responding to requests for a list of graduates. Moreover, studios believe that tertiary education is important in preparing students to enter the workforce and enhancing their skills.

One Malaysian animation studio thinks community colleges are more open and willing to collaborate with industry players.

In Singapore, collaborations with tertiary education institutes include syllabus reviews, guest speakers and internship programs. Industry players are also involved as short adjunct lecturers, one example being at Nanyang Polytechnic. This is less common in universities, but the industry-led approach is something to watch out for in the city-state.

Animonsta Studios, Malaysia

SEA is the preferred location for international talent hiring

With the growing competition and greater need for local talent in Malaysia, most studios are recruiting from Southeast Asian countries, including Indonesia, the Philippines and Vietnam. Among the mentioned Southeast Asian countries, a large pool of accessible talents with prior industry experience is available due to the region's many established digital content companies. For example, Ubisoft and Gameloft are among the biggest studios based in Vietnam.

There is some minimal wage disparity observed throughout Southeast Asia, except for Singapore. Additionally, there are difficulties due to the language barriers for Vietnamese talents, but it is not a major concern now.

Another hiring difficulty highlighted is finding qualified candidates for support services in departments such as information technology (IT), finance and human resource (HR).

One indie game studio believes that the talent shortage in Malaysia has unintentionally contributed to the increased hiring of talent from Indonesia, spreading across cities in Jakarta, Bandung and Jogia. The indie game company hired talent from Indonesia for the first time using a recruiter. Since then, the indie game company has continued its growth by networking with game developers and educational institutions such as Institut Teknologi Bandung. The average wage in Indonesia is lower than in Malaysia, except in Jakarta. For a Malaysian junior game developer, this indie game studio pays a monthly salary ranging from RM3,000 to RM3,500.

Other potential sources of talent for new employment include Thailand and the Philippines. However, major challenges include language barriers with Thai talent and higher expected wages for candidates from the Philippines. In the past, the indie game studio hired an intern from France, but the wages were too costly for the experience level.

Another animation company is of the opinion that foreign Southeast Asian talents generally perform better in conceptual artwork and can be acquired easily for senior-level positions.

Those aspiring to be successful entrepreneurs need to broaden their knowledge and exposure in business and financial management. In fact, the average lifespan for most game companies in Malaysia is five years. A key to long-term success is good cash flow management and a well-structured company plan. One of the indie game studios also emphasised its workers being the studio's greatest assets. Hence, providing a clear career path for them as the business grows is crucial. Among the long-established game studios in Malaysia are Passion Republic, Kurechii, AppXplore, LemonSky, and Ammobox.

Parents can significantly affect their children's career choices and life aspirations. Thus, it is important to spread awareness to parents and children about career possibilities and the future potential in the digital content industry.

INSIGHTS & OBSERVATION

Southeast Asia at the forefront of new technologies

There are growing opportunities for Indonesian artists to work on commission-based jobs related to NFT projects. This new disruptive tech creates opportunities for commission-based jobs creating a new source of economic revenue for studios that were, in the past, highly dependent on publisher and distributor relationships.

The popularity of non-fungible tokens (NFTs) has shifted the type of skill sets needed to become an NFT digital artist in the industry. This shift has expanded the opportunities available to illustrators, animators and creators.

In the Philippines, among the technological advances is 3D printing, which could help with the overall character creation process in stop-motion animation. Similarly, the growth of streaming, as seen with the popularity of over-the-top (OTT) services, has amplified the demand for content, opening up new potential for digital content studios.

MALAYSIA

"I think the most important thing that needs to happen for the games industry in Malaysia is that we establish our legitimacy in the eyes of the public as a potential rapid-growth sector. Malaysia is strategically placed in terms of location, cost, language, and ease of running business compared to many of our neighbours. However, we are not taken as seriously as we should be because we need more IHLs or TVETs offer courses to build our talent pool and ensure our talent is ready to join the workforce."

Richard Cheah, Managing Director of Streamline Studio, Malaysia

Circle Studio, Malaysia

Working remotely increases the competitiveness of local talent acquisition

Driven by the COVID-19 outbreak, companies in the digital content industry have shifted to a remote working culture. This major operational transformation resulted in increased competition for talent acquisition and expanded accessibility of the talent pool across the globe among digital content companies.

Given the greater currency conversion rate for salaries paid in USD, Malaysian talent are able to take up remote work opportunities from international companies. Companies from the gig economy are also competing for talent in the digital content industry, particularly in regard to high-demand jobs, such as programmers. Broadly speaking, a talented programmer in Malaysia may easily find work in Europe or North America.

Currently, most studios in Malaysia are still working from home. However, these studios will consider hybrid working arrangements in their long-term planning.

Aside from the broad opportunities in remote work, the competition for local talent is heating up among digital content companies with the establishment of foreign companies in Malaysia, like Larian Studios, Sony Malaysia, Double Eleven and Streamline Studio, and even Malaysian studios, Passion Republic and LemonSky. Nowadays, fresh graduates are unlikely to consider working for local indie game companies, with said companies not appearing at the top of their list when applying for jobs.

For indie game companies, a competitive salary is a critical element in attracting new talent. To keep up with the competitive job landscape, indie game studios provide their employees with a competitive salary, bonus and profit sharing. In efforts to retain their experienced employees, these companies will typically negotiate remuneration packages as a long-term benefits strategy.

Another effective talent acquisition strategy is finding enthusiastic talent who appreciates the work of indie game companies and is not interested in working for larger corporations. Even though Malaysia does not lack talented individuals, indie game companies believe they are being recruited quickly by major industry players and offered opportunities to work abroad. To illustrate, one of the popular choices for Malaysians is working in Singapore.

In the animation sector, the job landscape is remarkably competitive due to the large number of studios looking to source skilled people and the shortage of talent in the local animation industry. Concurrently, higher rates of student dropouts occurred in the past two years of the pandemic.

Recruitment of local talent is comparably easier than recruiting international workers due to the complexities of immigration regulations. Common hiring strategies include recruitment through social media platforms and partnerships with higher educational institutions. Often, finding the right talent to fill an open position takes between two to three months.

Additionally, there are more challenges to hiring experienced employees than fresh graduates, as many of them are shifting careers. As local studios receive funding support and co-production projects, talent poaching is more likely to occur.

Education level is secondary to the portfolio of talents

In the digital content industry, passion is essential to drive unflagging momentum and dedication. In most cases, a job portfolio demonstrating tremendous skills and passion is more important than the level of education.

The majority of companies are prioritising investments in in-house training and on-job training to encourage staff upskilling. This is apparent as a portion of the company's budget is allocated for external training and development, like online courses. In a game company, fresh graduates may expect to earn a starting salary between RM2,500 and RM3,000 per month. In the animation sector, the starting salary of fresh graduates starts from RM2,000, depending on their experience level.

Most companies also believe that academic performance does not indicate how good talent is but rather their work ethic and capacity for innovative solutions. Companies also prefer graduates who have completed a specialised course instead of a generalised one, since they would be better prepared for the job.

Half Wolf Entertainment Philippines

Industry readiness is always the key concern

It is generally challenging to source qualified and suitable talent for a position. In some cases, a company may receive numerous applications, but only a small subset of applicants fulfil the requirements and have the qualifications for the role. Most applicants also require training since they lack the skills to begin working immediately. As such, most companies have initiated their own upskilling training programs to help meet the increasing needs of skilful talents.

The shortage of skilled technical artists and writers has continued to be a challenge. Game developers with both art and game development knowledge are hard to come by in the job market. As compared to programming-related positions, companies often receive more art-focused applications.

Common hiring channels include a company's internship program, social media and professional business networking sites. For example, Facebook, LinkedIn and the ArtStation website. On average, new hires are hired within two to three months, with social media platforms like Facebook being the most effective recruitment method.

Some companies think that the skills levels of graduates developed by local educational institutions differ from one to another. More specifically, UOW Malaysia KDU and Swinburne University Sarawak have a better industry understanding and are actively involved in the industry. Lecturers from the mentioned universities often encourage students to participate in industry events such as the SEA Game Awards, LEVEL UP KL, Kre8tif! and more.

The competency of lecturers can significantly impact the quality of students, with UiTM being one of the good examples of developing graduates with consistent quality. Lecturers lacking exposure and expertise in the industry also contribute to the challenge of producing new talents in the job landscape.

The new hires for one of the animation companies in Malaysia have varied educational backgrounds, such as community colleges, polytechnic and higher education institutions. They also note that degree holders usually have an easier time learning new skills than diploma holders.

Overall, there is a shortage in the supply of 2D talent in the industry as only a few local higher institutions are offering the course. Meanwhile, most local highest education institutions in Malaysia are offering 3D courses.

Senior-level roles such as animation supervisor are the most difficult to fill, with teamwork being one of the essential soft skills. Generally, Malaysian talents find it difficult to collaborate with foreign supervisors from countries such as Indonesia and the Philippines. Even with self-initiated upskilling training programs, there is slow progress in increasing the number of talents. This is in part due to high employee turnover and talent poaching. One of the retention strategies implemented is a mentorship program, where senior and junior staff are teamed up to support the growth and development of newcomers.

Maintaining a close relationship with IHLs

Among the challenges faced by IHLs is keeping up with the rapid changes in technology and the pace of updating and approving curricula. Students' lower interests and registration have also led to courses being merged or narrowing their scope for universities to continue operating. Further, compounding effects can be seen through the lack of in-depth learning from the curriculum, leading to a lack of specialised knowledge among graduates.

A common misconception about careers in the gaming industry is that it is perceived as a niche industry lacking career growth.

For some indie game studios, collaborating with local higher education institutions is more challenging than collaborating with overseas institutions, such as Institut Teknologi Bandung (ITB), Indonesia. For one, ITB proactively provides resumes of their final-year students to the hiring pipeline. Higher education institutions have also partnered with the companies through internship programs, syllabus reviews, final year project reviews, and guest lectures in universities, which include but are not limited to UCSI University, Universiti Teknikal Malaysia Melaka (UTeM), Politeknik Malaysia, UOW Malaysia KDU and The One Academy.

Unleash the potential of Malaysian talents

With most Malaysians speaking both English and Bahasa Malaysia, the language barrier is practically non-existent. Life in Malaysia is relatively comfortable with its reasonable cost of living.

Malaysian citizens generally consume media from both western and eastern regions. This has benefited studios with a better understanding of the service requirements and meeting the expectations of their clients.

In response to the industry growth, there has also been an increase in the number of IHLs offering courses relevant to the digital content industry. However, due to the smaller population in Malaysia, the talent supply is similarly scarce. The low enrolment of said courses is also contributed by the perception and low awareness of the public.

To improve public perceptions of the industry, industry players should share their successes with the public. At the same time, increasing the number of vocational schools and working closely with IHLs to keep their curriculum up to date would assist in developing talent's potential.

Awareness plays an important part in shaping public opinion, and the Malaysian government is supportive of the games and animation industries through several programs. The MDEC Creativity @ Schools program has evolved since 2016, targeting school children's exposure to game development, animation and creative skill sets. As of 2022, the program has reached 3,400 registered participants. The program also reached a tipping point when it was officially adopted by the Ministry of Education as part of the official co-curriculum syllabus for all 4 million Malaysian school children aged 7-17.

For the wider public, the Malaysian government, through MDEC, has supported the industry awareness drive via the Malaysia Digital Creativity Festival (MYDCF) since 2019. The program celebrates Malaysia's digital content industry, driving the public experience in a positive manner.

Compared with the talents of some SEA countries, the work culture and ethics of Malaysians are relatively low, with high workplace complacency among the locals. For instance, Malaysians typically show less initiative and put in less effort at work. This can be attributed to a high level of comfort when working in one's own country.

However, one indie game studio believes that the creativity of Malaysians is comparable to international standards, proven by Malaysian talents working for global companies. Malaysians are also smarter and more outspoken when voicing their opinions and ideas than talents from neighbouring countries.

Also, education in Malaysia heavily emphasises STEM (Science, Technology, Engineering and Maths) rather than STEAM (Science, Technology, Engineering, Arts, and Mathematics). This may be why Malaysian talents usually have good technical skills but lack creativity. The Digital Storytelling Animation Competition is a valuable initiative to cultivate interest among youths while also educating parents about the industry.

Business diversification diverts the talent's capability and capacity

New and ever-expanding business opportunities result in recruiting new talent to a company. One of the indie game studios, which previously focused on 2D games and UI/UX design, is now expanding into 3D games and full stack development for websites.

There is a high demand for additional new hires in the areas of 3D animation, 3D modelling, 3D game development and full stack development. However, finding qualified individuals with the necessary skills has proven to be challenging. This could also be attributed to a lack of awareness regarding the company's new venture and career opportunities.
The Malaysian government supports the rapid pace of upskilling and reskilling through multiple programs. One example is the Enterprise Development Program (EDP), which offers free or at-cost courses that have seen over 1,500 participants enrolled over the last three years. The EDP courses are conducted in partnership with local and international partners offering subjects ranging from technical workshops to creative industry business management and operations.

Another developmental program is the Creators Studio, which provides Malaysian-based studios with the opportunity to hire Malaysians and provide real-world, on-the-job training. In return, this government-funded program offers a training allowance incentive, thereby providing exposure to skills and the work pipeline.

Embracing technology change and open opportunities

A few game studios in Malaysia have plans to explore the potential applications of blockchain technology in their businesses in the near future.

Even so, most companies think that a proper roadmap for blockchain in gaming is important to provide a realistic overview of the supply and demand, and the market's readiness.

While new technology, such as blockchain applications, is still in its early stages of adoption, studios are encouraged to embrace the change since it is an avenue that increases the demand for content from the industry.

Kaigan Games, Malaysia

INDONESIA

Indonesia is the sleeping giant of Southeast Asian animation; craft, dedication, and creativity — we are on the verge of something spectacular. What we need is sustained investment for infrastructure development, both in terms of university-level education and fostering of the existing animation industry. Given those resources, Indonesia's talented animators have no limit to what they can achieve.

—— Ryan Jackson, Co-founder of Percolate Galactic

There is an excess of untapped talent but a scarcity of skill sets

There is a large pool of untapped potential talents in the Indonesian employment market. Yet, they lack specialised skill sets. For example, most education institutes teach Adobe Photoshop to animation students, despite the industry using different software, such as Toon Boom for 2D animation. Due to the high price of the Toon Boom license, it can be challenging for educational institutions to subscribe and maintain the license, even if they are aware of industry requirements. Some studios also find it more difficult to hire interns with a fundamental understanding of animation tools.

Sourcing for the right talent in the employment market in Indonesia is even more challenging today. Most talents prefer working in major cities in Indonesia, like Jakarta, Bandung and Bali. In addition to the shortage of skill sets necessitating six (6) months of training, there is increased competition from other studios

Percolate Galactic, Indonesia

Improve employee benefits to maintain market competitiveness

In efforts to remain competitive and retain top talents, studios will provide better employee benefits than their competitors. For instance, higher wages, better work-life balance, good benefits and a fun working environment.

Most talented animators prefer to work as freelancers for western studios

Most talented animators opt to work with western studios because of their high service fees and the freedom to work remotely. For these reasons, freelancers are unlikely to become full-time employees for a particular studio.

Some studios believe that while numerous vocational schools offer animation courses, which contribute to the talent pool of junior animators, these talents still require training to be workforce-ready.

Some hard-to-fill positions include 2D animators, scriptwriters, storyboard artists, concept artists, motion graphic designers, riggers, and lighting and rendering artists. Another role with high job opportunities in the market is After Effects/VFX artists.

Lack of exposure to the international animation production pipeline

The education institutions mainly focus on teaching animation fundamentals without any exposure to the actual production pipeline. Only a few studios have worked on international projects. Hence, talents can only gain exposure through working with those studios.

Increasing wages as talent competition becomes more intense

A growing number of Korean animation companies are setting up business in Indonesia, affecting the job market by paying higher wages for talent, particularly for senior-level positions.

On average, the starting salary for fresh graduates from vocational schools ranges from USD170 to USD205. Generally, the hiring channels are through social media platforms like Facebook. Moreover, some studios are collaborating with the government on the "Balai Latihan Kerja (BLK)" program, where the studios will offer participants employment after the completion of training.

INSIGHTS & OBSERVATION

Many vocational schools are focusing on animation programs

In Indonesia, there are numerous vocational schools that offer animation programs.

However, several vocational schools have yet to meet the industry's requirements. This creates challenges and issues that need to be addressed to produce better vocational school graduates. These challenges include improving the skills of teachers and school principals, and creating synergies between different stakeholders.

Besides, there is a need for vocational schools to improve curriculum development by working with businesses and industry, improve school facilities in line with vocational high school standards, and streamline school management.

The recently launched Center for Excellence Vocational School Program is required to follow eight pre-determined steps, namely a curriculum prepared with the industry, true project-based learning from businesses and industries, the number and role of teachers or instructors from industry and company experts, fieldwork or industry practice, skills certifications, technology updates, and teacher or instructor training[14].

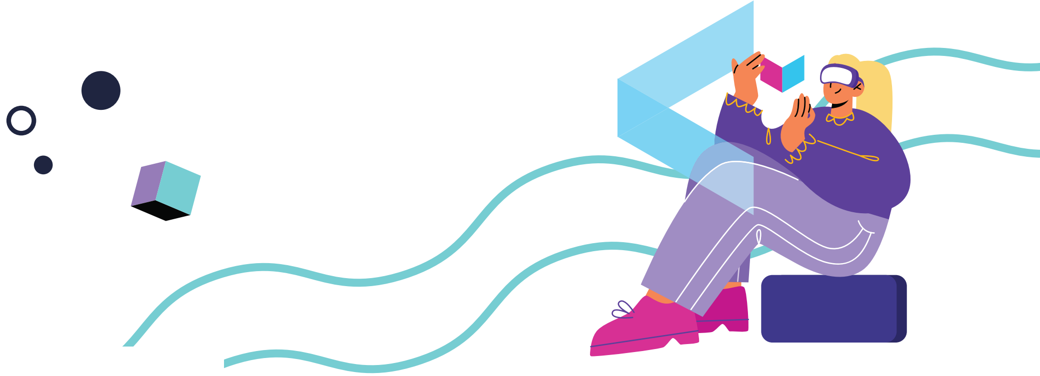
There is a lack of animation courses in higher education institutions

At present, less than five higher education institutions offer animation courses, most of which are graphic designer courses with limited animation learning.

In Indonesia, most of the animation industry's workforce graduated from vocational schools and have completed at least six months of training, as provided by the Ministry of Industry or Ministry of Manpower. The objective of the training is to prepare graduates to enter the job market using learning materials developed by industry and industry instructors.

Compared to vocational schools, principals of higher education institutes are more approachable and open to working with the industry for curriculum reviews.

This may be related to the fact that procedures at higher education institutions are far more bureaucratic than those at vocational schools. Therefore, curriculum updates in higher education institutions require more time and extensive approval procedures.



Original content creation is growing on OTT platforms

Original content development has been growing rapidly in Indonesia, particularly on over-the-top (OTT) platforms such as YouTube, Instagram, and TikTok. The rising popularity of OTT platforms is primarily due to self-investment, as these platforms require minimal resources to develop content.

Pre-production in animation remains a challenge among studios as it requires new ideas, concept artists, scriptwriters, and storyboard artists during the process. On the other hand, Indonesian studios are more experienced in outsourcing jobs.

A strong portfolio is far better than formal education

As there is no benchmarking and curriculum standardisation in Indonesian vocational education, the talent level varies according to the individual's potential.

Hence, most studios strongly prefer hiring candidates who can demonstrate their skill sets and experience via their portfolios.

Studios believe vocational schools are a good platform to provide the industry with skilled individuals proficient in software tools, whereas higher education institutions are more likely to produce talents with the potential to become concept artists.

Percolate Galactic, Indonesia

PHILIPPINES

There's a lot of existing and upcoming talent in the Philippine animation industry. I think we could all benefit from increased connectivity (whether digital or in-person) and easier accessibility to local industry information through animation conventions so that professionals, interested talents and animation enthusiasts can network and share their knowledge

—— Carlyn Ceniza, Creative Director and Stop-Motion Animator of Fizzbuzz Inc

A job market with intense competition for talents and high pay

Although a large talent pool is available in the Philippines, the job market is more challenging than before. The job market's growth can be attributed to the increased demand for local talent and intense competition among international companies.

International companies predominantly offer a wage rate five times (5x) greater than what local studios can afford to pay their employees. In terms of project delivery, foreign companies provide more artist-friendly delivery timeframes compared to local studios with strict timelines.

Recently, local freelancers have taken an aggressive turn, shifting to work with foreign companies following the COVID-19 outbreak due to the increased remote working opportunities and higher pay.

The gaming industry is growing, particularly in major cities in the Philippines. Further, the Game Developers Association of the Philippines (GDAP) has been collaborating with the local government to accelerate talent sourcing from other municipalities. For instance, curriculum reviews and training to prepare graduates for work in the real world.

Overall, the challenges in talent hiring include:

- The industry faces fierce competition locally and globally, with high demand for talents
- Shortage of talents with the right skill sets and skill level
- Recruiting senior-level positions
- Economic and financial rivalry in talent salary/wage
- A borderless workforce creates more working opportunities.

Typically, it takes two to three weeks to hire new skilled employees in the job market. Otherwise, identifying and training the potential talents will take up to three (3) months. The usual recruitment channel uses social media and word of mouth.

Skills come before education

During hiring, an individual's skill set or portfolio supersedes their education level. However, education is equally vital in developing communication and critical thinking skills. To elucidate, people with higher levels of education have a larger potential to grasp these skills. Contrastingly, passionate individuals that lack a formal education tend to be more aggressive and diligent at work.

Finding the right talent, especially one with skill and experience, has been a constant challenge. The most difficult position to fill is an animation artist with an understanding of the principle of animation, followed by layout artist, project management, fabricator, stop-motion animator, and post-production editor. For stop-motion animation, a knowledge of fabrication and camera movement is essential.

In the gaming industry, some of the hardest positions to fill include programmers, UI/UX designers, and game quality assurance (QA) testers, with game designers being the most difficult.

Academically, only a few courses focus specifically on game design, as it is considered one of the general subjects covered in game development courses. Collaborations with higher education institutions include internship programs, job fairs and curriculum reviews for specialised focus in animation and game design programs.

Most studios are of the opinion that higher education institutions should mandate lecturers with industry experience in their respective fields to impart relevant valuation knowledge to future talents.

Foreign hiring is not an option for local studios

Given the current economic state in the Philippines, the base pay scale is not competitive enough to entice international talents to work for local studios. Likewise, most local talents prefer working with international companies due to the attractive compensation.

However, key talents have continued working for local studios with a broader scope of work. This mature mindset has led to the formation of strong networks between key talents and local studios. To this end, many in-house upskilling and training programs are available to help companies overcome the difficulty of finding qualified candidates for open positions.

Active associations and better support from the government

Despite the fierce competition in the employment market, constant efforts were made to ensure enough talent supply globally. The Animation Council of The Philippines (ACPI) has been actively engaging local studios, schools, and the government in upskilling training programs, including fundamental 3D animation, rigging, visual development, scriptwriting and storyboarding. ACPI also plans to establish an animation incubation centre and is seeking government assistance.

The Philippine Creative Industries Development Act has been enacted. As such, the Philippine Creative Industries Development Council will be mandated to implement a long-term plan for developing and promoting the Philippine creative industries. This plan includes programs aimed at creating opportunities and employment, nurturing human resources, ensuring financial-enabling mechanisms, and providing incentives to encourage and sustain Filipino excellence in the creative industries.

The Creative Content Creators Association of the Philippines, Inc. (SIKAP), Game Developers Association of the Philippines (GDAP) and Animation Council of the Philippines, Inc. (ACPI) have been the driving force behind the passage of the Philippine Creative Industries Act.

The strong gaming and animation community is not only concentrated in the city centre but has spread throughout the province, like the Cebu Animation Guild. There have also been workshops and training targeted at the potential workforce, sponsored by the Department of Trade and Industry, and the Department of Information, Communication and Technology (DICT).

This year, the Cultural Center of the Philippines (CCP) launched grants for Filipino animators, artists and game developers up to USD36,000, depending on the grant category. By supporting and encouraging Filipinos to create original content, the CCP aims to produce a collection of original IPs as well as foster a deep understanding of IP rights. Further, the initiative is aimed at building a strong national identity with original content development that will showcase the talent and ingenuity of the Filipino people that is on par with global standards[15].

Other notable events in the animation industry include the Animahenasyon and The Cinemalaya Philippine Independent Film Festival.

Hiring more contract employment to support outsourcing works

In the Philippines, local studios provide more opportunities for contract work. For the animation industry, in particular, freelancers are open to more options and opportunities to work on multiple projects simultaneously. This leads to more creative work output and opportunities for animation studios to obtain a greater volume of outsourcing work, but there is also a noticeable impact on their deliverables timelines and output quality as freelancer talent can get overwhelmed.

The low internet connectivity, coverage, speed and high price dampen remote talent

Accessibility to the internet is limited in some regions of the Philippines, making remote work difficult for local companies. Still, the internet speed is relatively low due to geographical factors, where the country consists of many islands, and the huge investment made to develop its internet infrastructure.

Internship programs are a challenge for some outsourcing companies

Some outsourcing studios in the Philippines find it challenging to offer an internship program due to the privacy agreement for outsourced jobs, budget, and time constraints. Especially considering these studios work on tight deadlines and supervising the trainees would require more time. Alternatively, the trainees or fresh graduates can enrol for a three-month training program which costs USD270 in an academy run by a specific studio.

Nevertheless, most studios producing original content welcome interns and provide them with real-world work experience and a talent acquisition strategy for future employment. Depending on the studio, internship programs range from one month to one year.

The content creation industry is growing

The development of original content is growing in the Philippines. However, local studios in the industry still lack exposure in the IP value chain. Specifically, there is a lack of understanding of licensing, legal, marketing, and distribution channels in the industry. In the case of the Philippine game industry, local developers lack the capability and the required funding to develop AAA titles. SIKAP has stepped in and led the development and equipping of local artists and studios who have chosen to pursue this route or integrate it into their operations.

Programs like mentorship, incubation, and acceleration will be able to drive company expansion, in terms of game development and business growth. Indeed, mentorship programs and government grants will also contribute to the increase in original content creation.

However, most studios in the Philippines believe that servicing jobs is more sustainable than investing in the development of original content due to the erratic and risky revenue. This is also driven by the lack of understanding of how to do business in the original content space.

More opportunities and worker skill shifts due to changing technology

New technology developments, particularly Web 3.0 games, allow for newer business models. This is particularly true in the Philippines with the twin forces of blockchain game adoption and a guild management system, effectively creating a new economic model of playing games and attracting new players to the space.

There are also more outsourcing work opportunities for play-to-earn games in the Philippines, which contribute to studio growth and studio size expansion. As this trend continues, more training is required to upskill employees with new technology, such as metaverse, gamification and virtual reality. In line with this development, the industry needs to invest more in research and development to gain a deeper knowledge of new technologies and widen opportunities.

Improve teachers' competence in teaching animation at senior high schools and tertiary schools

There is a shortage of trained and experienced teachers for animation in senior high schools and tertiary schools. In light of this, the Industry and Game Developers Association of the Philippines (GDAP) are collaborating with schools to enhance their current curriculum and provide teachers with practical industry experience. In fact, the curriculum or syllabus must be periodically revised to keep up with technological advancements. However, obtaining approval from the education department is difficult.

While animation subjects have been introduced in the senior high school curriculum, there is a lack of experience and expertise among the teachers teaching the subjects. One of the plans under the Sibu Animation Guild is to train high school educators, equipping them with the required knowledge in animation.

Beyond these measures, there are also suggestions for government grants for the development of teaching materials.

SINGAPORE

I think we've got a lot of really promising up-and-coming young devs, and if some support could be provided, say in terms of mentoring, space and some seed funding, it would go a long way in promoting the growth of these homegrown talents

— Shawn Toh, CEO of BattleBrew Productions

Fintech growth creates a competitive employment market for programmers

With more fintech and cryptocurrency companies in Singapore hiring programmers, the employment market is becoming more competitive. The said companies typically offer attractive salaries double or triple of that offered by game companies. Overall, the talent pool in the game industry is shrinking because game studios cannot compete with the higher pay offered by fintech and cryptocurrency companies.

The starting salary for programmers has increased to SGD5,000, while senior programmers are offered up to SGD15,000. However, there is a cultural divide as well, as passionate individuals will continue working in the industry.

As remote working opportunities continue to surge worldwide, this has resulted in broader career choices and higher wage demands from talents, particularly those with expertise and specialisation.

In Singapore, the acquisition of talents related to art and design is not significantly impacted. Studios in Singapore are of the view that Southeast Asia countries have always been dominated by digital artists.

The influx of foreign game studios in Singapore provides more opportunities for local talents

The gaming industry in Singapore saw an inflow of international game companies like Riot, Mihoyo, Ubisoft, Tencent, and Netease, out-competing local indie game studios in talent acquisition. The senior staff at indie game studios have increasingly become the prime focus of talent poaching by international game companies.

As senior-level talent poaching has become prevalent in the game industry, Singaporean studios think international game companies should hire and train their junior employees instead of poaching the industry's existing talent pools.

But, working with international game companies has training and development benefits for talents. The majority of successful local game studios are led by their founders, who have worked with global AAA game companies.

Turning interns into future employees

In Singapore, internship programs typically last six months, and at the conclusion of the program, studios may offer opportunities to fill open positions. Aside from skill sets, the cultural fit in the company is also part of the job assessment. The studios also emphasised the candidates' passion for the game industry.

To bridge the gap between industry and academia

Learning and knowledge have become obsolete due to the educational system's inability to keep pace with technological advancements in the game industry. Notably, neither the lecturer nor the students are up to date with the most recent changes in the game industry.

One way to improve the gap between industry and academics is by introducing short courses designed to keep them relevant to the industry.

Now, more general courses are being offered in tertiary education, broadening the work options for fresh graduates across industries. Indeed, insufficient knowledge in the field of study has contributed to the shortage of qualified individuals in the game industry. Among tertiary education institutions offering digital content-related courses include 3dsense Media School, the National University of Singapore (NUS), Nanyang Technological University (NTU), and LASALLE College of the Arts.

Increased acceptance of game professions

In Singapore, parents' perceptions of video game careers are shifting. Overall, there is a growing recognition of game professions as viable careers.

The decline in direct government support has been replaced by the role of associations

Due to the larger investments, government support has shifted from the game industry to the fintech and cryptocurrency industry. For example, the PIXEL Acceleration Program has redirected its focus toward deep tech start-ups.

The government believes that the current state of the game ecosystem is good. However, similar benefits and support should be equally considered for both large multinational corporations (MNCs) and home-grown small and medium-sized enterprises (SMEs) in Singapore. One example of such support is the government offering tax benefits to fast-growing local gaming studios, which has helped them scale their company and hire with greater salary offerings.

As games reach mainstream popularity, the government should explore the potential of promoting cultural exports using games as a medium. Singapore's presence has also diminished in recent years because of the absence of a country pavilion at international game trade shows.

Approval of a Singapore Work Visa has become more difficult and expensive

The fees for work pass applications are rising, and a security bond of $5,000 is required for each non-Malaysian foreign worker. In addition to higher qualifying salary thresholds, Singapore will introduce a new points system for Employment Pass (EP) applicants from 2023[16].

THAILAND

The digital content industry in Thailand has the potential to expand with some areas of improvement

The value of Thailand's digital content industry is expected to reach USD1.6 billion (62.4 billion baht) by 2024, increasing from USD 1.1 billion (42 billion baht) last year, driven by strong growth in the game industry and the recovery of the animation industry[17].

As reported by the Digital Economy Promotion Agency of Thailand (depa), there are a total of 248 companies, consisting of the games industry (78), the animation industry (141) and the character industry (29) in 2021. 91% of animation companies are involved in outsourcing services jobs, whereas games studios are equally involved in original IP creation, external development, and publishing.

Thailand's game industry is growing, which is being supported by:

- New technology that allows the experience of better gameplay
- Continuous support from the cooperation of public and private sectors
- Career building in the games industry

Overall, below are the areas of improvement needed in the digital content industry as reported by the Digital Economy Promotion Agency of Thailand[18]:

- Shortage of talent from the current new technology development. For example, GameFi and NFT Game.
- Insufficient talent with content development skills for AR/VR and Metaverse
- Limitation of investment and access to the source of funds for entrepreneurs in the digital content industry
- Lacks promotion and empowerment of digital content developers

The competitive edge of the Thai digital content industry lies in the service-minded attitude of its digital artists, its cost-effectiveness, as well as the rich creativity and cultural wisdom the country is known for[19].

There are talents, but it's challenging to find the right blend of skills and experience

Studios in Thailand are facing a similar issue of finding potential employees with the right mix of skills and experience. Newly graduated students have more choices regarding their careers, such as becoming NFT artists or social media producers like YouTubers. More talents are providing freelance services due to the shift in working culture toward remote work and increased flexibility.

When it comes to recruitment, experienced talents with portfolios are prioritised rather than educational accomplishments. Since the pandemic two years ago, there has also been an increased demand for better salaries among talent.

Vacancies for senior animator and programmer roles, especially those with blockchain expertise, are particularly challenging to fill. This is because highly skilled and experienced animators often look for opportunities abroad.

Government supports talent development programs to upskill the quality of talents

The key initiatives for talent development in the Thai game industry are:

- **Game Online Academy**

The Digital Economy Promotion Agency of Thailand (depa) partnered with the Thai Game Software Industry Association (TGA), leading Thai eSports startup Infofed Co., Ltd, as well as the Southeast Asia Centre of Asia-Pacific Excellence Wellington Creative and Lane Street Studio, New Zealand, to launch the Game Online Academy. The project aims to further develop talents' skills and knowledge for better career advancement and professional development[20].

- **Game Accelerator Program**

The Game Accelerator Program was launched by the Digital Economy Promotion Agency (depa) in collaboration with the Thai Game Software Industry Association (TGA), Infofed Co., Ltd, and leading online game developer and provider, Garena Online (Thailand) Co., Ltd. The program was established to continue maximising the potential of people working in the Thai gaming industry, equipping them with the standard skills necessary to be on par with world-class gaming entrepreneurs[21].

Close collaboration between association, academic and industry

The Office of Small and Medium Enterprises Promotion (OSMEP), Silpakorn University and TACGA organised the Thailand Animation Pitching (TAP) Workshop. The workshop held activities such as concept development, script writing, pitching bible and techniques, etc.

Additionally, industry professionals with a minimum of six years of industry experience are welcome as tertiary lecturers. This is most evident at Bangkok University, where approximately 40% of the academics were from the industry. However, it can be challenging for a newly emerging industry to engage experienced industry specialists that fulfil the required years of experience.

Animation outsourcing powerhouse

In Thailand, 91% of animation studios provide outsourcing services, with exports to international companies increasing. The animation industry has become more globalised, but a communication barrier remains where English is not very widely spoken in Thailand.

With the majority of the industry focusing on outsourcing services, the emphasis on skill sets development at the tertiary level has shifted away from storytelling and creative thinking in nurturing original content creation. For instance, "Sea of Love", Thailand's first animated series for preschoolers by The Monk Studios, was showing on Netflix this year.

In contrast, players in the games industry are equally involved in original IP creation, external development, and publishing.

Ranida Games, Philippines

Accessibility of games and animation programs at the tertiary level

Most higher education institutions in Thailand offer digital content-related courses. Among the higher learning institutions are Bangkok University, Computer Games and Esports College of Digital Innovation and Technology, King Mongkut's University of Technology Thonburi, Silpakorn University, CMKL University and Mahidol University.

Despite that, the students' lack of interest in pursuing careers in the industry indicates a lack of passion for the industry.

Establishment of International partnerships

Over the years, DigiPen Institute of Technology, USA worked jointly with Thammasat University and its partners at Thailand's Digital Innovative Design and Technology Center (DIDTC) to unite the first two years of their programs with DigiPen. Students can enrol for the Innovative Digital Design (IDD) program or the Creative Digital Technology (CDT) program. There are two degrees within the IDD program: Animation and Visual Effects, and Game Art and Design. Both degrees map to DigiPen's BFA in Digital Art and Animation, and BA in Game Design programs, respectively[22].

At present, King Mongkut's University of Technology Thonburi has replaced Thammasat University's involvement in the program partnership[23].

The DIDTC has also partnered with DigiPen Game Studios (DGS) to assist Thai game developers in developing and publishing games for Nintendo Switch™. Thai game developers will receive technical support and incubation facilities throughout the development period from DIDTC, encouraging more game developers to be involved in console development[24].

Increase in the number of esports programs in comparison to computer science programs at the tertiary level

Due to the increased demand and interest from the public, more higher education institutions are offering esports programs than computer science programs.
Overall, game artists and designers outnumber game programmers.

VIETNAM

"I believe Vietnam has tremendous potential for animation and game development and production. We are at a turning point for the industry, and all players, including animation studios, game studios, schools and the government, have to come together to create a sustainable ecosystem that will ensure a leading position for Vietnam in the international creative content marketplace"

— Sylvain Grisollet, Business Development Director of DeeDee Animation Studio

A growing animation and game industry but with challenges to overcome for sustainable growth

Vietnam's animation and game industries have been around for years but have remained in an infancy state until recently. Longer-established companies are the fruit of foreign investment across 2D animation (Armada TMT, a branch of Xilam Animation), 3D animation (Sparx* - Virtuos), VFX (Bad Clay) and Games (Gameloft, Ubisoft). More recently, locally owned companies such as DeeDee Animation Studio (2D), Colory Animation (3D), Sky Mavis (Games) and more are growing rapidly. There are around 30 animation studios in Vietnam, most of which are based in Hanoi and Ho Chi Minh.

Generally, the game industry has developed faster, especially driven by mobile gaming and, more recently, Play To Earn games, with the worldwide hit "Axis Infinity" from Sky Mavis as well as support from major international players Gameloft and Ubisoft.

The animation industry caters to both the local and international markets. Most of the content produced for the local market is in the short form of ads, TV commercials, and music videos, and the country's fast economic growth is expected to surge to a GDP of 7.5% in 2022 due to its high service and product consumption. Meanwhile, content produced for the international market is usually in longer forms of series/episodic films, including outsourcing services for overseas partners and IP content creation for Vietnamese-owned international YouTube channels.

Vietnam has a large talent pool, with a population of nearly 100 million. However, the pool remains largely untapped because of the lack of school training programs to prepare young talents to join the animation and game industries.

Training is required to build the animation-related talent pipeline

There are insufficient institutions of higher education providing animation programs. Higher education institutions in Vietnam do not offer animation-specific minors, and animation studios depend on graphic design-focused institutions for talent pipelines[25].

Therefore, most studios typically have to train potential talent from various backgrounds for at least eight months. Among the higher education institutions offering creative art and design-related programs are:

- RMIT University Vietnam
- Van Lang University
- Hong Bang University
- FPT University
- Hoa Sen University
- Ton Duc Thang University
- Duy Tan University
- University of Architecture Ho Chi Minh City
- Ho Chi Minh City University of Fine Arts
- Vietnam University of Fine Art

Furthermore, public awareness and marketing activities are rarely seen because of the lack of institutions offering animation courses[25].

On the other hand, higher education in Vietnam has been steadily producing a stream of highly qualified engineers and computer programmers. Some of the top Vietnamese universities, including Vietnam National University, Hanoi University of Science and Technology (HUST), Duy Tan University, and Ton Duc Thang University, have shown remarkable performance in the international rankings for Engineering and Technology[26].

To promote university-industry collaboration

As of now, there are low rates of university-industry collaborations in Vietnam, especially for animation programs, where studios choose to train their talent in-house. But as the industry grows, interest from universities in the animation sector does too. As such, studios are gradually beginning to see a stronger demand from universities to help them develop programs that would better prepare young talents for animation (and game) jobs.

Graduates from higher institutions generally have a good creative and drawing base but lack sufficient knowledge of animation techniques and industry-relevant software such as Toon Boom, Maya, Unreal, Unity, etc. In 2D animation classes especially, students are still primarily being taught motion graphics in software such as After Effects.

While industry-academia collaborations are lacking, there are industry-led efforts to engage studios and schools to develop meaningful programs from the industry with academic support. This movement is entirely run by the private sector and shows the willingness of Vietnamese content studios to upskill their talent capabilities, particularly at the school or IHL level.

Government support is needed to build the digital content industry ecosystem

Currently, there is no trade organisation representing the animation industry in Vietnam. Meanwhile, the games industry has a communication association called Vietnam Game Dev.

It is imperative for the government to offer support to facilitate the growth of the digital content industry in the nation. Some examples of initiatives, such as financial incentives and incubator programs, can potentially spur and enhance the current ecosystem.

INSIGHTS & OBSERVATION

Disruptive technologies are impacting the games and content ecosystem

Vietnam is a hotbed for innovation in business models and entrepreneurship that embraces new technologies. In particular, the Vietnamese industry has shifted towards Web 3.0 technologies with blockchain games, NFTs, GameFi and metaverse projects. This has placed a strain on the existing games and animation industry talent pool as the project pipeline for new crypto-related projects mushrooms. In response to this growing new industry sub-segment, the Vietnamese government has been positive in their regulatory stance, allowing for digital assets, crypto projects and related Web 3.0 industries to continue operating with minimal regulatory oversight. However, this sentiment is shifting during the writing of this report.

Vietnam remains among the global leaders in grassroots crypto adoption[27] and global cryptocurrency acceptance[28]. Hence, the talent crunch seen in the animation and games space will likely remain unabated for some time to come.

INSTITUTIONS OF HIGHER LEARNING (IHLS)

"Creating digital games is more than just for amusement; it demonstrates cultural innovation by allowing creators to share their imagination critically through immersive storytelling that others can experience."

— Ts Jazmi Jamal, Dean, Faculty of Animation and Multimedia at National Academy of Arts Culture and Heritage [ASWARA]

"In Indonesia, the talent quality improvement includes quality control ability, operational capability of work equipment, ability to solve problems at work and communication skills."

— Dermawan Syamsuddin, S.Sn,.M.Sn , School of Design, Animation Program of Binus University

"To improve the quality of digital content graduates from Higher Education programs, fostering closer collaboration with the digital content industry via knowledge exchange and collaborative projects would be recommended."

— Asst. Prof. Dr. Pisal Setthawong, Deputy Chairperson, Digital Business Management of Assumption University

"Malaysia for such a small country has a unique advantage of having a very close-knit game development community that extends to academia, industry, and government agencies like MDEC. Malaysia also has over 15 institutions of higher learning offering various levels of video games qualification ranging from game art, game design and game technology. This has led to a significant talent output since 2017 and has helped provide the game development ecosystem with a critical mass of game development talents. In 2017, these institutions churned out 1,057 dedicated game developers."

— Associate Professor Ts. Dr. Tan Chin Ike, Principal of UOW Malaysia KDU College

"Improving talent means improving awareness in the community. Parents need to prepare their children from an early age in arts, and encourage their child performing arts. Schools need to encourage multicultural arts without prejudice. The industry needs to communicate, promote, introduce their works to the community, and help schools. Also, the government must help with policy-making to develop industries and oversee multicultural practices in communities and schools."

— Noviar Dyah Sukma, S. Sn., Animation teacher of Sekolah Menengah Kejuruan (SMK) Negeri 4

Enrolment caps in institutions of higher learning

Most higher education institutions have a maximum enrolment capacity of 30 to 35 students per classroom for each program due to the limitations listed below:

- Size of the classroom
- Number of professors or educators
- The accessibility of facilities (hardware and software)
- The provision of public sector/government subsidies for public higher education institutions

Higher education institutions' policies govern the appointment of industry experts as educators

The appointment of industry practitioners as lecturers is governed by the policies established by higher education institutions. Generally, industry experts are invited by institutions of higher education to teach and share their expertise as guest lecturers. Some institutions further employ them as adjunct professors.

The Ministry of Higher Education in Malaysia, through the Malaysian Qualifications Agency (MQA), permits the appointment of industry professionals as lecturers in institutions of higher learning. Nevertheless, the employment preference for those having a master's or doctorate (PhD) degree may depend on the established policy of each higher education institution. This is because research publication volume and number of citations are among the metrics for the university ranking system.

In efforts to educate students on the job market's needs, some Philippine universities, such as Ateneo de Naga University and De La Salle-College of Saint Benilde, are gradually hiring experts from the digital content industry as educators.

In Indonesia, only those with higher education qualifications like a master's or doctorate (PhD) degree are authorised by the Ministry of Education to become lecturers in higher education institutions. Hence, there have been recommendations for selecting industry professionals as educators in higher education institutions to generate better quality graduates while addressing the scarcity of lecturers for relevant digital content courses.

This also applies to Indonesian vocational schools, as only those who graduated as teachers are permitted to teach. Plus, most of them have qualifications in either graphic design or information technology, resulting in teachers who lack knowledge of animation. Approximately 150 vocational schools in Indonesia offer animation, but only 10% match industry requirements.

In Thailand, industry professionals with at least six years of industry experience are welcome to join as tertiary lecturers. A prominent example would be Bangkok University, where about 40% of the academics are from the industry. It is, however, difficult for a newly emerging industry to engage with experienced industry specialists that fulfil the years of experience.

Syllabus review to meet the industry needs

Southeast Asian higher education institutions generally conduct an official syllabus review every three to five years to ensure academic credibility with relevant industry partners. The curriculum of higher education institutions should be regularly examined with the help of industry experts to ensure relevant and up-to-date information.

Singapore Polytechnic works with an advisory committee (AC) to align its curriculum with industry trends every quarter. The AC, comprising educational advisors from universities, key industry partners and advisors, ensures their curriculum is aligned with industry trends and requirements.

This is also common in higher education institutes in other Southeast Asian countries. For example, UOW Malaysia KDU University College, Tunku Abdul Rahman University College (TAR UC), Universiti Pendidikan Sultan Idris (UPSI), UNDO Academy, Akademi Seni Budaya dan Warisan Kebangsaan (ASWARA), and the Republic Polytechnic of Singapore.

On top of learning the theory behind game and animation content development, students require hands-on experience in the actual development process.

Specialised or broad-based skill sets

Due to rapid digitalisation, Institutes of Higher Learning (IHLs) in Southeast Asia are forced to revolutionise their approach to offer education that would allow graduates to establish broad-based skill sets.

In Malaysia, some institutions of higher learning believe that broad-based programs improve graduates' employability across industries, namely in the architecture and fintech industries. Nevertheless, The One Academy, UOW Malaysia KDU University College and UNDO Academy, to name a few, are still offering speciality programs.

For Singapore Polytechnic, the main challenge is creating curricula that can integrate both broad-based skill sets and deep-domain specialisation in all of the courses and modules in the diploma. In short, IHLs need to be flexible and agile to stay on top of industry trends. For instance, a concept artist in the game industry would require 3D skill sets and game engine expertise to support the game production pipeline, ensuring that artwork can be streamlined better from 2D to 3D production for game environment-level creation.

As a whole, every higher education institution has its own unique program and course design or structure. Some higher education institutions prefer a curriculum constructed with a broader and general scope to increase graduates' employability in a diverse range of industries. Not to mention, the institutions will need to dedicate more resources to specialised programs, such as specialist lecturers.

Despite that, some institutions still offer specialised programs to supply talent to the digital content industry. Overall, large studios require specialists, whereas smaller studios need generalists capable of performing various tasks. Among employment roles in high demand are technical artist, and technical designer, both of which require well-balanced skill sets in art and programming.

Parents' disruptive thinking of the game and animation industry

When it comes to traditional parents, the idea of pursuing a career in animation or games is not particularly well received. However, a positive change can be seen as parents begin to change their views on the digital content industry and consider it a viable field for their children's future careers. This welcome shift is indicative that the industry will continue to grow and become more competitive.

As an example of government intervention, MDEC has played a part in driving the conversation for better ecosystem development through awareness, positive messaging and research into the games and animation industry. Similarly, the Malaysian government, through TalentCorp, has launched an initiative of better-structured internships under the MySIP program via the mynext platform. These aggregator platforms ease internship opportunities and convey to parents that career opportunities are available in the industry for their children.

Close collaboration with associations and industry players

Most higher education institutions maintain good relationships with industry players, technology partners and associations. For instance, the Malaysian government provided substantial assistance to the National Academy of Arts, Culture, and Heritage (ASWARA) in Malaysia to establish the Toon Boom Centre of Excellence (COE). Additionally, the Animation Society of Malaysia (ANIMAS) has shown strong support by providing the necessary human resources for 2D animation.

Also, Ateneo de Naga University in the Philippines collaborated with The Game Developers Association of the Philippines (GDAP) for CJ Creator Training in Japan, a practical test certification. In Thailand, the Office of Small and Medium Enterprises Promotion (OSMEP), Silpakorn University and TACGA organised the Thailand Animation Pitching (TAP) Workshop.

Singapore Polytechnic's Media, Arts and Design School (MAD) has an excellent track record of ongoing and successful collaboration with its alumni community and industry partners. Some notable partners include Ubisoft, IGG, Tencent, Temasek Foundation, Radin Mas and Offeo.

Collaboration with industry partners provides a myriad of opportunities for students as they can experience real-world challenges, such as servicing clients' needs, tackling real-world issues and working on unique and relevant projects not commonly found in classroom learning. Weaving real client projects into module assignments also allows students to collaborate with other students from different disciplines.

One example from Malaysia is the government's Industry Academic Collaboration program (IAC), administered by TalentCorp. This program encourages employers and universities to work together to develop greater collaboration through the gathering of insights, feedback and experiences as well as the relevant government agencies, associations and related ecosystem partners.

To foster synergies among tertiary lecturers

Among the many roles of educators, lecturing and research responsibilities are just two examples. At the same time, educational institutions are finding it difficult to hire subject-matter experts or lecturers with specialisations to teach the courses. Due to this, universities have accepted the reality that their lecturers are rarely universally qualified experts in every field. As there is no single approach or lecturer capable of teaching all disciplines related to animation or games, higher education institutions struggle with the necessity to engage lecturers with diverse expertise.

While in Singapore, the key challenge for the lecturers is to mentally prepare students to assimilate and integrate broad knowledge within a short span of three years. During the circuit breaker period in 2020, virtual tutorials and lectures became the norm for students. For some, this took a toll on their mental health and affected their concentration on their studies. Hence, lecturers have to be mindful when conducting their lessons or meeting students for consultations.

Curating a positive reputation and perceptions for the animation and game industry

Scientifically promoting games and animation with good curation can further transform society's view of the industry. For example, games are merely a medium and mediator to boost motivation rather than having a destructive societal influence.

Different classification of program standards for game programming courses

As we have seen in most institutions, the game programming course is embedded within the Faculty of Computer Science in accordance with the computing program standard. This highlights the difficulty of cross-collaboration between game programming students and game art or game design students in different faculties. Having said that, some institutions also adhere to the creative multimedia program standard by placing game art, game design, and game tech/programming under the same faculty.

Institutions have limited experience and exposure in designing and constructing a game program

Some for-profit private institutions have launched gaming courses but lack dedicated lecturers and engagement with the industry. These institutions place a premium on academic qualifications above industrial experience, impacting the quality of graduates. To close this knowledge gap, more collaboration between educational institutions and industry is necessary.

While schools may have challenges in developing curricula and learning materials that are industry relevant, the Malaysian government attempts to bridge this through student exposure. Through the MyASEAN Internship program, TalentCorp encourages cross-border internships between ASEAN students to gain exposure in other countries and studios. This breeds a cross-cultural professional workplace setting, exposes them to cultural diversity within ASEAN and builds up an ASEAN talent pipeline. Indirectly, schools will gain alumni exposure and hence opportunities to bridge the experience gap in the long term.

Involvement of lecturers and students in commercial projects

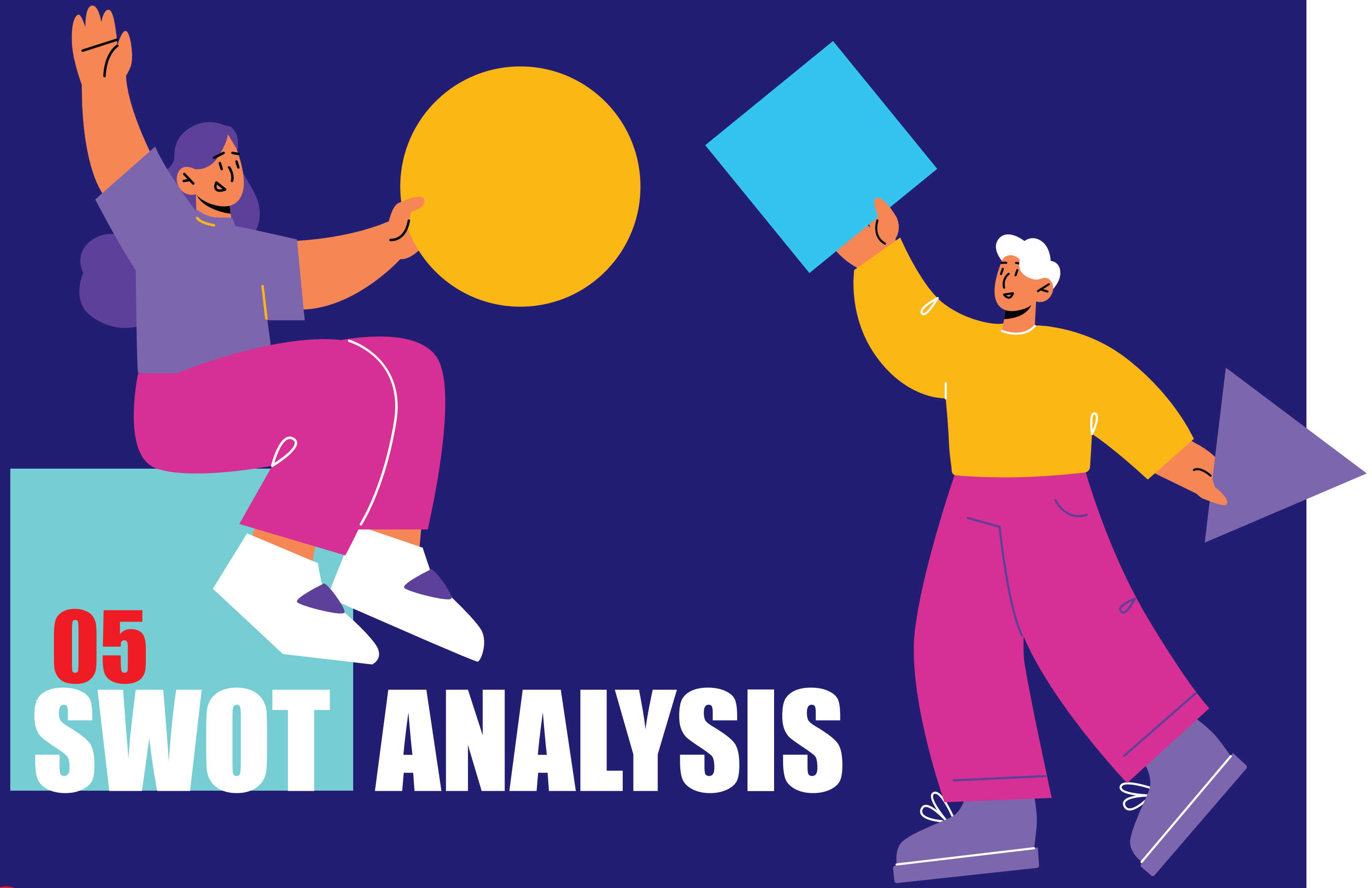
A lecturer with a Master's degree and a PhD but no industrial experience will just teach from a textbook and rehash the same content. As a result, there will be a mismatch between industry standards and the skills of new entrants. Hence, students and educators alike must participate in the work immersion initiative to gain hands-on experience and remain relevant in the industry.

Unfortunately, the participation of educators in the academic industry placement program can be difficult due to the institution's low resources. As an analogy, there may be difficulties in replacing lecturers for classes and providing financial support during their absence. One alternative would be to collaborate with the industry on commercial projects without being absent from teaching responsibilities.

Institutions of higher learning promote lifelong learning initiative

Institutions of higher learning in Singapore promote skill development and lifelong learning initiatives by offering the Continuing Education and Training (CET) course for adult learners looking to reskill and shift their careers towards the digital content industry. One such initiative is SkillsFuture Singapore (SSG), a national movement to provide Singaporeans with the opportunities to develop their fullest potential regardless of their starting points.

Malaysian Ministry of Higher Education and the Malaysian Qualifications Agency also recently re-launched the Accreditation of Prior Experiential Learning (APEL) to promote lifelong learning in support of the national agenda of developing talent and highly skilled workers[29].



05 SWOT ANALYSIS

SWOT ANALYSIS

MALAYSIA

STRENGTHS	WEAKNESS
English is reasonably widely spoken With the majority of Malaysians speaking both English and Bahasa Malaysia, the language barrier is practically non-existent.	**Tight talent pool** Local talent supply is similarly scarce due to the small population and high density of world class studios.
Positive student enrolment trend There is an increase in student enrolment from higher education in game- and animation-related courses.	**Enrolment dropouts** Despite the positive trend in student enrolment, higher education is also seeing increased student dropout rates in animation and game courses due to a lack of passion and awareness of the industry.
Increase in game and animation courses offered by higher education The number of higher education institutions offering courses relevant to the digital content industry has also increased to support the growing industry over the years.	**Relevant industry experience for lecturers** Lecturers lack exposure and real industry experience.
Close collaboration with institutions of higher learning Most studios collaborate with universities on internship programs, guest speakers, career fairs, syllabus reviews, final year project reviews, and research collaboration.	**More general courses with less specialisation** To widen the job opportunities, higher education institutions have merged or narrowed course scope with less in-depth learning, which ultimately led to a lack of specialised knowledge and skills.

MALAYSIA

OPPORTUNITIES	THREATS
• **Strong consistent government support** The initiatives include talent development programs, incubation and acceleration programs, funding and grants, and international networking to stimulate the growth of digital content. • **SEA foreign talent hiring** Bridging the shortage of local talents by tapping into the SEA foreign talents due to Malaysia's economic competitiveness. • **Market leaders for original content creation** Malaysian content creators have extensive experience in the value chain for original content creation. • **Establishment of foreign companies** More foreign studios are setting up locally, like Larian Studios, Sony Malaysia, Double Eleven, and Bandai Namco, providing more job opportunities.	• **Public's perceptions** To educate the parents and children that the digital content industry is a serious industry with real career growth and future. • **Borderless working in a competitive job market** Malaysian talent is now more interested in working remotely for international companies, where the salary is paid in USD with a greater currency conversion rate. • **Business sustainability by the founders** Those who want to be successful entrepreneurs need to broaden their knowledge and exposure in business and financial management. Five (5) years is the average lifespan for most game companies in Malaysia.

INDONESIA

STRENGTHS	WEAKNESS
• **Excess of untapped talent** There are numerous untapped potential talents available in the Indonesian employment market • **Close collaboration with higher education** Studios are working closely with higher education institutions and vocational schools for internship programs. • **Many vocational schools offer animation programs** There are numerous vocational schools in Indonesia that provide animation programs to produce animation graduates.	• **Scarcity of skill sets and readiness to join the workforce** Despite having a large talent pool, Indonesia lacks specialised skill sets. Fresh graduates need at least six months of training to be job-ready. • **A gap between academia and industry** Vocational schools must strengthen their curriculum development by working with businesses and industry, increase school facilities in line with vocational high school standards, and streamline school management. • **Lack of animation courses in higher education institutions** Less than five (5) higher education institutions offer animation courses, most of which are graphic design courses with limited animation learning. • **Lack of practice in English** According to data from English First (EF), an education institution that runs English courses all over the country, Indonesia is ranked behind Singapore, the Philippines and Malaysia in English proficiency[30].

OPPORTUNITIES	THREATS
• **Original content creation is growing on OTT platforms** Original content development is increasing in Indonesia, particularly for over-the-top (OTT) platforms such as YouTube, Instagram, and TikTok • **New tech creates commission-based jobs** There are increasing opportunities for Indonesian artists to work on commission-based jobs related to NFT projects. • **Government support in training programs** There are numerous vocational schools in Indonesia that provide animation programs to produce animation graduates.	• **Prefer to work as a freelancer rather than a full-time worker** It is unlikely for an experienced animation freelancer to become a studio employee as most talented animators prefer to work remotely with western studios that offer high pay. • **Demand greater wages as talent competition becomes more intense** The growing number of Korean animation companies setting up businesses in Indonesia has affected the job market by paying higher wages to talent, particularly for senior-level job positions. • **Challenges in the pre-production stage of animation** Pre-production in animation is still a challenge among the studios as it requires new ideas, concept artists, scriptwriters, and storyboard artists. In contrast, Indonesian studios are more experienced in outsourcing jobs.

PHILIPPINES

STRENGTHS	WEAKNESS
• **Large talent pool** There is a large talent pool available in the Philippines, with abundant artists and programmers in the market. • **There's no language barrier** English is the official local language (alongside Tagalog), making the Philippines one of the largest English-speaking countries in the world. • **Great cultural fit** Filipinos are known for their strong work ethic and respect for their coworkers[32].	• **Insufficient infrastructure** Students in senior high school who are introduced to animation do not have access to computers for learning. • **Lack of resources in school** There are inadequate computers and learning materials, and inexperienced teachers to sustain sound learning for senior high schools in the animation stream[31].
OPPORTUNITIES	**THREATS**
• **Reduce costs without compromising quality** Among its neighbours, the Philippines has one of the lowest costs of living. • **Government support** Workshops and training sponsored by the Department of Trade and Industry, and the Department of Information, Communication and Technology (DICT) are targeted at the potential workforce. The Cultural Center of the Philippines (CCP) launched grants for Filipino animators, artists and game developers. • **Freelance markets** According to a 2019 report by CNBC, the Philippines placed in the top 6 out of the top 10 countries with the fastest-growing market for freelancers, showing a 35% growth in freelance earnings[33]. • **Active association and community** The Animation Council of the Philippines, Inc. (ACPI), Creative Content Creators Association of the Philippines, Inc. (SIKAP), Game Developers Association of the Philippines (GDAP), Sibu Animation Guild and Sibu Game Guild are among the associations that are actively building the game and animation industry.	• **Demand higher wages** Increased job market competition and borderless working led to an increase in salary demand. • **Internet infrastructure** Accessibility to the internet is limited in some regions of the Philippines, making remote work difficult for the company. • **Lack of exposure in original content creation** The development of content creation is growing, but the industry still lacks exposure in the IP value chain.

SINGAPORE

STRENGTHS	WEAKNESS
• **English speakers predominantly** The majority of Singaporeans speak English. • **Good education system** The Princeton Review ranked DigiPen Institute of Technology as one of the top 5 schools for the study of game design in 2020[34]. • **Short adjunct lecturers in Polytechnic** TThe industry players are also involved as short adjunct lecturers, mostly at Nanyang Polytechnic and less commonly in universities. Other collaborations with tertiary education include syllabus reviews, guest speakers and internship programs. • **Increased acceptance of game professions** Parents' perceptions are shifting, and there is a growing recognition of game professions as viable careers.	• **Limited talent pool** Overall, the talent pool in the game industry is declining because game studios cannot compete with the higher salaries offered by fintech and cryptocurrency companies. • **Small population** Singapore has the smallest population in the region, resulting in a limited talent pool. • **The educational system's inability to keep pace with technological advancements** Learning and knowledge have become obsolete. Neither the lecture nor the students are up to date with the most recent changes in the game industry. • **More general courses being offered in tertiary education** Insufficient knowledge in the specific field of study contributes to the shortage of qualified individuals in the game industry. • **Approval of a Singapore Work Visa has become more difficult and expensive** Rising fees for work pass applications and a security bond of $5,000 is required for each non-Malaysian foreign worker[35]. A new work permit approval system will be introduced in 2023.
OPPORTUNITIES	**THREATS**
• **Increase demand for programmers** The employment market is becoming more competitive as more fintech and crypto companies in Singapore are hiring programmers. • **Surge in remote working opportunities** It has resulted in broader career choices and higher wage demands from talents, particularly those with expertise and specialisation. • **The influx of foreign game studios** There is an inflow of international game companies like Riot, Mihoyo, Ubisoft, Tencent, and Netease establishing themselves in Singapore.	• **High salary demand from programmers** Fintech and crypto companies usually offer more attractive salaries that are double or triple what is offered by game companies. • **Cultural divide** Individuals passionate about games will continue working in the industry. • **Senior-level talent poaching** Singaporean studios think international game companies should hire and train more junior employees rather than poaching the industry's existing pool of talent.

SWOT ANALYSIS

SINGAPORE

OPPORTUNITIES

THREATS

- **Shift from direct government support to having the trade association lead support initiatives**
  A decline in direct government support PIXEL Acceleration Program has shifted its focus to deep tech start-ups. Due to the absence of a country pavilion at international game trade shows owing to COVID, Singapore's presence has diminished in recent years. However, this support role is now being taken up by the trade association, who acts as the bridge between government and the industry, although it will be a long journey to secure substantial monetary support from the government again.

THAILAND

STRENGTHS

- **Accessibility of games and animation programs at the tertiary level**
  Many higher education institutions offer digital content-related courses. Among the institutions of higher learning that offer the courses are Bangkok University, Computer Games and Esports College of Digital Innovation and Technology, King Mongkut's University of Technology Thonburi, Silpakorn University, CMKL University and Mahidol University.
- **Government support for talent development programs**
  Among the two programs are the Game Online Academy and Game Accelerator Program initiated by The Digital Economy Promotion Agency of Thailand (depa). There is also support from the Ministry of Culture, Creative Economy Agency (CEA).
- **Incubation and accelerator programs**
  The Thailand Animation Pitching (TAP) Workshop was organised by the Office of Small and Medium Enterprises Promotion (OSMEP), Silpakorn University and TACGA in 2020. Workshop activities include concept development, script writing, pitching bible, techniques, etc[36].

WEAKNESS

- **Barrier in language**
  Even though the industry is developing internationally, notably for outsourcing services, English is not widely spoken in Thailand.
- **Lack of game programmers**
  In general, game artists and designers outnumber game programmers.

THAILAND

STRENGTHS

- **Industry professionals are part of the educators at the tertiary level**
  For example, approximately 40% of the lecturers at Bangkok University are industry professionals. However, there are certain criteria set by the government in which industry professionals must have at least 6 years of industry experience.
- **Close collaboration between association, academic and industry**
  The Thailand Animation Pitching (TAP) Workshop was organised by the Office of Small and Medium Enterprises Promotion (OSMEP), Silpakorn University and TACGA.

WEAKNESS

OPPORTUNITIES

- **Animation outsourcing powerhouse**
  The animation industry is becoming more globalised in Thailand, with 91% of animation studios providing outsourcing service work, with increasing exports to international companies.
- **Growing esports programs at the tertiary level**
  More higher education institutions are offering esports programs compared to computer science programs due to the increased demand and interest from society.
- **International partnerships**
  DIDTC partnered with DigiPen Game Studios (DGS) to help Thai game developers develop and publish games for Nintendo Switch.

THREATS

- **Lack of original IP development**
  Overall, the talent pool in the game industry is declining There is a lack of ecosystem support for developing original animation content. Thailand's first animated series for preschoolers by The Monk Studios called "Sea of Love" was showing on Netflix this year[37].
- **Skills-based approach**
  As most of the industry focuses on outsourcing services, the emphasis on skill sets development at the tertiary level has shifted away from storytelling and creative thinking.
- **No centralised platform**
  There is a lack of a centralised hub that would serve as a platform for all relevant resources and information in the digital content industry. Several government agencies in Thailand facilitate industry growth without a one-stop centre that could serve as a reference for the studios.

SWOT ANALYSIS

VIETNAM

STRENGTHS	WEAKNESS
• **Big talent pool** A large pool of talent is available with diverse educational backgrounds who are passionate about the digital content industry. • **Industry training program** Most studios in Vietnam's animation industry run training programs to address the industry's talent gap and create a steady supply of animators for the industry. • **Accessibility to software engineer talent pool** There are many fresh IT graduates in Vietnam, which explains the establishment of French games studios like Ubisoft and Gameloft. Moreover, Axie Infinity, developed in Vietnam, was once the most popular blockchain-based game globally.	• **Shortage of the right skill sets and experienced talent** Although a large talent pool is available, most are self-taught learners with no animation education background. Game designers are in short supply as well. • **Lack of animation programs at the tertiary level** There is no specific animation program offered at the tertiary level.. • **Collaboration between industry and higher education is essential** Collaboration between industry and higher education is still lacking in Vietnam. Despite the high growth potential of the animation industry, the animation program is not offered at the tertiary level because it is a relatively young industry.
OPPORTUNITIES	**THREATS**
• **Growing digital content industry** In Vietnam, the digital content industry is young and growing. It is estimated that over 30 animation studios operate there. • **Improvement of English proficiency level** Young Vietnamese are increasingly proficient in the English language.	• **Industry representative** The animation industry does not have a formal trade organisation or representative. One of the Vietnamese game development communities is called Vietnam Game Dev. • **Insufficient government support** The government should invest more in the industry to help it grow and build a better ecosystem.

06 GLOBAL INDUSTRY PRACTICES:

LEARNINGS FROM INTERNATIONAL MARKETS

GLOBAL INDUSTRY PRACTICES:

LEARNINGS FROM INTERNATIONAL MARKETS

FEATURE: BENCHMARKING UNITED KINGDOM (UK) DIGITAL CONTENT INDUSTRY

According to UK Interactive Entertainment (UKIE) trade body, the UK games market was valued at a record figure of £7.16 billion in 2021[39]. Regarding consumer revenues, the UK was the 6th largest video game market in 2021, after China, USA, Japan, South Korea and Germany[40]. The animation market's estimated value was £1.6bn in 2020[41].

One of the UK game and animation industry's key competitive advantages is its workforce quality. Typically, the industries employ highly qualified, experienced and creative talents. The UK has a highly talented and experienced labour force that can produce content and original IP that sells globally. High-quality university games courses, 35 of which are accredited by TIGA, sustain this world-class talent pool[42]. Moreover, more than 50 animation degree courses support the UK animation industry[43].

This study has reviewed the most significant findings, with an emphasis on the potential for talent development as follows:

- Higher education is a strong supporter of the game and animation industry
- Job demand and employment growth in the game industry
- Paths to promotion in the game industry
- Supporting continuous professional development
- Accessibility of incubator and accelerator programs

In addition to a skilled workforce, the following factors have contributed to the growth of the UK's digital content industry:

- **Vibrant industry community and industry representation**

Many industry communities and representatives actively share information, discuss issues, provide training, develop standards and establish policies for best practices in the digital content industry.

For example, ScreenSkills (previously known as Creative Skillset), Creative UK, The Creative Industries Council (CIC), TIGA, UK Games Talent and Finance (UKGTF) and Animation UK.

- **Supporting ecosystem**

Public content funding sources and tax-efficient investment strategies have benefited the industry.

The key sources of UK funding and financial support in the industry include The Global Screen Fund, British Film Institute (BFI) Short Form Animation Fund[44]. Animation Skills Fund, UK Games Fund (UK Games Fund Receives £8m Government Investment, 2022), Video Games Tax Relief (VGTR) and Video Games Prototype Fund[45].

Here is an overview of the workers in the UK games and animation industry:

As reported in the 2022 UK Games Industry Census[46]:

- **The gender makeup of the industry diversified slightly**
  67% of the workforce was male, female workers constituted 30%, and 3% were non-binary, compared to 70%, 28% and 2% in 2020, respectively.
- **The games industry workforce remained young**
  In 2022, 61% listed their age as 35 or under, although this was slightly reduced compared to 66% two years earlier.
- **The figures for ethnic groups remained similar to those reported two years ago**
  66% of the workforce say they are White British, 24% as White Other, 5% as Black, 2% as Asian, 2% as Mixed/ Multiple ethnicities and a further 2% as Other.
- **The games industry workforce remains highly international**
  In the UK Games Industry Report, 20% of people reported a nationality from the EEA and 9% from other parts of the world.

As reported by UK Screen Alliance Survey 2019 for the animation industry:

- The labour force for the animation industry is highly qualified, with 93% of workers owning a degree and 26% also being postgraduates.
- The UK animation industry is well-supported by over 50 animation degree courses, accommodating nearly 2,400 students[43].

KEY FINDINGS FROM THE UK BENCHMARKING

Higher education is a strong supporter of the game and animation industry

Reputed for attracting and nurturing world-class talent, the UK has the largest video games sector in Europe. Higher education in the UK strongly supports the games industry, evident by multiple universities and colleges providing undergraduate and master's video game courses. An accreditation process was introduced by the trade association TIGA in January 2015 to ensure that graduates from universities and colleges have industry-relevant skills[47].

A panel of industry and academic experts examine the courses to ensure that students develop games industry skills and transferable skills (like communication, teamwork, problem-solving, etc.) that are essential to the games industries and at appropriate levels. It is also required for universities to demonstrate that they have the necessary resources (hardware, software, personnel, labs, etc.), curriculum, syllabus, quality systems and student assistance to deliver their courses.

Job demand and employment growth in the game industry

As shown by a new study from trade body TIGA, there has been a 25% increase in employment between April 2020 and December 2021 in the UK games development industry. The number of full-time employees working in games rose from 16,836 to 20,975 in 2021, representing an annualised rise of 14.7%, according to TIGA's Making Games in the UK 2022 report. Annual investment by UK game studios reached £1.3 billion by December 2021, in comparison to £993 million in April 2020[48].

As reported in Game Job Live Report August 2022, 179 out of the UK's 2,284 game companies[49] are currently recruiting for 2,659 roles. London, Leamington Spa, Guildford, Edinburgh, Brighton and Cambridge are among the major hubs. The most common job roles are producer, technical artist, environment artist, programmer, game designer, VFX artist, animator, software engineer, gameplay programmer, UI artist, character artist, art director, level designer, lighting artist, product manager and graphics programmer. AAA game studios seek considerably more headcounts compared to indie game studios and generally look for experienced candidates to fill available roles[50].

Paths to promotion in the game industry

In the three years prior to the UK Games Industry Census, more than two-fifths of game employees were promoted at their company, and one-fifth made diagonal moves to take up senior roles in a different organisation. The most likely age group to be promoted are people aged between 26 and 35, whereas those less likely to have advanced are aged 41 and above[46].

On the other hand, the results of the survey in partnership between UNI Global Union and the Strategic Organizing Center (SOC) indicated the top workplace issues among game workers were low pay (66%), excessive work demands and/or working hours (43%), and inadequate benefits (43%)[40].

Supporting continuing professional development

The industry actively develops innovative existing and new talent in numerous ways:

- Short courses, boot camps, employment advice, and further training were launched by NextGen Creative Skills Hub, which is funded by the Greater London Authority (GLA) to prepare talent for work in the games, animation and VFX industry[51].
- ScreenSkills (previously known as Creative Skillset) provides the latest and relevant creative industry training and education.
- TIGA Accreditation ensures UK universities produce graduates with relevant skills in the game industry.
- The goal of the Creative Careers Program, launched in 2019 with $18.3 million of industry and government support, is to raise awareness of the range of employment opportunities in the creative industries[52].

GLOBAL INDUSTRY PRACTICES

Accessibility of incubator and accelerator programs

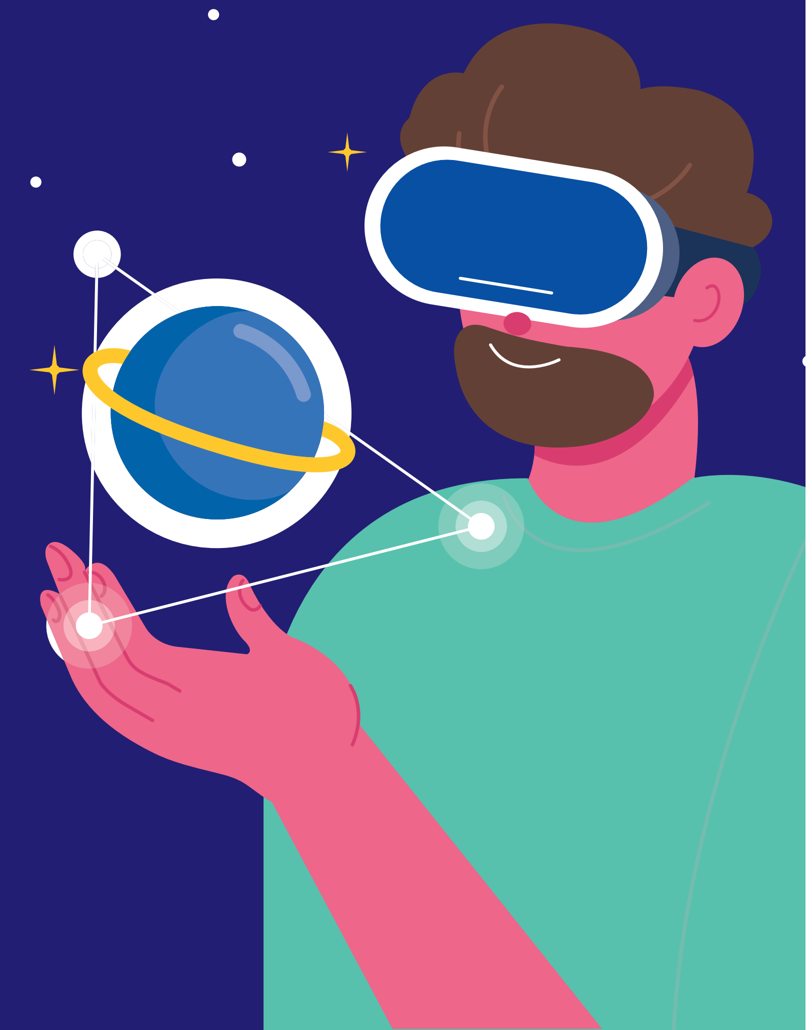
Many incubator and accelerator programs are available for entrepreneurs in the UK games and animation industry with the main purpose of developing successful startups. These programs give startups access to mentorship, investors and other support to help them become stable, self-sufficient businesses. Some examples are:

- Games London is a free accelerator program for game studio founders to help develop their business sense[53].
- Madness Ventures is a unique incubator program for game developers to build, test and market their new free-to-play, chance-based mobile games[54].
- Tentacle Zone Incubator is a free 4-month virtual games incubator program supporting early-stage developers from underrepresented backgrounds and covering areas like business and finance, team building, design, development and production, marketing and PR, as well as pitching and public speaking support[55].
- NatWest Accelerator is a six-month accelerator program for entrepreneurs in the UK's esports, gaming, streaming and social media markets, focusing on skill development, knowledge and networking support[56].
- Big Thinkers is an animation accelerator program launched to discover the next major animation hit authored by diverse UK creators[57]. The chosen three winning creators were invited to develop their ideas into functional pitch bibles. They also get to partner with experienced creative teams and studios to present their ideas to broadcasters, platforms and overseas partners[58,59].

Kaigan Games, Malaysia

07 THE FUTURE OF THE DIGITAL CONTENT INDUSTRY:

WEB 3.0 AND THE CONTENT ECONOMY



THE FUTURE OF THE DIGITAL CONTENT INDUSTRY:

WEB 3.0 AND THE CONTENT ECONOMY

Based on the data from Newzoo, IDC, PWC, Statista and Two Circles, the global Metaverse market is projected to reach $783.3 billion in 2024 vs $478.7 billion in 2020, growing at a compound annual growth rate of 13.1%[5].

The pandemic and novel concepts like cryptocurrency, NFTs, Blockchain, and Metaverse infiltrating conversions have given rise to Web 3.0. As the revolution ushers in a new internet age, the content economy is anticipated to grow and ultimately greatly benefit content creators. For one, Web 3.0 promises the transfer of ownership and power to the original content creators. Consequently, this contributes to eliminating the exploitation of content creators on platforms such as YouTube, Instagram, Facebook, TikTok and more. More importantly, content creators can leverage Web 3.0 technologies to clearly define content ownership with better royalties, earn revenue from diverse streams and enhance user experience[60].

Many are optimistic about how the metaverse will be more interactive, immersive and experiential. In fact, the open ecosystem, decentralised, fully realised interconnected virtual worlds in the metaverse are set to bring society into the next great social and economic transformation[61]. Some of the most well-known metaverse projects include Meta Horizons (Facebook), Fortnite, Decentraland, Nvidia Omniverse, Roblox and The Sandbox[62].

No doubt, many Asian countries are highly incentivised to take full advantage of the Metaverse[63].

In 2022, there has been a surge in national/government-supported Metaverse projects and initiatives in competing nations worldwide:

1 INDONESIA

As early as December 2021, President Joko Widodo mentioned that Indonesia must be ready for the trend of metaverse technology, while also emphasising the role of government institutions in the transition. JAGAT, a social metaverse platform, will be launched at the G20 Bali Summit as part of a private-led and government-supported initiative. The introduction of JAGAT aims to promote inclusivity and encourage the participation of more Indonesian in government matters and the G20 summit[64].

2 THAILAND

The Ministry of Digital Economy and Society (DES) is banking on Thailand being one of the early adopters of metaverse technology and commercialising it. With the development of the nation's 5G networks and IT infrastructures, the government hopes to leverage virtual reality, the Metaverse and the digital economy's next evolution. Additionally, the Minister of Tourism and Sports, and the Minister of Digital Economy and Society have chosen Phuket as the nation's first Metaverse city, with the details and budget yet to be announced[65].

3 VIETNAM

While the nation is still in the commercial testing phase for its 5G network, a steering committee was set up by the Ministry of Information and Telecommunications to promote the research and development of 6G mobile technology. Overall, both technologies provide high speed, low latency networks needed to support the Metaverse. Also, a Draft Law on E-Transaction was released by the Ministry for public comment, which proposes new regulations and requirements for digital signatures and digital identities, in support of transactions in the Metaverse (like online purchases). These transactions are typically made by cryptocurrency or by connecting a digital wallet to a bank account, necessitating base legal frameworks and secure digital payment confirmation, such as digital signatures, digital identities and e-contracts[66].

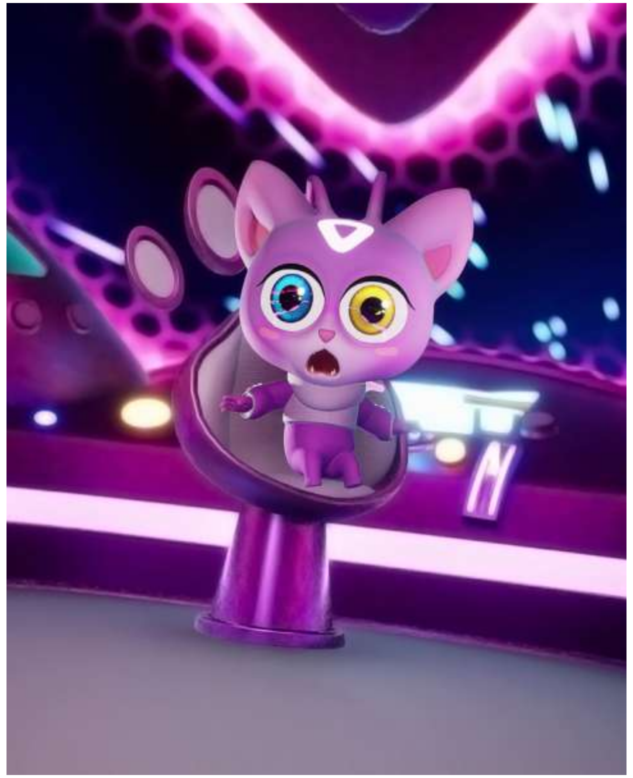
4 DUBAI

The Dubai Crown Prince Sheikh Hamdan has launched a comprehensive strategy in Dubai to attract over 1,000 blockchain and metaverse companies, and support over 40,000 virtual jobs by 2030. Among the areas of interest are metaverse innovation and economic contribution, cultivating metaverse talent, and developing metaverse use cases and applications within the Dubai government [67,68].

5 SOUTH KOREA

South Korea is fast becoming one of the leading nations in the metaverse market. The Korean Ministry of Science and Information and Communications Technology (ICT) has budgeted a massive national funding of $177 million to spur the metaverse industry in South Korea, supporting businesses and job creation. Minister Lim Hyesook has also remarked on the unlimited potential of the uncharted digital continent, which indicates the government's stance to spearhead Metaverse technologies. To this end, the national investment would be used to build a metropolitan-level metaverse platform, with Seoul as the centre, allowing citizens virtual access to various government schemes and services. Ultimately, the main purpose is to build platforms that enable businesses and industries to thrive and a metaverse for citizens to deal with civil complaints and consultations virtually [69,70,71].

Circle Studio, Malaysia



THE FUTURE OF THE DIGITAL CONTENT INDUSTRY

DIGITAL CONTENT SKILLS IN THE METAVERSE

In recent years, there has been a drastic shift in the creator economy, which mirrors the rapid development of the internet towards Web 3.0[60]. The creation of content experiences for people to interact with in the metaverse is just as crucial as the technology that makes it feasible.

The demand for talents to build, innovate, and grow disruptive technologies is growing. For instance, metaverse projects demand digital content-related skills[61] as listed below:

3D Modelling and Design

The worlds created in the metaverse will be immersive and three-dimensional. This is evident in the worlds everyone created, including Meta, Roblox and Decentraland. Specific design sensitivities practised by video game designers and animators working on 3D movies are necessary for these environments to be functional, engaging and immersive. For the most part, designers are tasked with conceptualising, prototyping, and building the environments and objects in the metaverse for users to explore and interact with.

VR/AR Development

Virtual reality (VR) or augmented reality (AR) is not a must in the metaverse. Even popular platforms, such as Roblox or Decentraland, considered to offer metaverse experiences today, are perfectly functional on conventional, 2D screens. However, many foresee the significant role of virtual reality in enabling metaverse creators to build more immersive environments and interfaces. Likewise, AR intersects both the real world and virtual world, making it a vital element of metaverse experiences. Undoubtedly, skills in development utilising both technologies will be in high demand.

UI/UX Design

User interfaces (UIs) serve as connection points between users in the real world and the metaverse's virtual environments. From touchscreen interfaces on mobile phones to full body-tracking capabilities of immersive VR, UI skills are necessary to ensure more natural and friction-free interfaces. Similarly, this adds to the broader field of user experience (UX), which is the art and science of making our experiences using the software (in this case, metaverse software) as intuitive, entertaining and rewarding as possible. A good starting point for individuals looking to start a career in metaverse development is qualifications in either or both of these disciplines.

Computer Programming

Designers will create various metaverse experiences through low-code or no-code worldbuilding solutions, like Roblox or Somnium Space, and tools such as Unity, which require an understanding of coding to be fully utilised. But such tools must first be produced, and as the metaverse and its user base mature, newer tools will be needed to deliver richer and more immersive experiences. As such, companies and organisations striving to be on the leading edge of metaverse development are expected to require talents with strong coding skills.

Blockchain/NFT Engineering

Among visions of how the metaverse will evolve are concepts like decentralisation and the uniqueness of digital assets. Blockchain must be included in the underlying technology layer for this to happen. This enables distributed, decentralised infrastructure to be created and used to build worlds that are controlled by their owners instead of who owns the servers or data centres where they are stored. NFT technology allows us to create one-of-a-kind or limited edition assets with proof of ownership or the rights to use or sell them. Those who can create Web 3.0 infrastructure and assets will be instrumental in the development and administration of the metaverse.

08 RECOMMENDATION & WAY FORWARD

Quest Studio, Malaysia

RECOMMENDATION & WAY FORWARD

Industry-recognised quality assurance standard for higher education courses

An industry accreditation body should be established to endorse programs that meet industry requirements and needs. Moreover, this can ensure that higher education produces graduates equipped with industry-relevant skills. In the UK, the TIGA Accreditation process was introduced by the trade body TIGA in 2015, with 35 games courses achieving TIGA Accreditation as of April 2022.

The program accreditation aims to ensure that programs meet recognised levels and standards of professional knowledge, skills and understanding relevant to industry needs. It also helps programs meet international benchmarks for the creation of future-ready talent.

Among the most critical requirements and elements of accreditation are:

- **A panel of industry and academic experts** to examine and review the courses according to industry standards, including in-demand industry expertise and social skills. For instance, communication, teamwork, problem-solving and other soft skills are essential in the industry at an appropriate level.

- Comprehensive **infrastructure and facilities** in higher education are tremendously essential to provide a cohesive learning environment. Higher education institutions must demonstrate that they have the necessary resources (hardware, software, personnel, labs, etc.), curriculum, syllabus, quality systems and student assistance to deliver the courses.

- Each course will be assessed on its own merits. Higher education institutions must show that they **work closely with the games and animation industry** to remain up-to-date and relevant. To submit a course for accreditation, higher education institutions must identify specific games and animation skill demands, and their courses must be developed to meet these demands.

- Educators at higher education institutions with the right **teaching skills and substantial industrial work experience** to produce skilled, job-ready graduates that meet industry standards.

- A practical understanding of the industry and how theory studies apply in real-world situations is crucial. Higher education institutions must demonstrate a balanced compromise between **practical and theoretical knowledge** in developing future-ready talent. Some viable options to acquire the necessary hands-on experience to compete in today's job market are apprenticeships, internships and on-the-job training.

- A key part of the accreditation process is a **graduate job tracker**, which provides details of the percentage of graduates finding employment in the game and animation industry and other related industries.

- There should be regular promotions of **training programs and recruitment initiatives** in IHLs. Employers, students and alumni should have access to a searchable and functional job portal that incorporates real-time career advice and relevant training programs[72].

Building a conducive ecosystem for the digital content industry

It is of utmost importance to provide the digital content industry with a business environment that is both competitive and able to sustain long-term growth. As the industry grows, employment opportunities and the level of competitiveness in the market will increase as well.

The following are recommendations for probable interventions from the government:

- **A business-friendly taxation system** can be introduced to catalyse digital content industry growth and promote employment-rich economic growth through investment development initiatives.

  Employment, innovation and investment in the UK video games industry have increased due to the sector's evidence-based Video Game Tax Relief (VGTR). The relief has also played a vital part in allowing the UK to compete on a more even playing field against competitors abroad[73].

  Other examples of relief that have further spurred the growth of the creative industry in the UK are the Animation Tax Relief, Film Tax Relief, High-end TV and children's TV Tax Relief[74,75].

- Governments should consider creating a **digital content industry hub**, where a huge number and variety of games, animation, VFX, and VR/AR services companies cluster in a city or region.

  A specialised business hub will attract international companies to establish their presence in Southeast Asia, enabling knowledge transfer through training and hiring local talents. As such, local talents will also be able to expand their skill sets and knowledge, making them more competitive in the future.

  For example, the major gaming hubs with high demand for talent in the UK are London, Leamington Spa, Guildford, Edinburgh, Brighton and Cambridge[76].

Dreamatix Studio, Malaysia

A clear path for career progression and lifelong learning career development

The industry should have a career path or plan outlining the skills and experiences required for promotions or work at various levels.

Generally, employees are more engaged when they believe that their employer supports their development and provides the means to achieve their career goals while playing their part in the company's mission.

- A **career development path** provides employees with continuous opportunities to enhance their skills and knowledge, ultimately leading to mastering their current positions, promotions or transferring to new or other roles. Several benefits of a clear career path include improving morale, career satisfaction, job motivation, and productivity, all of which contribute to the company's goal.

  Moreover, this will gradually shift the public's perception of the creative industry to recognise professions in the industry as viable careers with a promising future and attract more students to explore the high-potential industry.

- Opportunities for **continuous training and development** will help talents keep up with the everchanging fast-paced industry. With the rise of Web 3.0, there will be higher demands for digital content skill sets for creating new experiences.

  In order to remain competitive and relevant, talents in the industry, as well as academia, must have access to upskilling and reskilling resources. Students should have the opportunity to participate in industry-sponsored training and workshops. Plus, training that is funded or subsidised by the government will help nurture talents even further.

  Some examples of government-funded creative industry training are the NextGen Creative Skills Hub, The Creative Careers Program and Creative Skillset (now known as ScreenSkills) in the UK.

Open incubator and accelerator programs develop future-focused talent leaders

Specialised business incubator and accelerator programs in the digital content industry support startups and help them become stable, self-sufficient companies. These programs give startups access to mentorships, investors, expertise, networking opportunities and other business support.

- The government and industry leaders can collaborate to launch an open incubator and accelerator program for startups in the games, animation, and digital content-related industries. The program would have a positive spillover effect on the broader business ecosystem. For instance, accelerated companies are more likely to generate higher revenue and investment growth. It would also develop future-focused talent/leaders/founders to run the business.

- As more incubator and accelerator programs are established, the number of VC deals and the total amount invested in the region can potentially increase, contributing to the creation of more and better quality jobs[77].

  Two examples of free incubator and accelerator programs in the UK are Game London and the Tentacle Zone Incubator.

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10 RESEARCH TEAM

RESEARCH TEAM

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Juleza is the lead analyst of Research & Ecosystem Development in the Digital Creative Content of Malaysia Digital Economy Corporation (MDEC). Her current work includes formulating research and thought leadership papers towards digital content ecosystem growth, within the fields of games, animation, visual effects, OTT and streaming and more. She also has extensive experience in program management and client services as well as leading novel and pilot developmental projects such as the Enterprise Development Program (EDP), DICE-UP and Kre8tif!@Schools.

Prior to government service, Juleza was an external auditor in one of the Big Four firms. While there, she was exposed to various industries, including property, plantation, services and retail industry. She holds a Masters of Business Administration, Bachelor of Accountancy and CPA Australia.

Jasni Zain

Head of Research and Partnership
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Jasni is the Head of Research & Ecosystem Development in the Digital Creative Content of MDEC. Currently, he heads several research and ecosystem development programs such as talent and skills development, and incubation support in the Digital Creative Content ecosystem, mostly focused on assisting partners and companies in the space of animation, games, visual effects and new media. He has led strategy formulation initiatives, including the formulation and syndication of the Digital Content Ecosystem Policy Paper as well as the macro-economic position papers for the 11th and 12th Malaysia Economic Plans.

Jasni has led the research and analytics behind multiple industries and economic initiatives, including the Digital Creative Industry COVID-19 Report 2020, South East Asia Animation Industry Report 2018, the South East Asia Game Industry Talent Report 2016, the Digital Economy Report 2014 and more. He has 20 years' experience across a range of industries, of which the past eight were in the public sector, concentrating on IT and IT services.

Graduating with an Engineering degree, he counts golf as his ultimate lifelong yet fruitless obsession and Civilization II as both his favourite video game and the biggest time sink of his life.

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