MDEC®

20 Years and Beyond

SOUTH EAST ASIA GAME INDUSTRY TALENT REPORT 2016

EXECUTIVE SUMMARY

In 2015, several strategic recommendations were formulated to suggest pathways by which the South East Asia region could fully capitalise on opportunities and accelerate the regional video game industry's growth. These strategic recommendations were encapsulated in the South East Asia Game Industry Initiative 2015 report that also discussed at length the situational analysis of the industry from a production perspective juxtaposed against more matured and successful industry locations and was a seminal paper to understand the landscape and plot a course forward.

This current edition, the South East Asia Game Industry Talent Report 2016, aims to continue the understanding of the regional sector, with a deeper focus on the underlying critical success factor: industry talent supply and demand.

Like all knowledge economy sectors, the role of talent development and talent demand is necessary for long-term, sustainable growth. This 2016 report was formulated with the assistance of two major parties: the first being the regional associations and industry players, and the second being the talent providers and Institutes of Higher Learning (IHLs).

In combination, this research provides insights and suggests recommendations on the key issues such as talent capacity, skills and capabilities, talent development and the surrounding ecosystem.

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Media Create

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FOREWORD BY CEO OF MDEC

GAME DEVELOPERS, COMMUNITY MEMBERS AND IHLS,

Thank you for joining us on this exploration of the South East Asian game industry. This report, the South East Asia Game Industry Talent Report 2016 is a fantastic window into one of the most exciting industries that marries the diverse disciplines of art, animation, modelling and design together with cutting edge digital technologies of mobile, analytics, network engineering and AR/VR. Truly, the game industry is, and always has been, at the forefront of tech innovation and creative destruction.

Within the context of our regional Digital Economy, the game industry has been one of the hottest and fastest growing tech sectors. 2016 in particular has shown that in spite of global economic challenges, the sector has been very resilient, growing at 29%, 2.8 times the overall ASEAN GDP. We at the Malaysia Digital Economy Corporation (MDEC) are proud to say that we have some small part to play in this dynamic environment.

In 2015, we initiated the South East Asia Game Industry Initiative study, assisted by participation of the game industry and communities from six South East Asian countries. It was a unique report that focused on the development and production side of the industry and a perfect complement to the consumption reports that frame most market research. The response has been tremendous, with many suggestions on a follow-up paper to further commonly understand our regional strengths and explore possible areas of improvement.

Our sights have not wavered since last year: building the foundations to a robust, dynamic industry that is truly multi-national and strengthening South East Asia as a video game producing region.

This report, the South East Asia Game Industry Talent Report 2016, was research that had those goals firmly in mind. Our focus in 2016 is on talent supply and demand and the nuances of ecosystems that support regional talent development. Together with our research partner, Media Create, an industry market research expert in Japan with extensive Asia Pacific and global market coverage, we feel that the theme of game industry talent supply and demand was the perfect research to undertake at this juncture as we aim to create a connected South East Asian region.

The momentum created is tangible based on the outpouring of support for this research, with primary research such as interviews, engagements and surveys being fully supported by all participating nations. In addition, this year saw the engagement of almost 40 IHLs from across the region, adding to the insights to understand the issues of game industry talent supply and demand.

We have to work hard to ensure that the complex economic marvel known as the South East Asia game industry continues its stellar growth. MDEC would like to extend our deepest gratitude to the South East Asian partners, industry players and IHLs who have contributed to the making of this report.

Thank you and we hope you enjoy the findings.

DATO' YASMIN MAHMOOD
Chief Executive Officer
Malaysia Digital Economy Corporation

"THE GAME INDUSTRY HAS BEEN ONE OF THE HOTTEST AND FASTEST GROWING TECH SECTORS. 2016 IN PARTICULAR HAS SHOWN THAT IN SPITE OF GLOBAL ECONOMIC CHALLENGES, THE SECTOR HAS BEEN VERY RESILIENT, GROWING AT 29%, 2.8 TIMES THE OVERALL ASEAN GDP."

FOREWORD BY RESEARCH PARTNER
MEDIA CREATE (JAPAN)

SHO SATO
Chief Analyst,
Media Create

"

It is my great honour to collaborate with MDEC to research the South East Asian game industry ecosystem. Through many meetings with game industry talent in the South East Asia game industry, I am very impressed with their positive attitude towards their thirst for acquisition of knowledge and skills. Such an attitude will definitely move South East Asia game business forward to be an integral part of the global game industry.

Through quantification and analysis of this report, the South East Asia Game Industry Talent Report 2016 will help game companies in this region realise their strengths and weaknesses, and provide a reliable source to promote this industry for local partners, investors and governments. This report will further help regional IHLs that provide game courses a foundation to initiate and maintain relationships with game companies, game development experts and talent seeking a career in the game industry.

I sincerely hope this report contributes to further development of the South East Asia game industry, and lead to an emergence of interesting games which can never found in other regions in the world."

FOREWORD BY SUPPORTING PARTNERS THROUGHOUT SOUTH EAST ASIA

MALAYSIA

"The South East Asia Game Industry Initiative 2015 by MDEC has been very helpful to IGDA Malaysia in aiding our efforts to grow the local game industry in Malaysia through collaborations and partnerships with regional and global game industry. We are looking forward for the upcoming release of their latest research focusing on talent/manpower; the most important factor of growth for any game industry. We believe it will help us to understand better the unique strength of each country in South East Asia and hopefully pave the road for future collaborations and partnerships among game companies, education institutions, government agencies and other stakeholders of the regional game industry."

BAZIL AKMAL BIDIN
IGDA Malaysia

TAN CHIN IKE
MyGameDev

"This report serves to bring awareness and validity of the massive potential of the South East Asian game industry has to offer. My primary role is ensuring that institutions are generating graduates which are industry-ready (hence – are called skilled talents) and getting a ready pool of raw talent to feed into that talent pipeline. However, most conservative Asian parents are not aware that the electronic game industry is a massive, growing industry and a viable career choice. The primary measure of success in a digital game region is a critical mass of game developers or talent. Without this critical mass, it is difficult to find support, retain talent, and attract visibility. This report through its research and findings will not only give an opportunity for our fellow SEA game developers to band together to build SEA as a serious regional hub for game development with international visibility but also for domestic awareness within our respective countries of the rising growth of this exciting industry."

INDONESIA

"The SEA Game Industry Initiative will help the SEA game industry stakeholders to get the most updated information to fill the biggest gap in our game industry ecosystem, Talent. I really hope that our industry stakeholders, especially the leading companies, government and academic institutions, could transform the result of this research into real actions that could improve our talent ecosystem."

ARIEF WIDHIYASA
CEO, Agate Studios
Asosiasi Game Indonesia (AGI)

FOREWORD BY SUPPORTING PARTNERS THROUGHOUT SOUTH EAST ASIA

GABBY DIZON
CEO, Altitude Games
Game Developers Association of the Philippines (GDAP)

PHILIPPINES

"

The SEA Game Industry Initiative is a project undertaken by the region's game industry to promote the success of game developers around the entire region. For over a decade, we have been pushing the region's game industry to succeed by collaboration, and this project is a fruit of that action. We are looking forward to seeing more sustainable game studios in the region in the coming years."

SINGAPORE

"

I'm very encouraged that MDEC is leading an initiative to provide the industry with a holistic view on South East Asia's ecosystem.

As leaders, this will enable us to understand the industry gaps that we have and see how we can collaborate across the region on education, incubation, co-development, co-publishing initiatives in a sustainable manner."

GERALD TOCK
CEO, Inzen Studios
IGDA, Singapore

ASST. PROF. DR. PISAL SETTHAWONG
Assumption University
Thai Game Developers Corner (TGDC)

THAILAND

"

There has been increased cooperation and talk about the similarities and unity of the countries of the SEA region, an important fact since all countries in the region are distinctly unique. While it may seem that countries in SEA sometimes work in isolation, it is with great pleasure to see this type of effort to unite the region via increased collaboration via many levels and means.

In the game industry, it can also be said that every single country in SEA have distinct characteristics such as their strength, weakness, challenges, and opportunities in regards with the game industry, sometimes unique from their neighbours. It is great to see the work done in the South East Asia Game Industry Talent Report 2016 where regional representatives converge to discuss many far-reaching issues. This study provides interesting insights into the game industry in SEA and is a potential springboard towards further cooperation in the industry in the future. I firmly believe that would be a highly valued contribution to the game industry in the region.."

OBJECTIVE 02

OBJECTIVE

Terato Tech, Malaysia

A FOCUS ON THE TALENT SUPPLY AND DEMAND IN THE SOUTH EAST ASIA GAME INDUSTRY

The objective of the South East Asia Game Industry Talent Report 2016 paper is to provide insights of the state of supply and demand of the game industry talent. This is to enable informed suggestions of strategic and tactical recommendations leading to further enhancing the talent ecosystem of the regional game industry.

The recommendations proposed in this paper are the natural continuation of the research laid out in the South East Asia Game Industry Initiative 2015 paper. That study has already laid out several high-level recommendations such as suggested formation of a funding framework, building a regional network of game associations and more. This 2016 research will be focused on providing insights to talent development and supporting ecosystems for a continued, aggressive yet sustained long-term growth of the industry.


BACKGROUND 03

BACKGROUND

SITUATIONAL ANALYSIS

The 2015 South East Asia Game Industry Initiative Report highlighted certain key characteristics of the game industry from a production perspective. This is a useful industry situational analysis. Notable points include:

1. Size and growth potential of South East Asia video game market
    a. The region represents ~4% of global consumption. The South East Asia market is forecasted to grow at a CAGR of 30% from present to 2018. By comparison global growth rate for the game industry is forecasted at 7%.
2. The characteristics of the game industry in South East Asia
    a. SEA region is non-homogenous in terms of the production ecosystems, e.g. Malaysia and Singapore have a strong level of government support for the industry, in particular funding and market access. In other countries, the game industry is driven primarily by private enterprises and associations representing developers and community.
    b. Game production in South East Asia is across a few types of game activities including original IP creation, work for hire, licensed developer and publishing.
3. Strategic recommendations were proposed to further accelerate the growth of the industry via the following areas:
    a. Human capital and talent development
    b. Funding framework
    c. Game associations for South East Asia
    d. Branding and awareness
    e. Treaties and legislation

The South East Asia game industry has tremendous growth potential owing to its youthful population, growing middle class and a beneficiary of technologies such as the mobile platform, an established base of game engines that commoditise technologies and others that lower the barrier to entry for new entrants. However, the situational analysis also pointed to several issues:

1. Larger scale IP need longer development time and necessitate larger teams. With the average South East Asian game studio having less than 50 employees, creating larger scale IP is a long-term challenge bound by the supply of quality talent.
2. The number of degree holders in the industry are in the minority (48%). Skills are valued in the game industry through practical experience and portfolios. The limited quantity of game talent combined with gaps in skill-sets raise additional challenges in the industry.
3. The game industry community in South East Asia is vibrant, but has limited interaction amongst peers. These interactions are limited to a few touch points, usually at market events. For IHLs, the community is further isolated with opportunities being very limited.

METHODOLOGY 04

METHODOLOGY

THE APPROACH FOR THIS PAPER WAS BASED ON THE FOLLOWING THREE PHASES:

PHASE 1:
SOUTH EAST ASIA GAME INDUSTRY: SUPPLY AND DEMAND OF INDUSTRY TALENT

This phase is focused on collecting primary and secondary data to provide a nuanced, layered view of game industry talent. This would include the wide, macro view to provide global and regional analysis; slightly focused view to provide national, industry and IHL analysis; and anecdotal evidence to illustrate specific context. In summation, the aim of this phase of research is a comprehensive view of the current state of the game industry talent supply and demand.

For clarity, the reference to the "supply" and "demand" of talent refers to the two major facets of talent within the game industry in South East Asia.

1. The talent "demand" portion of the game industry: these are the talent drivers, comprised of developers and publishers that require and employ talent with the necessary skill, experience and industry know-how to make game industry products and services
2. The other, talent "supply" portion of the game industry, are made up of IHLs that train talent for academic pursuits, as preparation to enter the industry

This study is based on the following data sources:

1. Primary research provides the necessary information on current size and skill level in the industry, as there is simply not enough literature available on the South East Asia game industry from a production standpoint. This primary research was composed of regional surveys, meetings and interviews with both the industry and IHL parties
2. Secondary research was undertaken to understand and model the existing regional and global state of talent in the industry. As stated above, the challenge was to find sufficient material on the game industry production perspective

The research frame was conducted along four major research pillars of talent capacity, talent capability, ecosystem and incentives. A full listing of the research pillars is as below:

- **Capacity**
  The capacity of the game Industry is underpinned by the strength of its workforce
- **Capability**
  The game industry requires some of the most competent, highly skilled and highly motivated individuals to produce quality output
- **Ecosystem**
  The success of any service industry lies in a healthy ecosystem that nurtures talent and scales up the talent pool size in a sustainable manner
- **Incentives**
  Incentives are an effective means to stimulate an industry, and talent supply policies/funding can assist greatly to build scale

Inzen Studio, Singapore

SOUTH EAST ASIA GAMES INDUSTRY INITIATIVE – PRIMARY RESEARCH

The survey involved two major players: South East Asia game industry players and South East Asia IHLs that produce talent utilised by the game industry. This study covers participants from six major game industry nations consisting of two question sets: industry and IHL. Each question set had under 50 questions.

A SWOT analysis was undertaken subsequently to identify the various strengths, weaknesses, opportunities and threats associated with each nation.

It has to be addressed that the smaller sample size as compared to the 2015 sample pool was planned for and matched expectations.

- The 2015 report covered a wide range of companies to determine the baseline of the industry. Thus the sample was cast to the widest net possible
- The 2015 report had exclusive coverage on the industry portion, and hence the sample pool was unified. This 2016 report has a second dimension of universities and IHLs, adding a complementary layer, requiring a different but parallel question set

A sample size of 49 game industry players and 39 universities and Institutes of Higher Learning (IHL) participated in the survey. The breakdown of the participants' countries are shown in **Figure 1** and **Figure 2**.

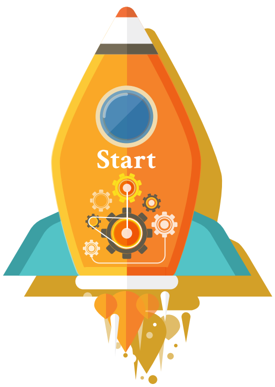
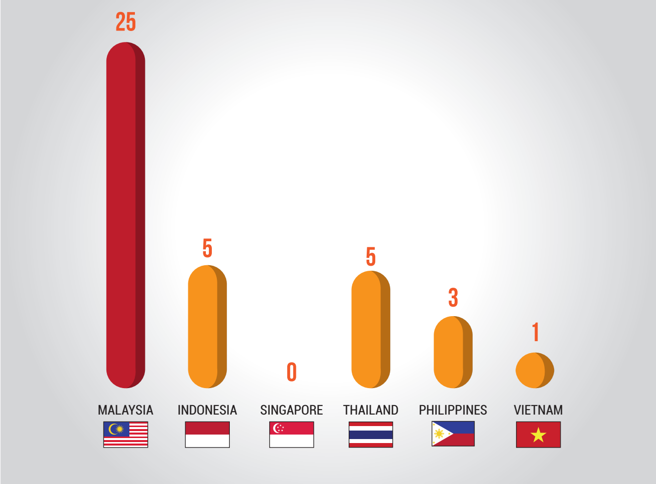


FIGURE 1 GAME COMPANIES IN SOUTH EAST ASIA REGION

Others = based in more than one ASEAN nation

FIGURE 2 INSTITUTE OF HIGHER LEARNING IN SOUTH EAST ASIA



PHASE 2:
BENCHMARKING OF A SUCCESSFUL GAME INDUSTRY HUB

This edition of the study has a specific theme, with the issues of talent at the forebear combined with a sub-text of further regional industry integration.

With this understanding of the course taken by the five countries of Sweden, Finland, Denmark, Norway and Iceland, it was envisioned that South East Asian countries could similarly work together on an industry level, and develop substantive plans for the sector.

The Nordic region was chosen for the following dynamics:

a. **High degree of regional cooperation**

The Nordic game industry had the seed development of the industry conducted at a national level. However, trade and developer associations sought out better ways to cooperate, giving rise to organisations such as the Association of Nordic Game Industry (ANGI). With the impending impact of the continued crystallisation of the ASEAN Economic Community, there are opportunities for greater regional cooperation.

b. **Supportive role by the government**

Finland, Norway and Denmark are known for having a high level of government support to build a creative industry ecosystem which features video game development as part of the profile. Regionally, there is also further support by EU public sector initiatives to promote creative industries.

c. **The Nordic region and South East Asia further share the following commonalities**

- Historical similarities of diversification away from natural resources to high-tech and services
- Long-term reliance on the global markets for industry growth: the Nordic region are net exporters similar to ASEAN, which rely on the bigger consuming economies for long-term growth
- Strong focus on casual mobile as the bedrock for growth: the game industry in the Nordic region (in particular Finland) is dominated by the casual mobile genre owing to a youthful game company demographic and current industry trends

Gattai Game Studio, Singapore

PHASE 3:
ANALYSIS AND SYNTHESIS OF SURVEY AND BENCHMARKING FINDINGS

This section of the report builds on the findings of the earlier phases and synthesises the report into meaningful outcomes. The objective of this phase is to highlight ecosystem strengths, gaps and develop recommendations.

INSIGHTS AND OBSERVATIONS 05

INSIGHTS AND OBSERVATIONS

A TOTAL OF 49 GAME COMPANIES AND 39 INSTITUTES OF HIGHER LEARNING FROM MALAYSIA, INDONESIA, PHILIPPINES, SINGAPORE, THAILAND AND VIETNAM PARTICIPATED IN THE SURVEYS. KEY FINDINGS FROM THE SURVEY ARE DISCUSSED BELOW.

GROWING A REGIONAL DIGITAL FUTURE TOGETHER:
THE GAME INDUSTRY TALENT DISCUSSION IN SOUTH EAST ASIA

South East Asia is a unique melting pot of young and largely diverse companies in the game industry. Hence, the driving force behind game industry talent demand is not as straightforward if compared with other technology sectors.

The demands placed on prior industry experience, technical skills, business knowledge and product development has led to difficulty in acquiring such talent. However, these challenges are not unique to the South East Asia region and represents a global shortage of quality talent.

Fire Beast Studios, Indonesia

SITUATIONAL ANALYSIS OF THE SOUTH EAST ASIA GAME INDUSTRY

The majority of game companies in South East Asia are developers. Some 49% of the companies surveyed were involved in this segment of the business as shown in **Figure 3**. 39% of the companies surveyed were involved in the segment of both game development and game publishing activities. A relatively small percentage of the companies are involved in game publishing.

Small studios make up a significant portion of the companies surveyed. These studios have between two and ten employees which indicates many startups in the ecosystem and a young, vibrant industry. Companies with more than 100 employees were also surveyed and these consisted of established names in the global video games scene. The mix of companies in **Figure 4** shows the size of companies throughout South East Asia.

Small game companies rely on references by employees and that may be enough to suit their needs. However, as a company grows, it becomes difficult to get talent only through individual references. Thus, companies that are growing need to use other ways of recruitment and establish a system of hiring talent. Most game companies in growth stage struggle with changing the method of acquiring talents.

The majority of companies (65.3%) are younger than six years old. Companies in Indonesia, Philippines, Singapore and Thailand were predominantly three years old and younger. At the same time, 18% of companies surveyed are more than 10 years old. Additionally, some members of the gaming startups in South East Asia have had past experience of working in other game companies enhancing the teams combined experience. **(Figure 5)**.

FIGURE 3 BUSINESS ACTIVITIES

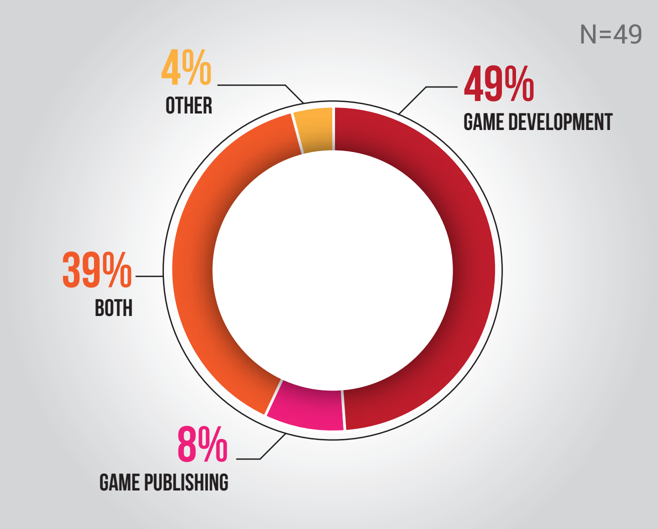


FIGURE 4 SIZE OF COMPANIES

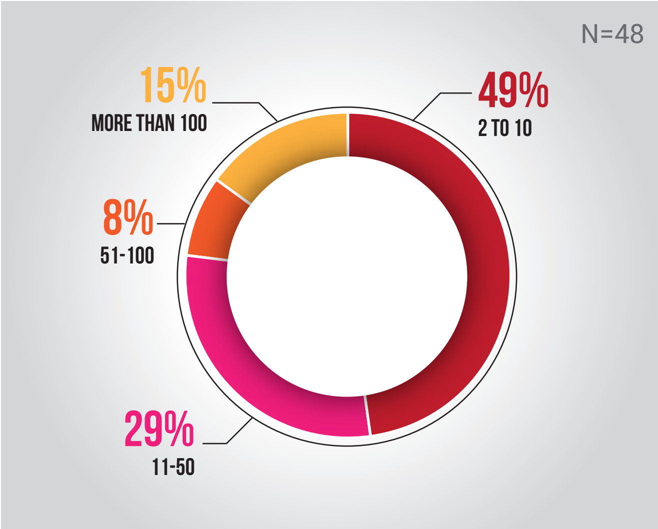
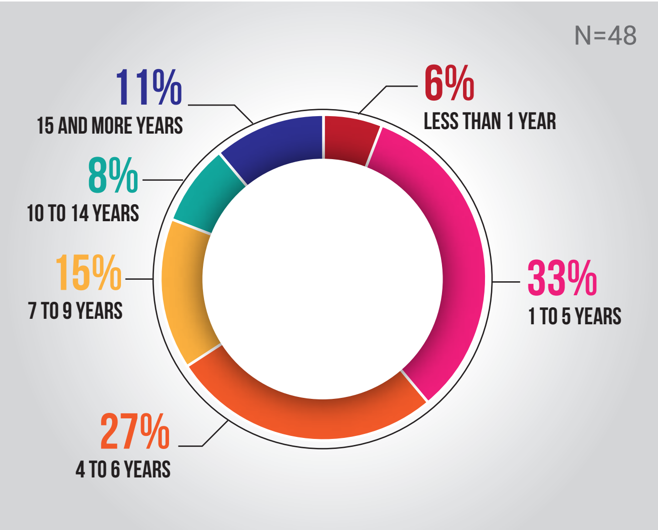


FIGURE 5 AGE OF COMPANIES



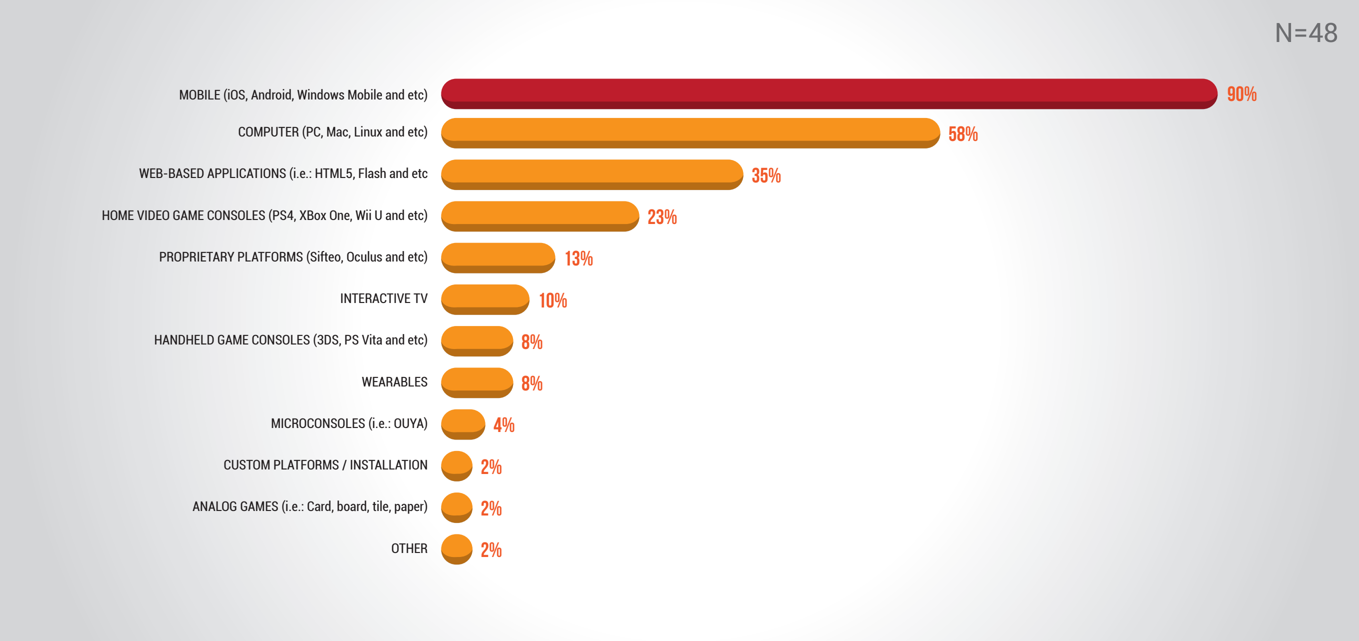
The number of young companies also means the majority of companies start their business after the expansion of mobile game market from 2010s. This inference is supported by the fact that nearly 90% of companies develop mobile games. Malaysia in particular noted the majority of respondents developing for mobile games or have products that support mobile platforms. The strength of the mobile as the platform of choice can be explained by its favorable market potential, low barrier to entry and comparatively low development cost. **(Figure 6)**.

In the companion IHL research in the following chapter, it was also discovered that the majority (90%) of IHLs regionally support the industry needs by having a range of game related studies focused on mobile platforms.

The age distribution of employees across the region is consistent. The 26 to 35 year old segment represents the majority of workers in the region and reflects a bridge between fresh employees and more experienced talent. This is crucial for South East Asia as it will contribute to the supply of experienced developers in the next five years.

INSIGHTS AND OBSERVATIONS - GAME INDUSTRY

FIGURE 6 GAMES PLATFORM



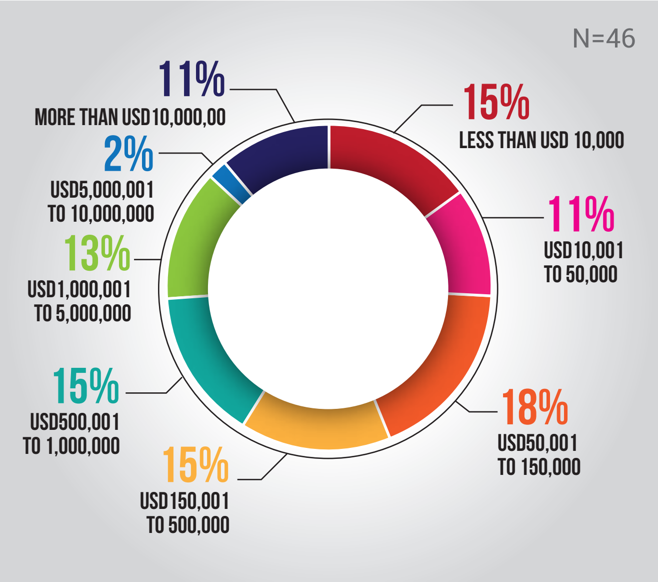
Compared to the size of game companies, average annual revenue of South East Asian game companies are very diverse. The largest segment (18%) are companies earning in the USD 50,000 to USD150,000 bracket. Note that 13% of the companies are earning in the highest brackets of USD 5,000,000 and above which shows that bigger companies are already beginning to take root in the region. **(Figure 7)**.

Several factors that might be contributing to this disparity of revenue:

1. Although fast growing, the game market in South East Asia is not a homogenous region. Different markets demand different products and distribution. Hence, the spread of revenue base will differ across the countries within the region.

Altitude Games, Philippines

FIGURE 7 AVERAGE ANNUAL REVIEW FOR PAST TWO YEARS



2. Diverse business models. South East Asia game developers are a mix of work-for-hire, original IP creators and publishers. The business models for all three are very different resulting in a spread of income. Results from the South East Asia Game Industry Initiative 2015 report also show the same findings.
3. For IP creators that are 2 years and younger, the revenue will be:
   a. at worst small/negligible because they cannot generate revenue until they develop their first game, or;
   b. at best highly unpredictable as they do not have the stability of sustained customer acquisition and long-term product development

Mediasoft, Malaysia

INSIGHTS AND OBSERVATIONS - GAME INDUSTRY

BUILDING SKILLS: INDUSTRY - IHL COOPERATION AND GOVERNMENT INTERVENTION

There is room for improvement when it comes to IHL and industry collaboration and cooperation in South East Asia. Regionally, game companies state that collaborations with IHLs are somewhat infrequent. Only 29% of the South East Asia game companies cite that there has been some form of past collaboration between company and IHL.

On a national perspective, Malaysia shows a comparatively higher number of enterprises that collaborate with IHLs (44%). Game developers from Indonesia and Philippines come in second (29%) while Vietnam and Singapore round out the countries in the list. **(Figure 8)**

Companies in Indonesia, Singapore and Thailand highlighted needs to improve syllabus review and IHL cooperation. Opportunities for internships and training for lecturers are also critical to facilitate the enhancement of IHL curricula.

Game companies throughout South East Asia have commonly identified certain areas where they would like to see IHLs improve **(Figure 9)**. The highest priority would be the training of lecturers with industry projects, in order for lecturers to understand the latest technologies and industry practices. Next was internship collaborations between the industry and IHL, closely followed by syllabus development with industry. On a country level, Malaysian game studios suggest that IHLs update their software and tech to better improve talent quality.

Throughout South East Asia, the majority of respondents requested assistance from the government with regards to talent acquisition. Only 5 out of 38 game companies cite that they do not need government intervention/assistance. Overwhelmingly however, training grants seems to be the unanimous most selected choice (66%). Incentives on hiring local graduates (58%) and tax rebates on staffing (47%) round out the top three citations on a regional level.

On a national level, Indonesian companies seek government aid for training grants, followed by incentive on hiring local graduates. This is similar for Malaysia, Philippines and Singapore. Notably, Thai and Vietnamese game studios are more interested in staff tax rebates rather than training grants, as measured by their citations. **(Figure 10)**

CHALLENGES IN RECRUITING TALENT

South East Asia game companies have a high tendency to hire from within the region. Around 80% of companies regard South East Asia as the main region of finding international talents. Interestingly, the number of companies seeking talents in Western countries is higher than Asia Pacific, Japan and Korea. This is likely due to the exposure that regional game developers are seeking, as well as perceived language and cultural similarities when it comes to game development. **(Figure 11)**

Since the primary region for hiring international talent is from South East Asia itself, it does exemplify a need for greater regional integration to facilitate the willingness of companies to hire intra-regionally. Game companies in Singapore seem more willing than any other country in South East Asia to hire globally. Vietnam was also a slight outlier, with a higher preference of European talent. Some evidence points to a high degree of French speakers in the workforce, giving rise to an influx of French game developers seeking expansion in Vietnam.

More than one third of game companies feel difficulty in hiring talents outside the country. On a regional level, the main challenge in hiring international talent by South East Asian game studios is the complexities and hurdles of immigration processing laws (53%). This is followed by quota requirements imposed on staffing for local and international talent (38%) and the immigration processing time (38%).

FIGURE 8 INTERACTION BETWEEN IHL AND GAME COMPANIES

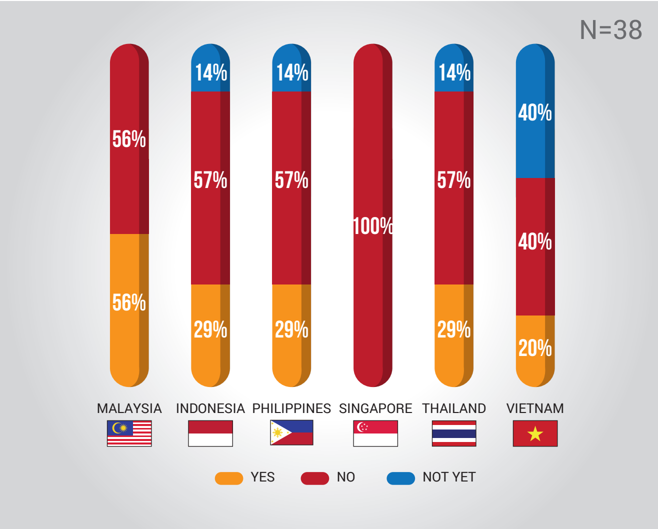


FIGURE 9 GAME INDUSTRY SUGGESTIONS FOR IHL

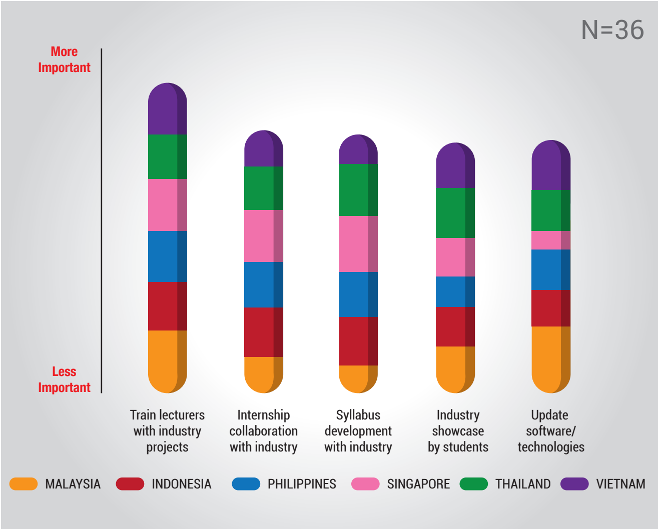


FIGURE 10 GOVERNMENT AID

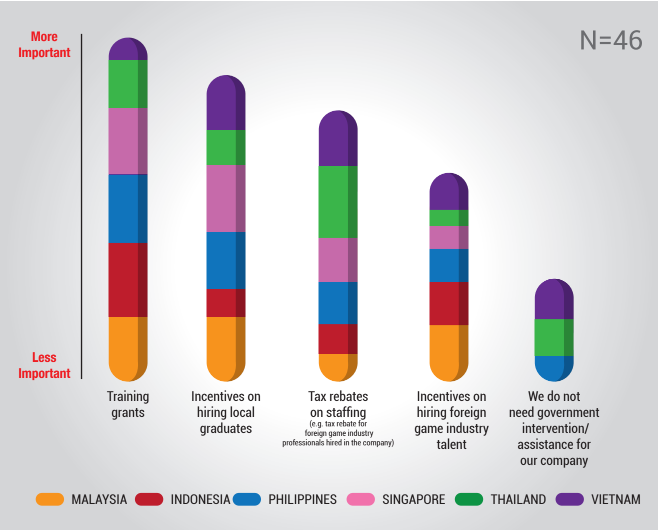
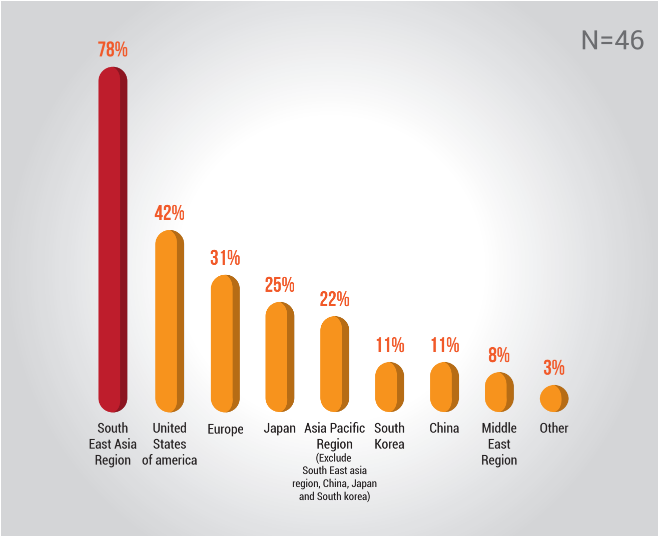


FIGURE 11 PREFERRED MARKET FOR INTERNATIONAL TALENT



INSIGHTS AND OBSERVATIONS - GAME INDUSTRY

Immigration processing law is a common challenge to hiring throughout all South East Asian countries, but most cited in Thailand. The quota requirement of local and foreign talent mix is also a big feature in Thailand (31%) followed by Malaysia (23%). Singaporean game companies cited only the quota issue (15%) as an obstacle. These legislative hurdles slow down the process of hiring and discourage industry from hiring international talent, reducing overall regional talent mobility. **(Figure 12)**

By far, the biggest challenge to South East Asian game companies in hiring industry talent is the insufficient number of job applicants with related experience and/or skill-sets (69%). Desirable talent that have been identified but eventually end up working in other countries is the next most cited challenge (33%).

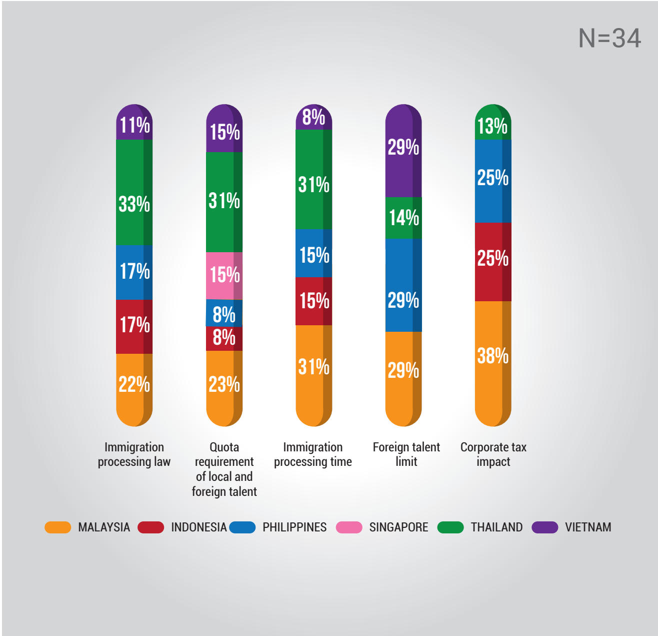
At a national level, the issue of insufficient job applicants with related experience is present in four of the six countries surveyed. There is an issue of graduates not choosing to work in the industry, prevalent in Singapore and Indonesia, likely due to other alternative opportunities. **(Figure 13)**

Over two-thirds (69%) of South East Asia game companies surveyed recognise that there are insufficient job applicants with related experience and skill-sets. As such, the majority of South East Asia game companies (87%) feel the need to improve new hires' technical skills (e.g. coding, art, design, etc) first, followed by training in business operations or workflow (64%).

The emphasis on technical skills as a priority is important in all South East Asian countries, but is most evident in Malaysia, Philippines and Thailand. Two notable differences **(Figure 14)**

- Vietnamese game companies cite that getting employees trained in the workflow is more crucial, most likely owing to large company size and more complex business operations
- Singaporean game studios prioritise training new hires with soft skills (e.g. communications, teamwork) probably due to the high entry-level technical expectations of new hires

FIGURE 12 CHALLENGES IN HIRING INTERNATIONAL TALENT - BY COUNTRY



Joy Entertainment, Vietnam

FIGURE 13 CHALLENGES IN RECRUITING TALENT

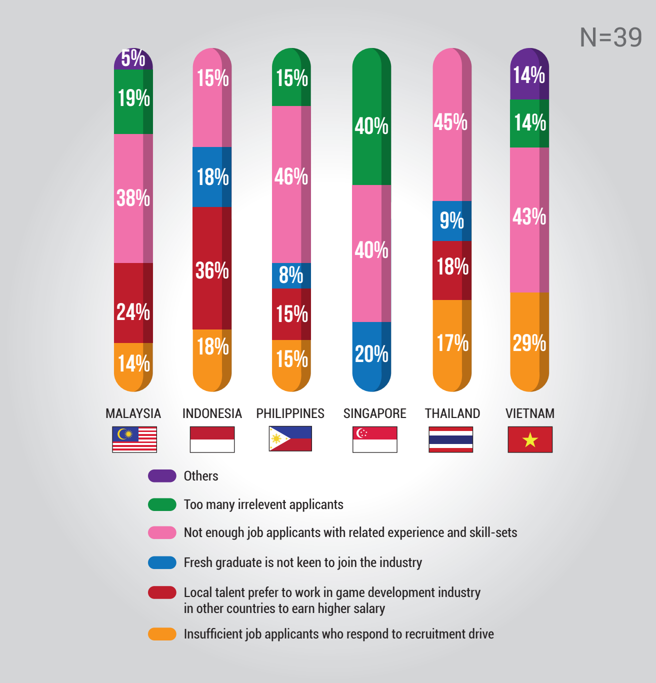
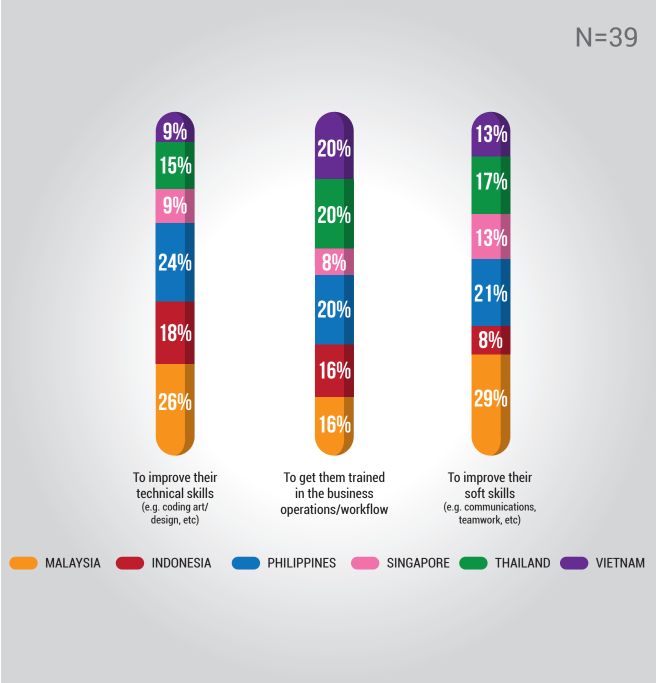


FIGURE 14 QUALITY OF NEW HIRES



Lambdamu, Singapore

INSIGHTS AND OBSERVATIONS - GAME INDUSTRY

FIGURE 15 DIFFICULTY IN HIRING GAME TALENT

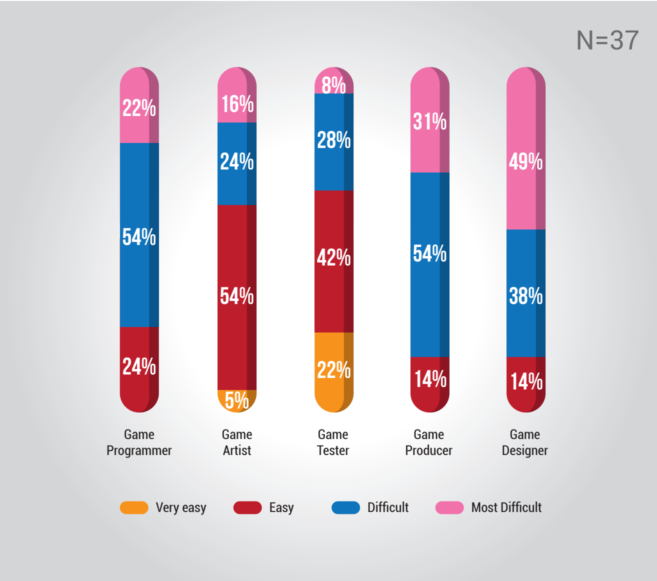
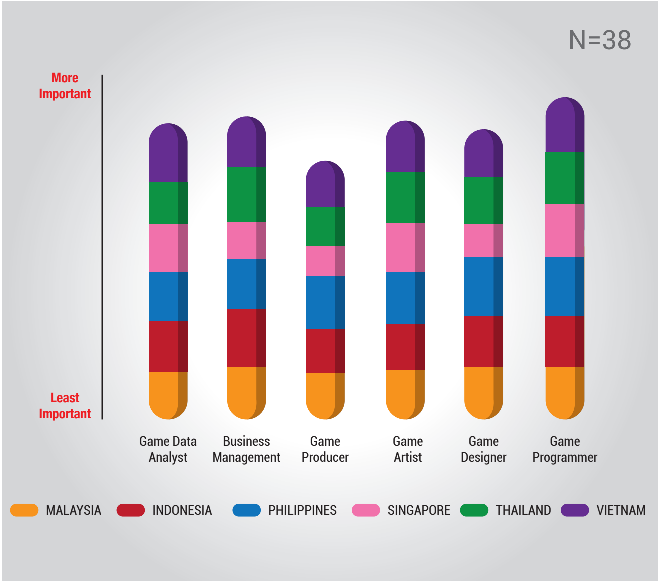


FIGURE 16 SHORT-TERM JOB DEMAND (2016-2018)



There is a scarcity for experienced game producers and designers in the South East Asia game industry ecosystem. Game designers are cited the most difficult to hire (49%), followed by game producers (31%). The easiest hire throughout the region are game testers followed by game artists. **(Figure 15)**

On a country level, Thailand (60%) and Malaysia (55%) find game designers as being the hardest jobs to hire. This is in line with observations that these two countries are undergoing a rapid change in the evolution of the IP being generated, with more sophisticated games being produced and the need for experienced designers at its most critical. Game producers were the next most cited, most notably from Indonesia where half (50%) of the citations noted this need. Game testers were all around the easiest talent to recruit in all six countries.

The short-term job demand for 2016-2018 highlights the importance of game programmers. What is notable is business management is seen as the second most desirable job for the next three years. This can be seen as a maturing of the regional game industry, whereby product development and business expansion become priority areas.

On a country level, game companies from the Philippines, Singapore and Vietnam cite programmers as most important. Notably, game data analysts have relatively high importance in Vietnam, Indonesia and the Philippines, which points to an increasing sophistication in game titles and complexity in the back-end operations and monetisation models. On the least important scale, Singaporean game companies cite game producers and business management as being less important. **(Figure 16)**

INTERNSHIP AS A TALENT BRIDGE FOR SKILLS AND RECRUITMENT

Average working experience of game professionals in the region is around 3-4 years except for game testers, which exemplifies the youthfulness of the region's game talent. In terms of qualifications, 37% of the South East Asia game industry talent have a bachelor degree. It would be interesting to note the growth of post-graduate talent, since the game industry is frequently pushing the boundaries of the latest technology. **(Figure 17)**

Companies also play an important role in developing skills, and training and internships are usually the method of choice. Nearly 80% of South East Asia game development companies have internship programmes. This is a relatively high number, since in the developed game industry markets, internship numbers amongst companies are quite low, with some estimates at 20% of game companies practicing internships industry-wide. **(Figure 18)**

FIGURE 17 MAXIMUM QUALIFICATION OF EMPLOYEES IN GAME COMPANIES

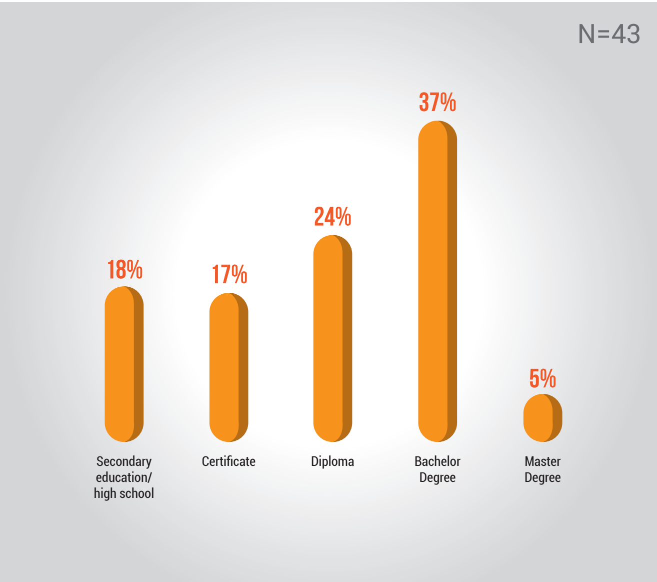
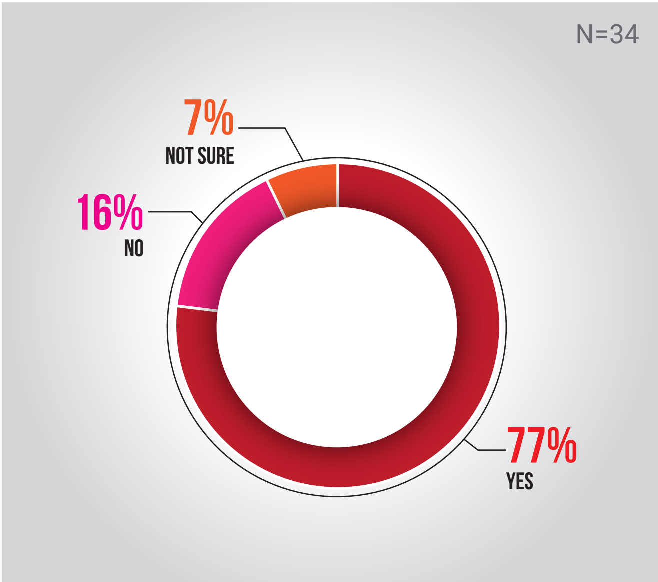
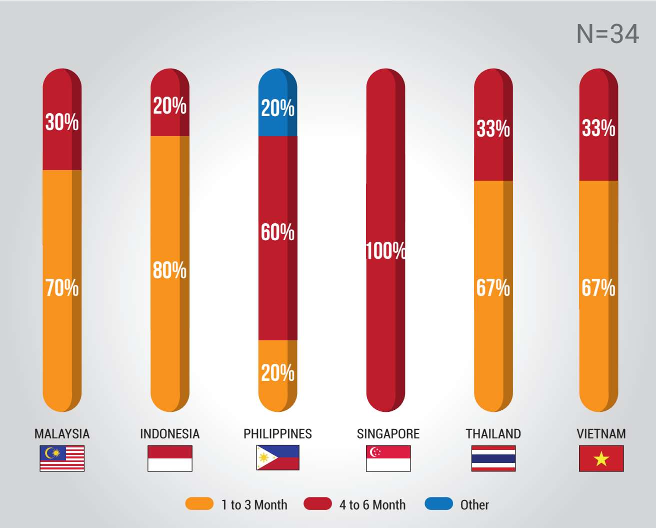


FIGURE 18 INTERNSHIP PROGRAMMES



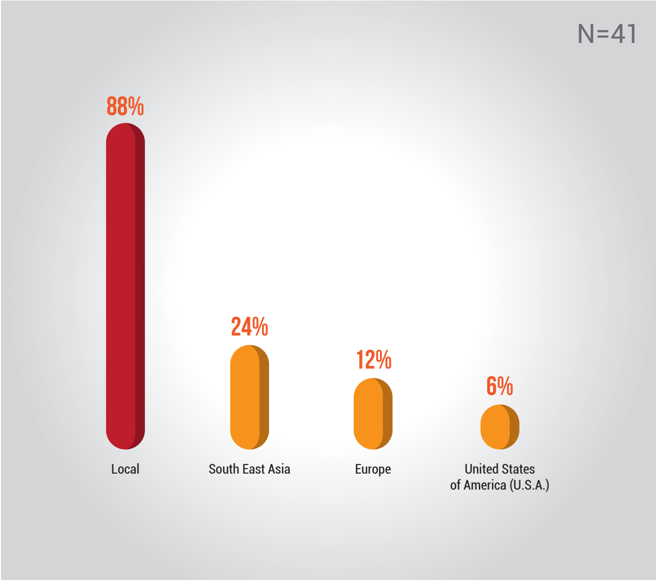
INSIGHTS AND OBSERVATIONS - GAME INDUSTRY

FIGURE 19 DURATION OF INTERNSHIP



On a regional basis, 59% of companies have practice short-term (3 month) internships

FIGURE 20 NATIONALITY OF INTERNS



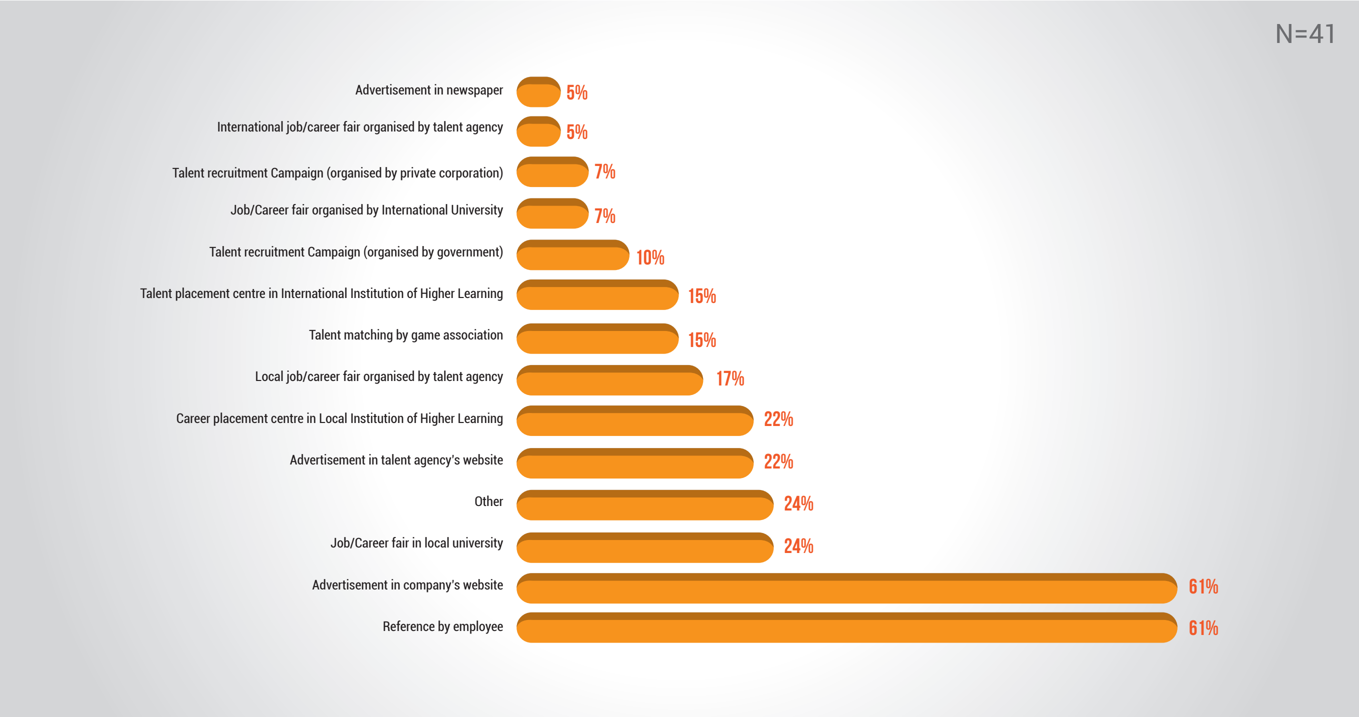
Kurechii, Malaysia

Most (88%) game industry interns are local. International interns are preferably sourced from within South East Asia region. This does point that while internships are considered a local phenomenon, there is a preference for South East Asian talent to work cross border and intra-regionally. Cultural similarities and expectations are likely factors. **(Figure 20)**

Talent recruitment via South East Asia game companies are usually conducted via three major channels. The most cited methods by which regional game industry attracts new hires: **(Figure 21)**

1. Reference by employee (61%)
2. Advertisement in company's website (61%)
3. Job/career fair in local university (24%)

FIGURE 21 SOURCE OF RECRUITMENT



The first two exemplifies the truly personal nature of the industry throughout South East Asia and the latter does show a measure of IHL and industry cooperation. Interestingly, Vietnam is slightly different and has professional career websites as a major recruitment platform. This indicates a more mobile talent market and the basis for rapid growth.

As a comparison, in the mature game industry of Japan, recruiting is usually done through the following:

1. 85% of game companies recruit by company's own home page
2. 70% recruit by recruiting company's website
3. 25% of game companies recruit by employee reference

In an advanced game industry like Japan, talent attraction relies largely on the company's brand name and pull-factor appeal. The benefits are obvious; the biggest and most appealing companies attract the best talent. This results in greater talent mobility and increased transparency on opportunities.

INSIGHTS AND OBSERVATIONS - INSTITUTE OF HIGHER LEARNING

MATCHING QUALITY TALENT WITH INDUSTRY DEMAND: A REGIONAL LOOK AT TALENT SUPPLY

The establishment of a variety of game development courses shows that IHLs are ramping up their focus towards the game industry.

A healthy supply of quality talent for the game industry should be seen as a means to:

a. Ensure consistent and sustainable long-term growth of the game industry

b. Entice foreign game companies which will consider supply of game talent before investing in a country

SITUATIONAL ANALYSIS OF INDUSTRY TALENT SUPPLY

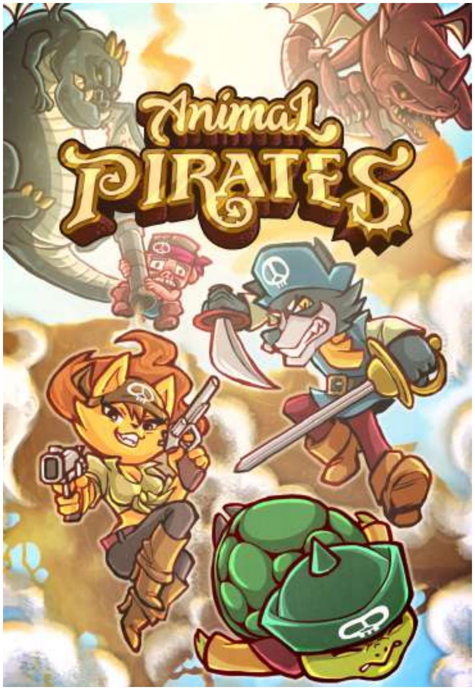
Two-thirds of IHLs have game development courses with less than 50 students, while only 7% had more than 100 students. This research is non-exhaustive, but an estimated ratio between the six countries profiled in this report (population: 640 million) and currently available game courses as cited in the survey is approximately one game development course per ten million capita.

By comparison, the Game Developers' Association of Australia lists 172 Game or Game-related courses, while Sweden lists 34 game programmes on offer. On a similar ratio, that would mean that Sweden would have a game programme per 282,000 persons while Australia would boast a game programme per 133,000 persons. This is a five to ten times difference between South East Asia and the established game industries.

The academic year in South East Asia is diverse, owing to differing education systems and practices. However, in terms of game education and course graduation, there is a notable peak in the months of June, July and August. This spread is likely due to games development courses having mixed intakes with some colleges practicing multiple intakes per year, while others, most notably public universities having a more systematic single intake systems. **(Figure 22)**

South East Asian IHLs hire faculty members from multiple sources to drive and teach the game courses. As expected, IHLs recruit lecturers from the industry (47%), but that is only the third most cited source. The primary source for game course faculty are actually other IHLs (71%) which indicates the high demand of academic lecturers in the game industry. Graduates from the same game development courses are the second most cited (53%) source of hires. **(Figure 23)**

Beyond the academic programmes, IHLs also provide platforms and extra-curricular activities to complement and provide real-world interactions with the industry. The most common offering are industry conferences, seminars and workshops (84%), followed by roadshows for product showcasing (44%). Game jams, which are considered industry accepted platforms to practice building products quickly under intense time pressure and a competitive environment are not so commonly practiced (36%). **(Figure 24)**



Nightspade, Indonesia

FIGURE 22 GRADUATION FROM A GAMES DEVELOPMENT COURSE THROUGHOUT THE YEAR

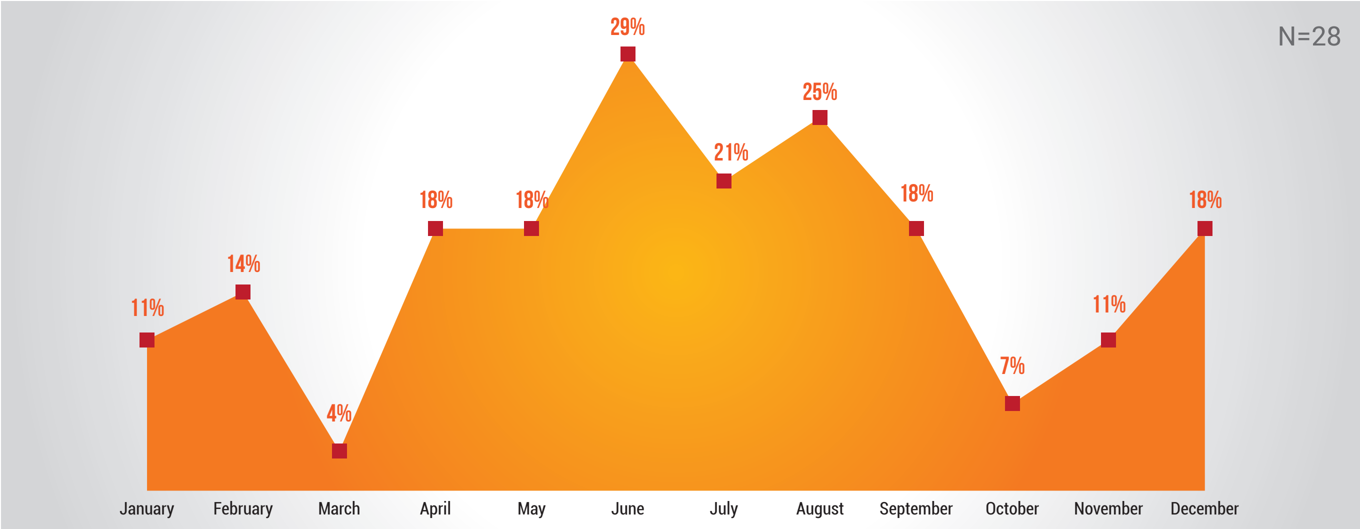


FIGURE 23 HIRING GAME TEACHING FACULTY

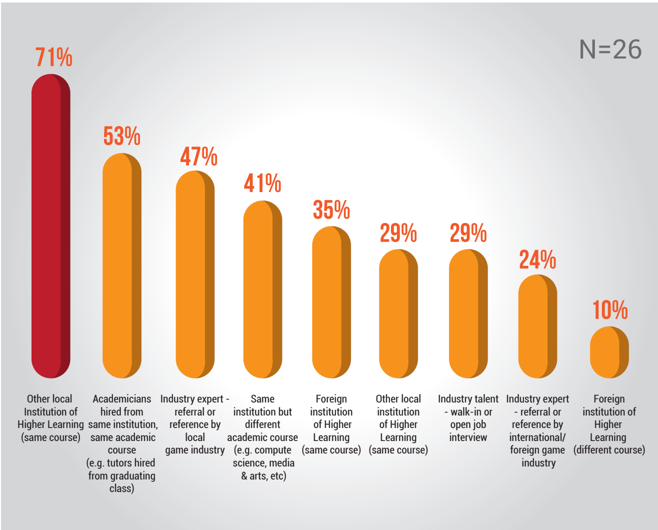
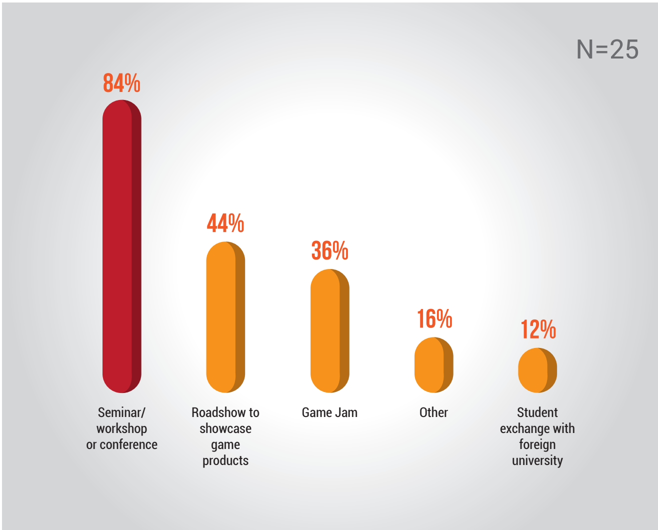


FIGURE 24 IHL EXTRA-CURRICULAR PROGRAMMES FOR STUDENTS



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CHALLENGES IN PROVIDING GAME DEVELOPMENT COURSES

South East Asian IHLs reach out to the game industry for a variety of reasons. On a regional level, the most cited reason is to engage professionals to provide industry lectures. However, the most utilitarian purpose behind industry engagement would be job fairs and career placement. The Philippines has one the region's strongest interactions between game industry and IHL. Some notable examples of this interaction include strong influence by Game Developer Association of Philippines (GDAP) to ensure that academicians are trained and knowledgeable in making a basic game. **(Figure 25)**

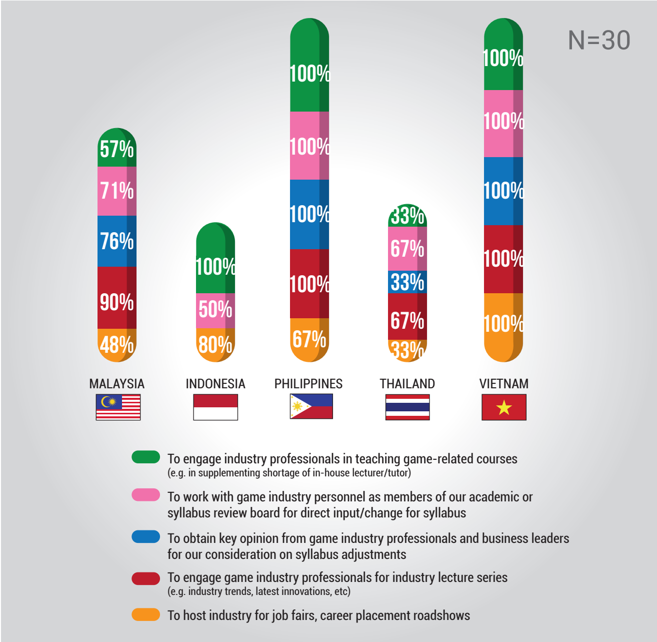
Industry expert level of involvement in syllabus review is comprehensive. The most cited interaction between IHL and industry is the sharing of the syllabus and curriculum, with some level of opinion sharing by the industry party. Regular meetings with industry (33%) and more involved roles, such as being a panel examiner (48%) are much less cited. **(Figure 26)**

Several notable examples of industry academia collaboration past and present:

1. University of Alberta and BioWare
2. Singapore-MIT GAMBIT Game Lab and Ubisoft
3. University of Southern California's Game Pipe Lab and Konami
4. Full Sail University's research relationship with Helios Interactive
5. Vancouver's Centre for Digital Media partnerships with Electronic Arts, Disney Interactive, Radical Entertainment, and Microsoft (highlighted as well in the 2015 SEA Game Industry Initiative Report)
6. DigiPen US and Nintendo America

Syllabus review in South East Asia IHLs are conducted somewhat regularly. Just under half review their syllabus between 1 to 3 years. Around 20% of IHLs review their syllabus every year or less, likely in an attempt to keep abreast with industry changes. However, there is concern for a quarter of IHLs that refresh their syllabus once every three years or more. This low frequency of revising course syllabus do not pose challenges just for emerging markets but also for developed game industries such as Northern Europe and Canada. **(Figure 27)**

FIGURE 25 AREAS OF INDUSTRY-ACADEMIA COLLABORATION



South East Asian IHLs appear to have a keen understanding of the need for subject matter experts in the game development programmes. IHLs are also aware and acting swiftly to address some of the gaps. Six out of every seven IHLs have academicians that have some measure of prior experience.

However, in cross analysis, IHLs state that only 15% of their teaching staff as having prior game industry experience, while 67% of the staff having related backgrounds (e.g. animation, arts & design, IT programming). IHLs are looking into this and there is a concerted effort to up-skill and train the teaching staff (77%). **(Figure 28)**

FIGURE 26 INDUSTRY INVOLVEMENT IN SYLLABUS REVIEW

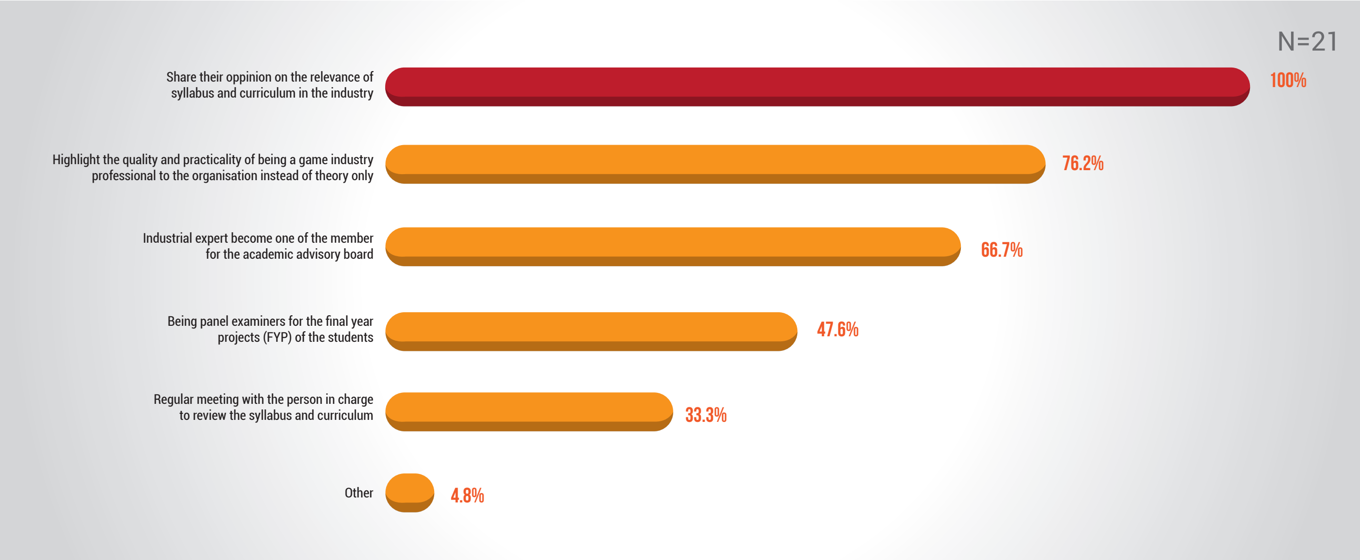


FIGURE 27 FREQUENCY OF SYLLABUS REVIEW

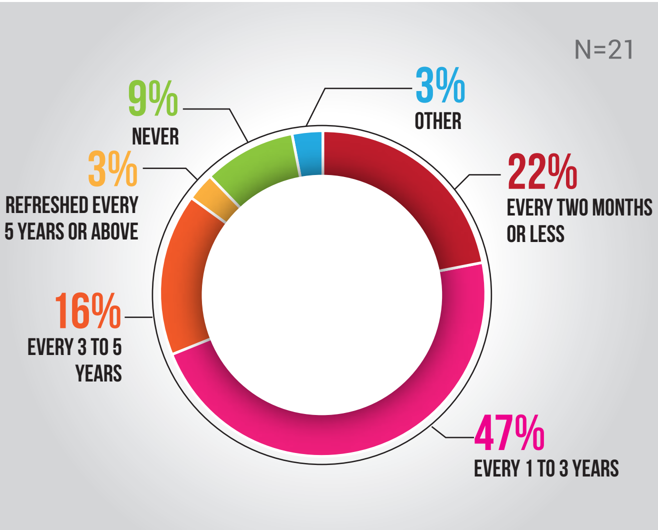
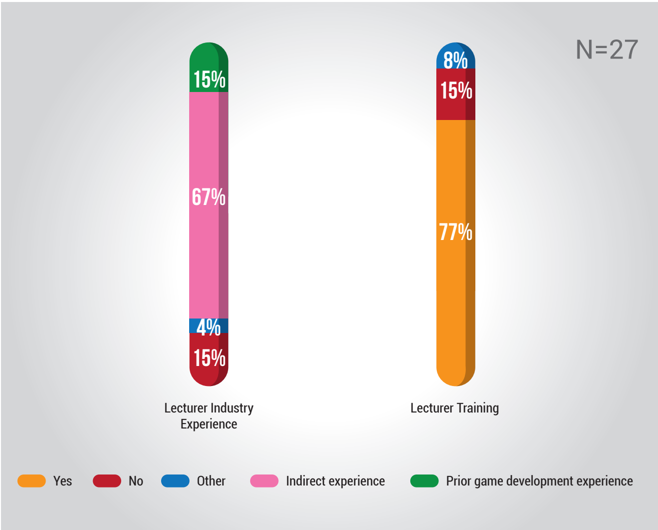


FIGURE 28 IHLS UP-SKILLING TEACHING STAFF



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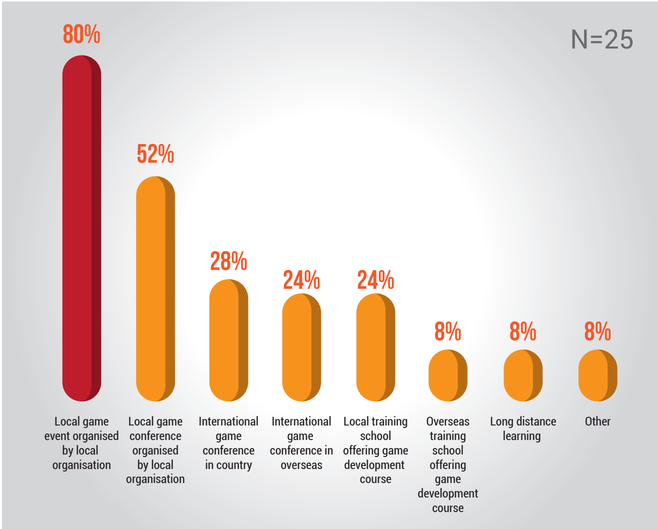
Training and providing exposure to the teaching staff is a largely domestic affair. South East Asia IHLs look to local game events and local game conferences as the two main areas by which their academicians can be exposed to the latest technologies and trends. The number of lecturers who attend international conference is limited (24%), and just 8% use long distance learning. There is potential for increasing the use of distance learning programmes to upgrade the lecturers, since industry players themselves employ these programmes. **(Figure 29)**

IHLs that teach game development programmes cite the biggest challenge in continued operations is the teaching staff: 80% of IHLs have difficulty hiring subject matter experts as lecturers. This challenge is a global one owing to the fact that professionals in the game industry are both highly sought and are themselves not inclined to work in IHLs as lecturers. 65% of South East Asia IHLs cite that the local game industry professionals cannot commit their time to teach consistently, and more than half of them regards restriction in hiring policy of IHLs as problem. **(Figure 30)**

Not far behind is the challenge of limited budgets for the programme, especially insufficient CAPEX (68%). This hampers the tech updates that are critical to keep the syllabus relevant and lecturers getting routinely trained and up to date. **(Figure 31)**

FIGURE 29 COMMON TRAINING PLATFORMS FOR GAME COURSE TEACHING STAFF



Agate Games, Indonesia

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FIGURE 30 CHALLENGES IN ENGAGING INDUSTRY EXPERTS

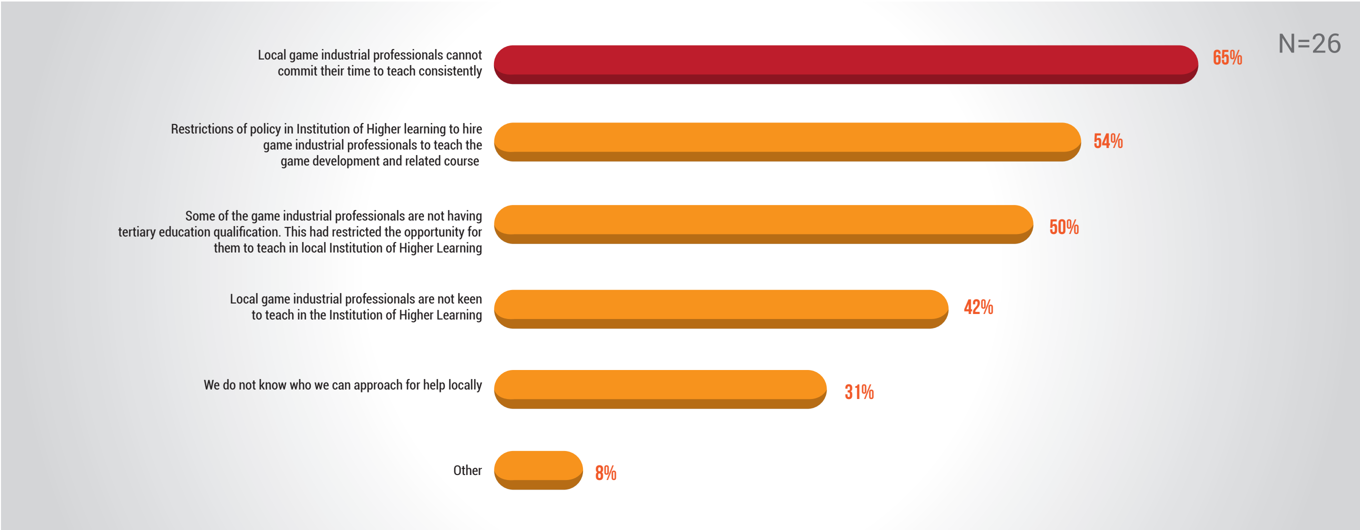
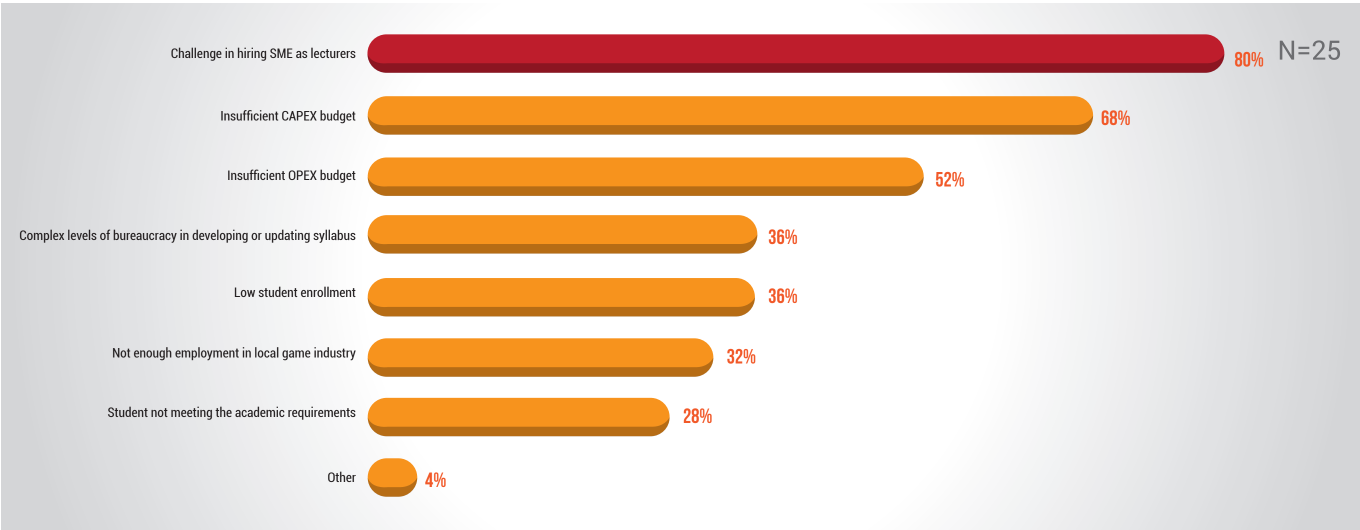


FIGURE 31 CHALLENGES IN OFFERING GAME DEVELOPMENT COURSES



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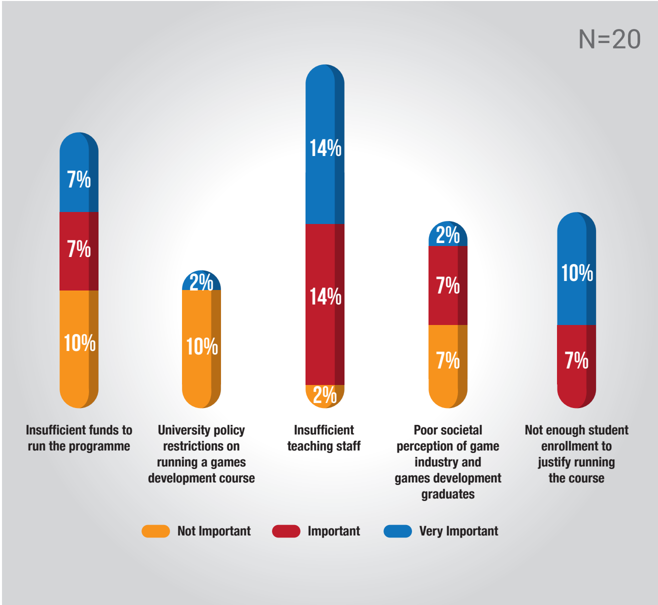
Mediasoft, Malaysia

FIGURE 32 CHALLENGES IN BUILDING UP A GAME DEVELOPEMENT COURSE



This study also looked at IHLs that do not offer game programmes to understand any wider challenges that IHLs may face. The most cited reason for challenges in setting up a game development course is expertise and talent: insufficient teaching staff (14%). Insufficient funds are the next most important, possibly indicating budget limitations in setting up a games development course or a “wait-and-see” perspective from the overall IHL management who might not have enough awareness of the game industry potential. **(Figure 32)**

GAME PROGRAMME STUDENT ANALYSIS

In offering game courses to potential students, enrolment channels by IHLs with these programmes are largely centred around three main platforms as stated below **(Figure 33)**

1. Local education fairs or exhibitions (77%)
2. Advertisements in websites (60%)
3. Roadshows in other regions (50%)

Student internships throughout South East Asia is predominantly split down the middle between IHL facilitated assistance through collaboration with industry (82%) and students seeking out internships by themselves on a personal basis (82%). On a national level, Philippines shows strong IHL and industry relations with internships being assisted by the university itself, reducing the burden on students. Indonesia and Thailand follow the regional average, while Malaysia has more weight placed on the student to seek out internships. **(Figure 34)**

FIGURE 33 STUDENT RECRUITMENT METHODS

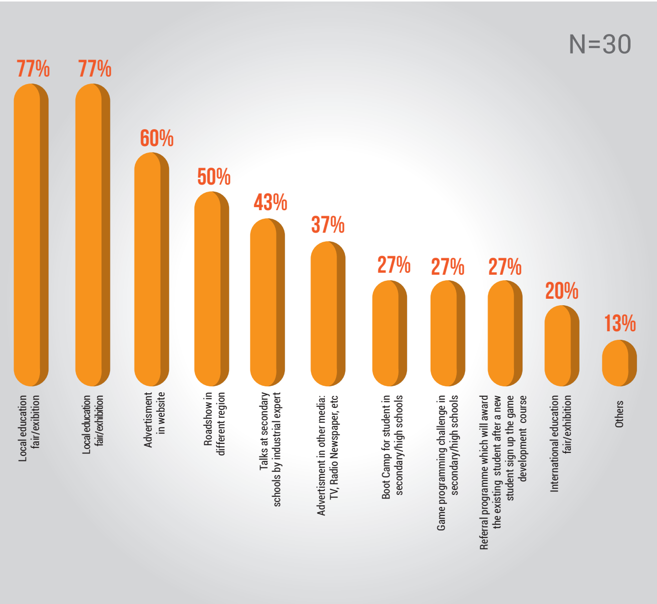
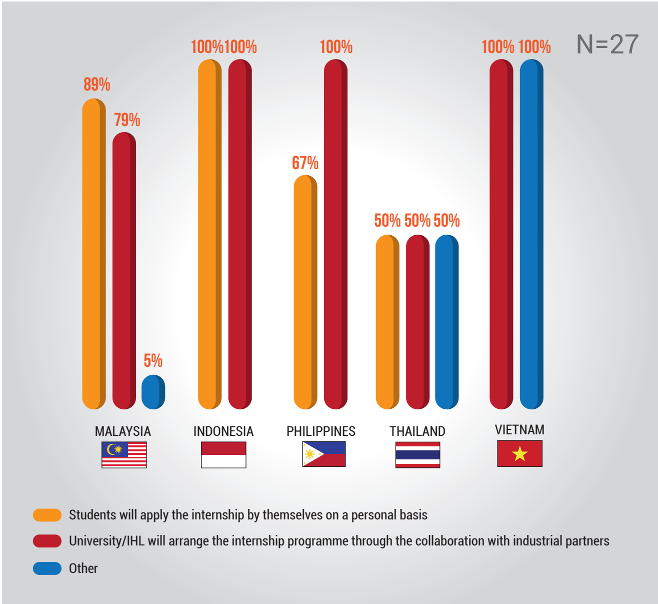


FIGURE 34 STUDENT INTERNSHIP PLACEMENT



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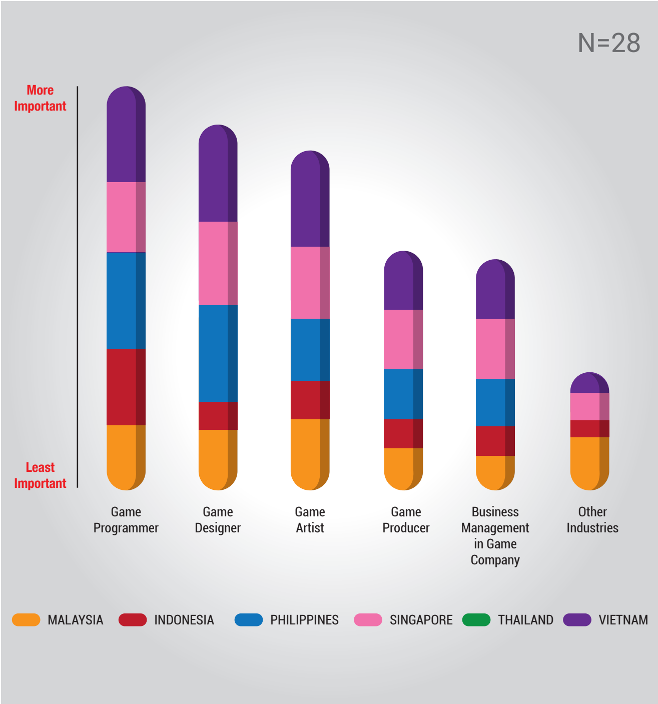
IHLs continuously observe the industry demand on their students for planning and budgeting, crucial on cross-disciplinary courses such as game development. On a regional level, this paints a demand picture from the IHL perspective. Research reveals two main job types as the “hot jobs”. Game programmers and game designers are in demand on a regional and national level. Malaysian and Thai IHLs consistently rank these as the top demand. It does not appear that business management is fully in demand, at least from the IHL perspective. **(Figure 35)**

Tracking students from IHLs that provide game development courses, it becomes apparent that there are some leakages in the talent ecosystem, with graduates not entering the relevant industry. 32% of IHLs cite that less than 20% of game development graduates actually enter the local game industry. Only a fifth of IHLs cite that the majority of game developer course graduates actually enter the game industry. **(Figure 36)**

Analysis of game development graduates point to working locally as being the overwhelming choice for graduates of game courses. 47% of IHLs state that a fifth of the graduating class will work in the local games industry, while a further 21% of IHLs cite that more than 61% of the graduating class will work locally. There is some measure of regional play, since 60% of IHLs do state that a fifth of the graduating class will find work in a neighbouring South East Asian game studio. **(Figure 37)**

Platforms currently used by students to develop games in IHLs are strikingly similar in terms of popularity as their industry counterpart. The computer PC platform, mobile and web-based applications are the highest cited platforms. This does point to a measure of familiarity by students, as potential game industry talent, to the platforms that they will use in the industry. **(Figure 38)**

FIGURE 35 HOT JOBS FOR GRADUATES



Gamevil, South East Asia

FIGURE 36 GRADUATES JOINING THE GAME INDUSTRY

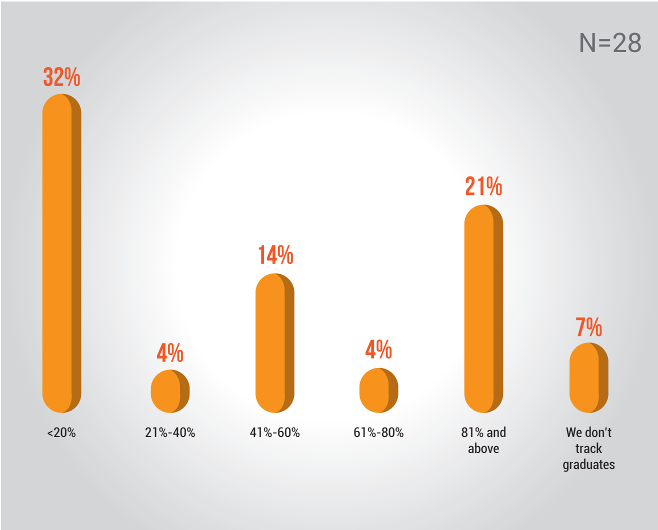


FIGURE 37 GAME COURSE GRADUATES WORKING LOCATION

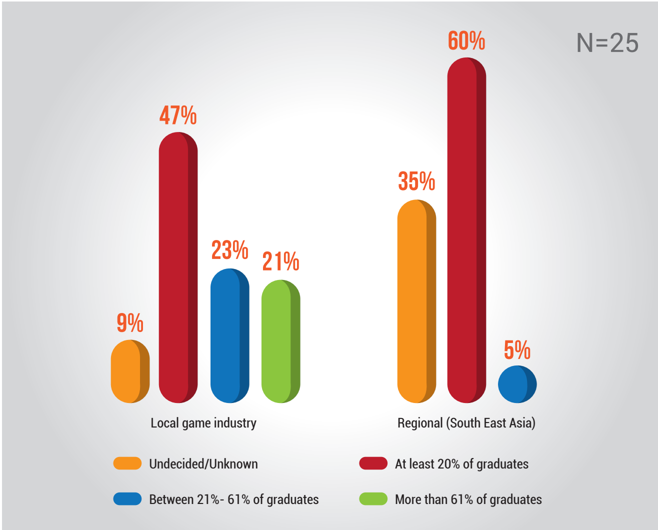
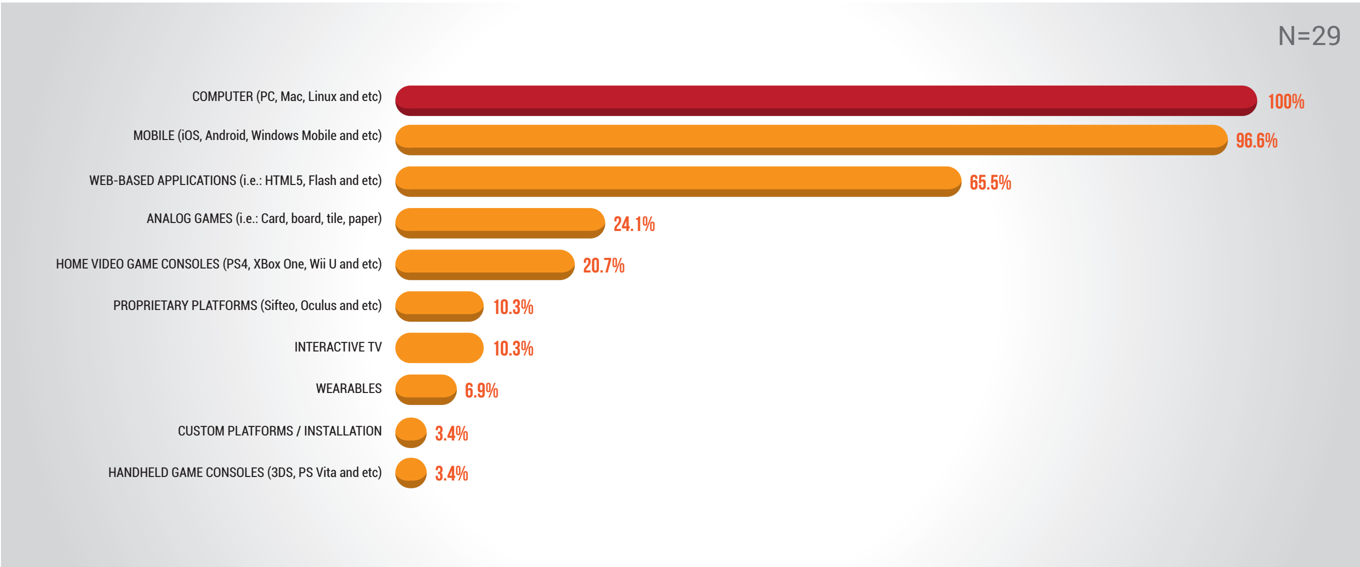


FIGURE 38 PLATFORMS USED BY STUDENTS TO DEVELOP GAMES



INSIGHTS AND OBSERVATIONS

REGIONAL SUPPLY AND DEMAND ANALYSIS

Based on the survey results, subsequent analysis, external references and general observation of the game climate in the region, key strengths, weaknesses, opportunities and threats, pertaining to the South East Asia game industry, are listed below:

<table>
<tr><th colspan="2">Malaysia</th></tr>
<tr><th>Strengths</th><th>Opportunities</th></tr>
<tr><td>• Abundance of game artists
• Flexibility of starting and ending period of game courses facilitate applicants to enter
• Strong public sector drive by government agencies such as MDEC to focus efforts on talent development & addressing talent-supply issues for the game industry
• Strong government support for game industry including platforms such as Level Up KL
• Gamefounders Asia based in Malaysia as the game industry accelerator helps internationalise and elevate skills</td><td>• Investment from both Eastern and Western game companies widens the pool of available jobs
• Increase in holding international game-related events can create opportunities for related events for industry and IHLs to meet, enable cooperation and collaboration
• Wide availability of talent in technology and IT; as yet unaware of the career opportunities in the game industry.</td></tr>
<tr><th>Weaknesses</th><th>Threats</th></tr>
<tr><td>• IHLs struggle to connect with game industry experts, most notably in two major areas: curriculum review and lack of involvement from industry expert to teach in game courses
• Shortage of game producers and designers
• Currently, game companies are actively involved in getting students to join as interns but not converting to full-time work
• Small size of intake for game courses</td><td>• Work-for-hire jobfocus is keeping local developers from creating own IP and limiting the IP exploitation potential
• The awareness in making game as a career is generally low in Malaysian society. IHL find it a challenge to recruit more talent as socio-cultural attitude to a career in the game industry is still negatively biased</td></tr>
</table>

Indonesia	
Strengths	**Opportunities**
• Active, cooperative game development associations that engage the industry community, e.g. the Indonesian Game Industry Association (AGI) launching the Indonesian Game Day • Game companies seek interns from IHLs as part of the hiring strategy for studios to expand, with high rates of hiring amongst the top talent • Large number of game startups producing entrepreneurial experience and product development knowledge	• Western investors are interested in huge domestic market potential • The largest internet population in SEA can be test-bed of new business models of game-related industry • Government's interest in using gamification to solve social issues like "Translator Gator" and "Sekolah Desa" • Local game market is expanding rapidly, in line with the rise of the middle class income group
Weaknesses	**Threats**
• Need for teaching staff in game development courses with industry or game-making experience • Low industrial involvement of graduates from game courses • Rapid syllabus change for game development courses is difficult under current IHL policies and processes • Lack of interaction between game companies and local IHL where students might be missing out on the latest updates and practices from the game industry	• Some local talent are not interested to work in the game industry, seeking work in alternative sectors (e.g. engineering, banking and finance, etc) • Perception of a career in the game industry is generally low • The Creative Economy Agency has not yet included game industry into their coverage area, thus still a lack of government support for this sector

INSIGHTS AND OBSERVATIONS

Philippines	
Strengths	**Opportunities**
• Experienced in outsourcing contracts from Western game companies • IHLs connect with local game talents actively through industry associations for industry-academia activities (e.g. GDAP has a voice in setting IHL curriculum) • Academicians teaching game development courses are required to publish a game every year to ensure they are able to stay in the practice of game and product development	• Variety of scholarships and financial aids for students not just by IHLs, but also supporting ecosystem players such as government and industry associations • GDAP able to influence government to support their efforts to bring local games to the international stage, e.g. setting-up booths in international game events with common national branding
Weaknesses	**Threats**
• Imbalance of game talent in local industry with strong pool of talented game artists but with a shortage of programmers, designers • Local game market is growing big but having problems in monetisation due to payment issues, such as usage of credit cards and lack of platforms in making money locally.	• Perception of making game as a career is relatively less attractive than having a career in animation industry. • Lack of infrastructure related to game industry makes doing business a challenge (high electricity tariffs, network issues, traffic jam due to overconcentration of business in Metro Manila)

Singapore	
Strengths	**Opportunities**
• Presence of established teaching institutions such as MIT Game Lab, DigiPen host world-class talent training & curriculum • Game Solutions Centre (GSC) provide a good startup area for indie game studios to realise their game commercialisation mentorship, market access, and tech such as the Sony Dev Kit – currently the only official Sony Dev Kit provider in the South East Asia region • IHLs are allowed to change syllabus on a yearly basis or as and when the game industry needs it to be changed	• Strong government operations in getting the anchor game companies to set up office in the country • Holding various IT tech and game industry events, which facilitate networking with international companies (e.g. Casual Connect) • IHLs have made partnerships with some global game companies
Weaknesses	**Threats**
• Some regulations e.g. foreign employee quotas slow down hiring international talents, particularly for local developers • Challenging for game startups to survive owing to high cost of business without external assistance. Limitations of financial assistance hurt as well (e.g. GSC only assists 1 IP per company)	• Brain drain: small but steady amount of skilled talent leave Singapore to work in Western countries • Local Singapore youth are not seeing game industry as a good industry to work for due to low success rates in this high risk industry • Perception of making game as a living is generally low in the country and the parents are keen to send their children to study and work in an industry with higher pay

INSIGHTS AND OBSERVATIONS

<table>
<tr><th colspan="2">Thailand</th></tr>
<tr><th>Strengths</th><th>Opportunities</th></tr>
<tr><td>
• Game communities within local industry is strong, e.g. cooperation between TGA and Thai Game Developers Corner
• IHL game courses that support a wide range of game platforms including PC, mobile and console
• Active game industry associations in Thailand that routinely engage with IHL, e.g. cooperation between TGA with a local IHL led to the establishment of Digipen, Bangkok Campus in 2015
</td><td>
• Presence of regional game publishers based in Thailand
• Investment from East Asia (Korea and Japan) has strong potential to seed the local industry
• Local IHLs are allowed to engage foreign IHLs in their academic/curriculum setting.
</td></tr>
<tr><th>Weaknesses</th><th>Threats</th></tr>
<tr><td>
• Inter-regional talent exchange is minimal, owing to language barrier and cultural preference for locals
• Lack of government support toward game courses
• Most game development courses conducted in Thai language except Digipen, Bangkok Campus (Thammasat University) minimising international student intake and working on global game titles (which are mostly in English)
• Foreign ownership limitations is a hindrance towards industry growth
</td><td>
• Local game graduates are mainly trained to meet the needs of local game industry due to language, familiarity of Thai culture, impacting talent mobility
• It is a must to have a local partner in any game company setup. This rule is applicable to large game studios, potentially curbing foreign investment or set-up of an international game studio in Thailand
• While industry-IHL relationship is good, game industry feels improvement to be made for more periodic syllabus review
</td></tr>
</table>

Vietnam	
Strengths	**Opportunities**
• There is a strong population of game programmers sourced from both game development courses and other IT programmes • Experience of working in larger development teams with large multi-national studios providing industry best practice • The game industry provides a source of high income jobs in Vietnam, and there is an overall extremely positive view of a career within the game industry	• Very good relations with Western and Japanese game companies • Large number of French speakers allow talent to work in French game studios, e.g. Gameloft etc.
Weaknesses	**Threats**
• Lack of experienced game artists to complement the strengths in programming • Talent mobility for international interns and talents are still low, owing to a challenge of cultural fit • Lack of interaction between IHL and game industry with game companies finding it difficult for IHLs to produce talent to meet their requirements	• Government support of the game industry is minimal, e.g. government tax relief for software development does not cover game sector • Special license needs to be obtained if companies want to publish a game in Vietnam. Applies to both local and foreign companies based in the country • Strong preference for local hires for language and cultural fit may hamper industry growth

INSIGHTS AND OBSERVATIONS

<table>
<tr><th colspan="2">South East Asia</th></tr>
<tr><th>Strengths</th><th>Opportunities</th></tr>
<tr><td>

- Sound ecosystem of game development: both small and big companies coexist
- Strong, unified interest in enhancing regional relationships between industry and IHL players
- ASEAN policy of waiving visa requirements ease talent mobility
- Familiarity of culture among each country make it easy for the game talent movement in SEA region.
- SEA market is the major market for most of the game companies in this region, thus the need to localise content further, e.g. creating more local game content, hiring local game developer talent who are familiar with local culture

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- Investors from both the eastern and western gaming hemispheres are interested in the region
- Game market is expanding rapidly, which will reinforce the entire ecosystem of regional game business
- Continued entrance of bigger game studios could provide catyltic effects, including spinning off smaller game studios as supporting players
- Growing awareness of game development courses amongst IHLs could lead to more game talent, and supporting business expansion of game industry in SEA region

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<tr><th>Weaknesses</th><th>Threats</th></tr>
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- Difficulty in finding experienced game academicians, making it a challenge to ensure graduates know the latest game development technology and skills
- Lack of exchange programmes for students and lecturers
- Involvement of game developers into game education is limited
- Slow in making change/review the syllabus of game development course create a gap for the graduates to join the game industry
- Lack of pathways and platforms for the passionate and enthusiastic game developer to partner with IHLs

</td><td>

- Finding industry-experienced lecturers for IHLs will continue to be challenging due to the abundance of growing companies. It is difficult for game developers to do other work, e.g. tutoring and teaching
- Lack of government support to grow the game industry
- Lack of interaction between game companies and IHLs is common. IHLs also not consistently meeting up with regional counterparts over game courses, best practices, etc
- Lack of state-of-the-art facilities in IHLs: most of the IHLs provide the students with mobile and PC exposure owing to the lack of infrastructure

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BENCHMARKING 06

FEATURE: BENCHMARKING THE NORDIC GAME INDUSTRY

The Nordic game industry region consists of the nations of Sweden, Finland, Norway, Denmark and Iceland. Together they operate at the centre of a single trade block under the ambit of the European Union and the Nordic Council.

The game industry itself is composed of various organisations that represent distributors, developers, industry lobbyist groups and the community. Loosely representing the region is the Association of Nordic Game Industry, (ANGI), itself an umbrella group of associations from the four biggest member nations.

1. Sweden - MDTS
2. Finland - FIGMA
3. Denmark - MUF
4. Norway - NSM

Total market size is over EU500 million/year (game sales) and it is the sixth biggest game market in the world. From a production standpoint, the Nordic region has over 200 companies with total revenues of EU300 million/year (turnover).

This benchmarking exercise consisted of meetings with various organisations that represented various capacities in the game industry value-chain with a particular emphasis on the supply and demand of industry talent. The parties included the following:

- AAA and Independent Studios
- Game Industry Associations
- Game incubators and accelerators
- Institutions of Higher Learning
- Investment Agencies

The interactions with the parties above sought to uncover the key insights behind the regional success, identify common factors and providing sources of information for further research. Often, the factors were common and cited by various parties, further cementing their unique and particular importance. This paper has summarised the key findings as follows:

- Depth and diversity of the talent pool
- Education systems to support building skills and industry
- Ecosystem support and talent mobility
- Game industry community and industry representation

Agate Games, Indonesia

THE FOLLOWING SUBSECTIONS PROVIDES A DISCUSSION OF EACH OF THE KEY FINDINGS FROM THE BENCHMARKING EXERCISE

DEPTH AND DIVERSITY OF THE TALENT POOL

Two decades ago, beyond a vibrant independent developer environment and a scattered series of hits by established developers and publishers, the Nordic region was not seen as a major player on the scale of other global game nations such as the United States and Great Britain.

Positive impact of economic reforms of the 1990s and early 2000s led to a consolidation of talent, forming the foundation of a nascent global game industry. This was true for Sweden and Finland in particular, but has parallels for the other Nordic countries. A highly-skilled, knowledge rich talent pool is essential for industry growth.

Sweden has a strong engineering talent base, with generations of engineers and mathematicians serving their strong automotive, aerospace and marine sectors (e.g. Volvo and SAAB). Further, the advancement of world-class technologies, telecoms and consumer electronics industry (e.g. Ericsson, Electrolux, Spotify, Skype) had built the technical skills by which the current game industry is built upon.

The Swedish AAA game industry heritage is built on availability of talent in the workforce that already had the background on coding, networking and physics. All this translates well to developing game engines, network/online gameplay technologies, game physics etc. and built upon decades of engineering know-how and expertise.

Finland is a similar beneficiary of an industry legacy. The dominance of mobile technology and the Nokia company has through very direct means led to a formation of a game industry ecosystem in Finland. From the earliest days of their dominance, Nokia was keen to nurture an ecosystem of developers to provide content for their platforms in order to build a vibrant mobile platform. Starting with Snake in 1997, the birth of mobile gaming was built on Nordic engineering.

Nightspade, Indonesia

EDUCATION SYSTEMS TO SUPPORT BUILDING SKILLS AND THE INDUSTRY

The education system in the Nordics are world renowned as being highly progressive and ranks in most metrics as global leaders. There is evidence that the success of the system in place is not about the sophistication of the syllabus (e.g. technology in schools, coding at the elementary level) but rather a focus on the basic life-skills (e.g. teamwork, organisation, language expertise).

The chosen example of Finland is also applicable to other Nordic countries that have equally impressive records for education both at the K-12 as well as tertiary levels. For example, 93% of Finns graduate from academic or vocational high schools, (18% higher than the United States), and 66% go on to higher education, the highest rate in the European Union. Yet Finland spends about 30 percent less per student than the United States.

It is beyond the scope of this study to go through the in-depth look at the Nordic education system, but where it pertains to the gaming industry, several highlights deserve mention.

- **Equality in education**
  The principle aim of the system is to balance education to be as high quality wherever the student may be in the country (from urban Helsinki to rural Lapland).

- **Practical innovation culture**
  Amongst school teachers, the culture is to have innovation and impact on the syllabus originate from the classroom, rather than top-down. High emphasis on vocational skills encourage a hands-on approach to problem solving and there is little competitive tracking (e.g. tracking PISA ranks, peer rankings) or standardised tests.

- **Workforce ready**
  Vocational skills has been updated to include key game and tech industry syllabus, bridging the gap between industry needs and talent that are skilled but may not be academically inclined. The routine update of syllabus is progressive with industry representation on academic boards.

Terato Tech, Malaysia

> "THE CHOSEN EXAMPLE OF FINLAND IS ALSO APPLICABLE TO OTHER NORDIC COUNTRIES THAT HAVE EQUALLY IMPRESSIVE RECORDS FOR EDUCATION BOTH AT THE K-12 AS WELL AS TERTIARY LEVELS. FOR EXAMPLE, 93% OF FINNS GRADUATE FROM ACADEMIC OR VOCATIONAL HIGH SCHOOLS, (18% HIGHER THAN THE UNITED STATES), AND 66% GO ON TO HIGHER EDUCATION, THE HIGHEST RATE IN THE EUROPEAN UNION."

ECOSYSTEM SUPPORT AND TALENT MOBILITY

The reality of the game industry being one that is hit-driven is that failure is a very frequent experience. Angry Birds was not Rovio's first hit, but it was the biggest hit and more notably the 52nd IP created. The transition of efficient, effective talent distribution from education to commercial pursuits is similarly challenging owing to the fluid nature of IP creation.

The Nordic ecosystem support plays a large role in working out the difference between the talent supply and talent demand through a few means.

An emphasis on building talent development through incubation is a key example. The Nordic region is famed for its strong tech startup scene (e.g. Skype, Spotify and numerous FinTech enterprises) but in Sweden, Finland and Denmark in particular, this incubation extends to game industry specific setups. This incubation period is a necessary device to build blocks of experience and honing skills learned from school.

Talent mobility is another consequence of progressive skill-set development, and a unique by-product of supra-national cooperation. With regional strengths as outlined in part 6.a above, the distribution of talent skilled in the various aspects of game development, e.g. network and server-side engineering, product design, game art, animation, game engine development, etc are spread across the Nordic nations.

Since industry has a large part to play in the formation and evolution of game industry syllabus, game industry skills from the Nordic countries are seen as "common". Further, a high degree of fluency in English as a result of a well-run public education system encourages intra-regional talent mobility, with little barrier to communication. Finally, EU laws for freedom of labour movement play an important aspect in facilitating skill transfer within the Union.

The upshoot to this phenomenon is that labour markets are more efficient, transparent and free-flowing, when the correct ecosystems are in place.

Ranida Games, Philippines

"THE UPSHOOT TO THIS PHENOMENON IS THAT LABOUR MARKETS ARE MORE EFFICIENT, TRANSPARENT AND FREE-FLOWING, WHEN THE CORRECT ECOSYSTEMS ARE IN PLACE."

GAME INDUSTRY COMMUNITY AND INDUSTRY REPRESENTATION

The Nordic game industry community is one of the most vibrant in the world. IGDA Finland in particular is one of world's largest and most active chapters for game developers. This vibrant community creates momentum for the heart of the Nordic Game industry community, a highly-skilled and highly motivated group of individuals who are keen to share insights, issues and truly enjoy their craft.

Direct intervention by government is largely to set the environment for the industry to operate. This government intervention can only work with the right community in place. With a strong core of individuals in the game industry, the natural growth would be for industry to band together forming cohesive industry representation. Industry associations, NGOs and non-profits often take a longer-term view in presenting the industry case.

Mediasoft, Malaysia

RECOMMENDATIONS 07

RECOMMENDATIONS FOR THE SOUTH EAST ASIA GAME INDUSTRY

The following recommendations were distilled from various sources as elaborated earlier in this report; inputs which included the industry and IHL components of the South East Asia Game Industry Talent Report survey and the findings of the Nordic benchmarking exercise. These recommendations are suggested action items to build a robust talent ecosystem and facilitate game industry growth in South East Asia:

ENHANCEMENT OF REGIONAL/GLOBAL TALENT EXCHANGE

- Easement of visa/quota for talents in SEA in order to promote inter-regional talent exchange. Promotion of visa/quota mainly for SEA countries may solve the local shortage of talents in each country
    - Recommend the ASEAN Economic Community (AEC) to include the video games sector as one of the key industries included to have fast track on working-pass applications in South East Asia region
- Invitation of game designers from other regions and hosting of sharing platforms and seminars (online and offline). Cultivation of game designers is an important issue in the whole South East Asia region, but challenging to build numbers immediately. Running these platforms frequently together with together with input from game designers from outside the region can elevate skill and increase exposure.
    - IHLs providing short-term courses for up-skilling and knowledge sharing in collaboration with foreign IHLs
    - Increase the number of long-distance game development courses to produce more game talent to cater the needs of local game industry
    - Game companies to consider having a recruitment drive in regional career fairs both within South East Asia and outside the region to look for more game designer/programmer/artist
- The creation and aggressive promotion of industrial secondments between universities and game companies. These secondments could operate in both directions, starting with universities being able to get professionals from game studios to contribute as experienced lecturers, teaching key subjects, without tie-up of long-term time commitment. On the other hand, IHL lecturers can be trained in product development while being exposed to the latest game development technologies and practices. Game studios benefit by getting access to the latest technology developments that may be on the verge of being fully commercial and facilitate the recruitment of students as talent.
    - Implement IHL-industry secondments that encourage industry participation through short duration programmes with tangible outcomes for both IHL. (e.g. experience, practice and industry talent demands) and industry (e.g. latest pre-commercial technologies, talent recruitment)
- Formation of regional South East Asia alliance of IHLs will help ease and facilitate student exchange through purpose built programmes amongst IHLs in SEA region. These game related focused programmes expand on students study in allied IHLs to share experience and projects, as well as help build a student network. Major goals would include courses that have common university credit in allied IHLs, forming common syllabus structures and promote regional integration through increased cultural interaction via student exchange
    - Introduction of IHL alliances within South East Asia for schools that teach game development courses, starting with a group of 3 to 6 schools from across the region covering the major game programmes of design and programming

IMPROVEMENT AND ACCREDITATION OF GAME EDUCATION

- IHLs to update syllabus more frequently to keep up with the rapid change in industry requirements. Besides up-to-date technologies, there is a need to balance game curriculum with basic subjects (e.g. Mathematics, Arts and Design, English) for holistic talent development. Ultimately, syllabus updates help maintain a balance between academic standards and industry skill demands. Actively including game companies in syllabus reviews and updates will help to affect minor but frequent course corrections.
    - o IHLs to encourage frequent, periodic and open discussions as syllabus with the game industry (e.g. course objectives, major topics covered, list of reading materials). Initial programme could include contact with specific companies, national game industry associations or the local IGDA chapter.
- Exchange programme with advanced game faculties (e.g. the Higher Education Video Game Alliance, HEVGA) to help programme coordinators innovate game course curriculum. Collaboration between local and international IHLs would increase the quality of game development course, provide academic goals and promote advocacy for the industry sector
    - o Introduction of global alliances to regional/national IHL alliances to form regional academic standards, provide coordinated data and approach to increase industry awareness of this sector

“ IT IS AN ADVANTAGE TO HAVE LECTURERS FREQUENTLY DEVELOPING AND PUBLISHING GAME TITLES TO UNDERSTAND FIRST HAND ISSUES WITH THE STATE OF THE INDUSTRY.”

- Aid for software and technology updates and support international exchange programmes are needed for educating game developers. Since the South East Asia game industry is in a growth stage with technology changing rapidly, support for updating software and teaching skills is needed: lecturer and student access to technologies is vital to elevate skills.
    - o Stakeholders to facilitate by having increased number of public-private partnerships in negotiating technology support and sharing of facilities within the South East Asia region. Industry can also initiate by approaching IHLs to showcase game related technologies, in return for favourable access to graduating talent and evangelical approach towards pushing technology to IHLs
- In order to establish reliable accreditation programmes, periodic review of IHL lecturers and syllabus will be needed. It is an advantage to have lecturers frequently developing and publishing game titles to understand first hand issues with the state of the industry. This should be systemic, with sufficient allocation of time and resources for lecturers to develop games as a practice. Periodic reviews also allow better understanding of applicable game course skills that need accreditation
    - o IHLs to introduce routine reviews of lecturers and syllabus to better plan for subjects that require accreditation. Review metric of the lecturing staff could be measured by games published (similar to research papers being published)

Extend Studio (x10), Thailand

GOVERNMENTAL SUPPORT

- A dedicated alliance to move the South East Asia game industry landscape to the next level needs to be formed and formalised. This is vital for the region to have a unified voice of developers and publishers, in presenting the strengths and addressing the challenges on a common front, and being able to utilise or request for resources on a regional level. Such an alliance, may not be very easy to achieve as different countries have different priorities in growing their nations' economy, but the unified regional industry effort to link is critical
    - o South East Asia game industry associations to collaboratively work towards a formal alliance that may be called the ASEAN Game Network Connection. Initial phase of development could be via increased inter-governmental engagement to create more business matching and sharing of common industry relevant programmes
- Support for overseas training of lecturers and programme coordinators will be needed since the majority of IHLs face issues in budgets and time allocation for lecturers. With the increasingly global nature of the game industry, international exposure of technologies, markets and practices is similarly needed.
    - o IHLs, government and the private sector to implement support systems for up-skilling, training and development of academicians. IHL support on training schedules, deliverables; government support for accommodation of syllabus change; and private sector support to link international offices with regional counterparts

Forest Interactive, Malaysia

PIGSSS GAMES, Thailand

- Offer incentives for game designers to attract skilled game developers back to South East Asia. Since there is a sizeable number of talent from the region that work outside South East Asia, having these incentives would entice local game studios to hire staff who have both industry experience and connected to international industry networks. While this programme is underpinned by stakeholder support, this effort should be driven by both private industry and IHL to determine the identified talent to attract. With effective implementation, this programme can address local skill shortage and add to the richness in diversity of game developers or game lecturers.
    - o Private companies, IHL and stakeholders to create or modify existing talent attraction programmes for experienced talent repatriation to the South East Asia region. Tax credits and incentives are the facilitating mechanisms, however, private industry and IHLs have to be the driving force in determining demand.

REFERENCES 08

REFERENCES

1. SEA Game Industry Initiative 2015, MDEC
2. PwC Global Entertainment and Media Outlook 2015 – 2019
3. NeoGame Report 2014
4. Newzoo South East Asia Report 2015
5. Skilled Shortage Sensible : Full Review Of The Recommended Shortage Occupation Lists For The UK And Scotland, A Sunset Clause And The Creative Occupations (Migration Advisory Committee), February 2013
6. Playing For The Future :The Critical Role of Skills for Canada's Video Game Industry (Report), March 2016
7. Media Create, "Emerging Game Business Report"
8. Pocketgamer.biz, http://www.pocketgamer.biz/
9. The Hechinger Report, http://hechingerreport.org/
10. Smithsonian, http://www.smithsonianmag.com/innovation/
11. National Association of Colleges and Employers, NACE, http://www.naceweb.org
12. Gameindustry.biz, http://www.gameindustry.biz
13. Square Enix, Advanced Technology Division Library, http://www.jp.square-enix.com/tech/publications.html
14. Sweden is a tech superstar from the north, TechCrunch, https://techcrunch.com/2016/01/26/sweden-is-a-tech-superstar-from-the-north/
15. Jobs Central Community, http://community.jobscentral.com.sg
16. Gamereactor, http://www.gamereactor.eu/news
17. Developer Satisfaction Survey 2014 Summary Report
18. 12 Hottest Nordic Fintech startups : http://www.businessinsider.my/hot-nordic-fintech-startups-2015-10/4/#kfFhgoSu3cFUADQX.97
19. Swedish Game Education: 2001-2016: https://www.his.se/
20. Association for the Nordic Game Industry (ANGI) : http://angi-nordic.com/about-angi/who-we-are/
21. Finland Game Industry Report 2014
22. Nordic Council of Ministers – Estonia, http://www.norden.ee
23. The Rise of Mobile Games: Factors Contributing to Their Success (August 25, 2014)
24. Develop, http://www.develop-online.net/
25. User Studies – A Strategy Towards a Successful Industry-Academic Relationship (Report) http://www.northeastern.edu/magy/conference/BardelSFU_final.pdf

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