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Attracting AI Talent in 2022: A Study of Three Chinese Tech Giants; Baidu, Alibaba, and Tencent

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Master of Arts (M.A.) in Asian Studies Politics, Society and Economy of Asia (60EC)

Attracting AI Talent in 2022: A Study of Three Chinese Tech Giants; Baidu, Alibaba, and Tencent

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The journey of writing this paper started in 2021 when I first started interning with Atos. Working as a project management intern, I focused on researching artificial intelligence use cases for six months. The majority of my research was on China. During this internship, I got support from Matt Sheehan, author, and fellow, on my research topic selection. I learned that the AI talent shortage was a much-needed topic yet to be fully explored in academia through a conversation with him.

I would also like to thank my friend Ma Xiao Xin (Samantha) for letting me use her phone number to access the 智联招聘 Zhaopin and 猎聘 Liepin hiring platforms.

ABSTRACT

Purpose – This paper argues that education alone will not solve China’s AI talent shortage crisis. To successfully attract top international and domestic talent, China needs to reposition itself in modern and people-centered ways. AI talent must be valued by companies (like Baidu, Alibaba, and Tencent) and the government.

Design/methodology/approach – This research adopts a two-part qualitative analysis. The policy document analysis utilizes the New Generation Artificial Intelligence Development Plan (NGAIDP) to identify a central framework. The secondary content analysis is an analysis of job advertisements and company websites of Baidu, Alibaba, and Tencent.

Findings – Baidu, Alibaba, and Tencent, are not equal in how they appeal to prospective employees. The consequence of this is the impact on the AI talent shortage crisis; without being able to attract the best talent in the world – China faces the disadvantage of not becoming the world leader in artificial intelligence by 2030.

Research limitations/implications –The study has several unaccounted variables, including the recruiter and the impact of COVID on employee value proposition. Furthermore, this study assumes that EVP is cross-cultural.

Practical implications – The Chinese government places much value on the artificial intelligence training of youth rather than the importance of talent retention and attraction. It is evident via the NGAIDP that companies are responsible for following the values of the Chinese Communist Party. However, there is little to be said about the human value of employees and the necessity for China’s tech giants to find practical solutions. In addition, the criticism from Western scholars toward China’s AI national ecosystem is based on fear and assumption – without realizing that China’s tech companies face the challenge of appealing to a highly educated generation of AI talent.

Originality/value – This paper takes a different approach to investigating the NGAIDP and combining it with research outside the traditional Chinese-studies scholarship. The combination of Chinese scholarship with Human Resources scholarship adds depth to the discussion of employee value in China and how companies should be moving forward in the future.

Keywords - China, New Generation Artificial Intelligence Development Plan, AI Talent, Baidu, Alibaba, Tencent (BAT), Employee Value Proposition, Talent Management

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LIST OF ABBREVIATIONS

| | |
|---------------|--|
| AI | Artificial Intelligence |
| BAT | Baidu, Alibaba, Tencent |
| CCP | Chinese Communist Party |
| ESG | Environmental, Social and Governance |
| EVP | Employee Value Proposition |
| NGAIDP | New Generation Artificial Intelligence Development Plan |

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CHAPTER 1: RESEARCH DESIGN

1.1 INTRODUCTION

China is at a disadvantage in what is called the “war on talent¹” for two important reasons; 1) they do not have enough general AI talent², and 2) they lack sufficient high-quality AI talent. In 2017, the Chinese government published a policy to make China the world leader in artificial intelligence by 2030. If the aim is to be the global leader in artificial intelligence by 2030, acquiring talent will be more critical than acquiring technology to reach anticipated innovation levels (Baidu & Zhejiang University, 2022) (Bandurski, 2021).

The policy, titled *New Generation Artificial Intelligence Development Plan (NGAIDP)*, is controversial among scholars and politicians³ in the West, particularly in the United States (Bajarin, 2021). They believe the ideology behind the NGAIDP is to enhance digital authoritarian control and expand surveillance of its citizens (Creemers, 2020). In this paper, I critique this central narrative of the digital authoritarian state and challenge others to explore China’s disadvantages by focusing on an essential issue for their national AI system; the crisis of an AI talent shortage. Even though the Chinese government has raised AI to the level of national strategy, it cannot immediately change the severe imbalance between the supply and demand of AI talent in China (Tencent, 2017).

¹ Coined by McKinsey and Company in 1997 as a way to describe the phenomenon that was companies scrambling to hire and retain the people they needed (Michaels et al., 2009). Now the term is used by China scholars and politicians to indicate the fierce competition between the US and China over tech-savvy talent.

² China is currently facing a shortage of five million AI talents according to a 2022 report from Baidu & Zhejiang university.

³ A notable example is President Trump’s Deputy Assistant for Technology Policy Michael Kratsios (Bajarin, 2021) (Sherman, 2019)

In order to understand the Chinese Communist Party's ⁴concerns over the AI talent shortage more broadly, I use the NGAIDP as a basis. However, exploring an AI talent shortage is broad, so I narrowed the scope to focus on analyzing three Chinese tech giants attracting crucial talent. These three AI-focused companies are Baidu, Alibaba, and Tencent (also known as BAT). BAT represents three of the four technology giants that China's Ministry of Science and Technology (MOST) selected to build open innovation platforms accessible through Application Programming Interfaces (Chin, 2019).

As was also outlined in the NGAIDP, the push for human capital has already begun. However, there has been no research on how successful Baidu, Alibaba, and Tencent are at attracting talent (specifically high-quality talent). In recent years, criticism has fallen on China's tech giants, as some employees quote the term "zero-sum game." To look at it from an employee's perspective, Chinese citizens spend their whole lives competing with one another throughout their school years only to get into a job that overworks and undervalues them. Although working for tech giants like the BAT is a status symbol for young Chinese graduates, employees experience burnout and forced competition with their team members for bonuses. This experience has prompted the term *lying flat*, also known as choosing a more comfortable lifestyle than the pressures of working in a fast-paced, all-consuming job (Davidovic, 2022). Attracting talent in 2022 is more than just a competitive salary; it includes a range of competitive benefits that give an employee a sense of purpose and proper monetary compensation for years of experience and professional expertise. It is precisely this range of benefits (referred to later on in this paper as *Employee Value Proposition*) that I weigh to answer the research question of this thesis; "*To what extent are China's tech giants (Baidu,*

⁴ Used interchangeably in this paper with Chinese government and CCP.

Alibaba, and Tencent) successful in attracting AI talent as per China's 2017 New Generation Artificial Intelligence Development Plan?"

In the rest of this chapter, I detail the following; 1) where my research fits in the debate surrounding China's national AI strategy, 2) the objective of this thesis, 3) the significance of this thesis, 4) vital concepts and terms, and finally, 5) the layout of this paper.

1.2 PROBLEM

The present narrative pushed by many Western scholars and politicians is that China's AI national strategy reveals a desire to "enhance digital authoritarian control and expand surveillance of its citizens." However, this narrow statement assumes surveillance and censorship are at the core of China's AI growth. While I consider the NGAIDP a legitimate policy (Webster, Kania, Triolo, & Creemers, 2017) (Roberts et al., 2021) with achievable, measurable actions, with little room for speculation, I find fault with the government's focus on the modern needs of employees. I also do not exclude surveillance as a byproduct of development but rather emphasize that China's position as a leader by 2030 is threatened due to its relationship with employee value.

1.3 OBJECTIVE

To evaluate success among three major tech companies means to pick apart their values. I aim to prove that China's major tech giants are attempting, but not necessarily succeeding, in adapting to a modern world that needs to accommodate the modern employee. By analyzing China's major AI policy and looking at China's major AI team players, I plan to investigate China's message to its prospective employees. Does the country want to be a leader in AI by 2030? To do so requires a conscious effort on the part of companies to better themselves.

1.4 SIGNIFICANCE

A narrow narrative of China's AI strategy is being pushed into mainstream media and academia. The challenge for scholars is to find a way to circumnavigate the "what could be" of Chinese AI technology and focus on the reality of the current state of the national AI ecosystem. China, like the US and many other Western countries, lack a supply of advanced AI talent. The lack of advanced AI talent is a massive problem for the ecosystem's longevity and shows that without meeting this essential task, China will not reach its goal of being a world leader in AI by 2030. What I contribute to this discussion is real-time research on how these companies stand in terms of advertising. If an AI talent shortage is a national concern, then Chinese companies should be equally concerned, if not pressured, to be attractive to top talent without fail. By focusing on the performance of Baidu, Alibaba and Tencent, I am showing the top tier of stakeholders in this national strategy. The responsibilities of these stakeholders are a very under-researched topic in Chinese AI scholarship. I hope writing this paper encourages more scholars to look into the relationship between giant tech companies and respective AI talent in China and worldwide.

1.5 CONCEPTS & TERMS

What is *AI talent*? This paper combines definitions from several sources and produces a unique definition. The Chinese information-technology ministry has defined AI talent as; 1) compounded - meaning that high-end talent is those who can integrate AI theories, methods, technologies, products, and applications and 2) people who can master AI in the context of economy, society, and management. Another definition of AI talent is proposed by Jeffrey Ding, who states that there are two types of AI talent; AI practitioners and AI experts. AI practitioners are those capable of participating in AI-related projects in corporate and university settings. Though they may not have advanced degrees, they can plug and play with existing AI packages and apply them to specific problem sets. AI experts, who often have advanced degrees, may boast more patents and publications. China is second only in the number of AI

practitioners, yet much further behind in the number of AI experts (Ding, 2019). I will be using the term “Advanced AI Practitioners” to equate the upper end of undergraduate and already-established hires. As defined in the job advertisement criteria, this paper focuses on an experience level of 5-10 years, which often includes undergraduates with internship experience.

Legitimacy achieves the goal of realizing the NGAIDP. A definition of legitimacy is necessary for understanding the literature review portion of this paper. The legitimacy will be discussed in the context of a debate surrounding the NGAIDP as a public policy. Public policy, defined broadly, consists of patterns of actions taken over time (Smith & Larimer, 2018). Legitimacy is a term for a document that its institution realizes. China is the primary definer and defender of its AI strategy.

1.6 RESEARCH QUESTIONS

The main research question is, "*To what extent are China's tech giants (Baidu, Alibaba, and Tencent) successful in attracting AI talent as per China's 2017 New Generation Artificial Intelligence Development Plan?*"

SQ1: What does success mean to the Chinese government?

SQ2: How do Baidu, Alibaba, and Tencent compare in talent attraction?

1.7 LAYOUT

This paper continues with the following chapters; Chapter 2: Literature Review, Chapter 3: Methodology, Chapter 4: Results, Chapter 5: Discussion, and Chapter 6: Conclusion. The upcoming chapter, Chapter 2: Literature Review, will review the debate surrounding the legitimacy of the NGAIDP. Chapter 3 starts with an overview of the qualitative methods used in the research. The chapter goes in-depth with two qualitative analyses; policy document analysis and content analysis. The results of the policy document analysis aid the content

analysis; therefore, the results are placed in Chapter 3. In Chapter 4, I review the content analysis results, followed by Chapter 5, where I discuss the results from the qualitative analysis. The paper ends with a conclusion in Chapter 6, followed by a section on references and the Appendix, which relates to the policy document analysis discussed in Chapter 3. The framework is outlined in 3.3.4 Policy Text.

CHAPTER 2: LITERATURE REVIEW

2.1 DEBATING THE NEW GENERATION ARTIFICIAL INTELLIGENCE

DEVELOPMENT PLAN (新一代人工智能发展规划)

While this section is short, it answers a central question about the NGAIDP. Is the NGAIDP to be accepted at face value? When discussing the legitimacy of the policy, most scholars decree it as a work of serious intent. In a blog post for New America, “China’s Plan to ‘Lead’ in AI: Purpose, Prospects, and Problems,” Creemers argued that real political capital is spent on drafting a document such as this, and considerable resources will be invested in its implementation (Webster, Kania, Triolo, & Creemers, 2017). In Robert et al.’s “The Chinese approach to artificial intelligence: an analysis of policy, ethics, and regulation,” the authors argue that the NGAIDP is the first national-level legislative effort that focuses explicitly on the development of AI as a unified strategy (Roberts et al., 2021). The authors make a valuable contribution to academia by legitimatizing China’s AI strategy and, by proxy, acknowledging that real effect takes part in the private sector. “Being endorsed as a national champion involves a deal whereby private companies agree to focus on the government’s strategic aims. These companies receive preferential contract bidding, easier access to finance, and sometimes

market share protection (Roberts et al., 2021).” National champions (also referred to as the first members of the artificial intelligence national team) are identified in this paper as BAT (Baidu, Alibaba, and Tencent). As such, the private sector is responsible for fulfilling the needs of the NGAIDP and the Chinese government. However, Roberts et al. do not elaborate on how the private sector (and national champions) address the pressures of such a massive responsibility. Compared to what Google, Facebook, and Amazon might face in the U.S., it is widely understood that the interference in the private sector by the CCP is much higher. The legitimacy of the NGAIDP is why it works as a centerpiece for this paper.

CHAPTER 3: METHODOLOGY

3.1 OVERVIEW

This chapter follows a two-part qualitative analysis. The policy document analysis utilizes the New Generation Artificial Intelligence Development Plan (NGAIDP) aims to analyze the NGAIDP and will ascertain what the CCP expects from the country’s leading AI companies regarding AI talent. The secondary content analysis is an analysis of job advertisements and company websites of Baidu, Alibaba, and Tencent.

The policy document analysis will answer the following subquestion; *SQ1: What does success mean to the Chinese government?* This answer is determined by utilizing two texts; the NGAIDP and 14th Five-Year Plan for National Informatization (shortened to the 14th five-year plan). This methodology chapter will also discuss the results of this analysis.

The content analysis will answer the following subquestion; *SQ2: How do Baidu, Alibaba, and Tencent compare in talent attraction?* The data from this analysis will determine

the relationship between China's concern regarding the AI talent shortage and the employee value proposition. The results are discussed in Chapter 4.

3.2 INTRODUCTION: POLICY DOCUMENT ANALYSIS

Using Cardno's methodology of policy document analysis requires two stages of deductive policy document analysis (See appendices 2&3). This method of analysis was chosen because a policy is not value-free. Identifying the values (both implicit and explicit) in the policy and tensions between values allows the analysis to probe the policy to uncover forces or drivers that influenced inception and impact expectations (Cardno, 2018). Furthermore, this approach does not require ethical considerations and can produce valid criteria for the second analysis. It is also straightforward, efficient, cost-effective, and manageable (Cardno, 2018).

Appendix 2 comprises a list of essential questions that allow probing of the policy and uncovering drivers influencing inception and impact expectations. Appendix 3 uses the above analysis to answer the policy's purpose, how it was constructed, and issues related to its implementation and subsequent impact. Appendix 3 requires the analysis of an additional text for comparison, in which the 14th Five-Year Plan for National Informatization is utilized.

3.3 POLICY DOCUMENT ANALYSIS: QUESTIONS FOR ORGANISATIONAL POLICY ANALYSIS⁵

3.3.1 Document Production and Location

The NGAIDP is part of a series of technology-related national strategic plans to move the country away from manufacturing and high-tech sectors such as artificial intelligence. This policy expresses China's aim to become the world leader in AI by 2030. The document was

⁵ See Appendix 2 for an overview of the questions in this analysis.

accessed in two capacities 1) original translation on the CCP website⁶ and 2) a complete translation provided by New America⁷.

3.3.2 Authorship and Audience

The initial text addresses the audience, “各省、自治区、直辖市人民政府，国务院各部委、各直属机构：现将《新一代人工智能发展规划》印发给你们，请认真贯彻执行。” The audience members are the government at the regional and central levels. Institutions also fall under the jurisdiction of this policy, including private and public institutions such as universities, research institutions, and corporations. Below is a table that outlines how certain groups come up in the policy paper. A central word is outlined, i.e., “业” or industry, and these central words or characters are broken down into variations. The groups that have been excluded from this analysis are education groups (excluding research institutions) and the military, as they are not a relevant focus for this paper.

Table 1: Groups referred to in the original NGAIDP text⁸

| Keyword | Description in text |
|----------------|---|
| 人才 talent | Talent is mentioned <i>34 times</i> in the text. Additions and variations of 人才 are as such; 顶尖人才 (top talent), 人工智能尖端人才 (artificial intelligence cutting-edge talent), 高水平的人才 (high-level talent), 高端人才 (high-end talent), and 国内创新人才 (innovative domestic talent). |
| 业 industry | Industry is mentioned <i>159 times</i> in the text; not every mention refers to a group of people. In this text, “industry” is a blanket term for what mainly constitutes private-level activities, including everything from entrepreneurs to large corporations. Here is where the word industry 业 refers to a group in some capacity or another; 产业 (common writing for the word ‘industry’), 新业态 (new businesses or industrial development), 创业 (entrepreneurship), 企业 (enterprise), 工业 (similar to 产业), 新创业 (also refers to new |

⁶ http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm

⁷ <https://www.newamerica.org/cybersecurity-initiative/digichina/blog/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/>

⁸ Some words were translated with Google Translate and DeepL Translator.

| | |
|-----------------|---|
| | businesses), 行业 (similar to 工业 and 产业), 商业 (business, commerce), 业学 (universities), and 专业 (profession, professional). |
| 国 China | China is mentioned <i>157 times</i> in the text; 国 refers to all things related to the country as a whole and government. Specifically, the parties involved are the following; 我国/ 国家/ 中国 / 全国/ 国内 (refers to all citizens of China), and 国际/ 国外 (internationally, but about the strategic competition). |
| 机构 Institutions | Institutions are mentioned <i>17 times</i> in the text. These characters refer to 科研机构 (scientific research institutions), 人工智能研究机构 (artificial intelligence research institute), 平台等新型创业服务机构 (platform ⁹ and other new entrepreneurial institutions), and 社会化培训机构 (social training institutions). Institutions are also mentioned alongside the word for enterprise, surrounded by words like cooperation and support. |

3.3.3 Policy Context

This section discusses the purpose of the NGAIDP. The driver of this policy is the improvement of the economy. Artificial intelligence is not only marketed by the CCP as a “way to bring China out of poverty” but also as a modern notion of survival. China’s thought process with artificial intelligence is to move the country away from manufacturing and toward becoming a global leader in tech products and services. The NGAIDP fits in with a series of policies the Chinese government uses to bolster artificial intelligence throughout the country. However, as discussed in Chapter 1, the creation of these policies does not escape without notice from the international community. “The uncertainties in the development of AI create new challenges. AI is a disruptive technology with widespread influence that may cause: the transformation of employment structures; impact on legal and social theories; violations of personal privacy;

⁹ According to a search query on Baidu’s “Zhidao,” Platform is usually extended to refer to the stage for people to stretch their talents or to the environment or conditions required to carry out certain work.
<https://zhidao.baidu.com/question/269762986847279045.html>

challenges in international relations and norms; and other problems (Webster et al., 2017).” The policy, as seen by outsiders, reflects the deeper ethical values of a highly surveillance-driven nation. However, within the policy itself lies a chain of values suggesting that the central government is considering (or at least mentioning) creating a system to monitor the norms and ethics of AI as it is used within the country. However, there has been criticism about some contradictions in the NGAIDP wording about its value system. In a single paragraph, for example, it is written that there is great promise for AI technologies to improve public services, and at the same time, these technologies can be used as a tool to “control” social unrest (Creemers, 2020).

3.3.4 Policy Text

The NGAIDP is structured around various key groups (see Table 1), of which not all were identified in the previous section. However, *industry* is arguably the most prominent group in reference. Industry (业), referenced 159 times, takes the lead over terms like “ethics” and “institutions.” The key elements for industry are repeated throughout the policy, but several of the most important ones are outlined in Table 2. The key elements (or objectives) comprise the *Key Task*. Outlined in the NGAIDP are key tasks representing different areas for improvement. Among the key tasks, *Key Task #4* stands out as having the most relevance to acquiring top talent for the big tech giants. The task is “Accelerate the training and gathering of high-end artificial intelligence talents.” This task comprises various key elements, or objectives, that reference the industry’s responsibility toward talent acquisition. These objectives were intended to be carried out by 2020, but research has not yet proven if they have. Key task #4 proves an ideal framework for this paper. It summarizes the most relevant concerns about AI talent where industry is concerned. The most relevant objective connected to the task is the

first objective listed in Table 2. The objective states that industry has the responsibility to develop top AI teams that will include top international and recently graduated talent.

The listed objectives are tied to procedures and regulatory requirements that ensure that the objectives can be met. The NGAIDP’s most prominent regulatory procedure is the *Thousand Talents Program*. The Thousand Talents Program targets high-level domestic and foreign-born talent overseas. The program decreases bureaucratic barriers to attracting the best talent into the workforce.

Table 2: Strategic Situation Objectives – by 2020¹⁰

| Section | Objectives (key elements) | Procedures/Regulatory requirements |
|--|--|--|
| <p><i>Key Task #4</i> Accelerate the training and gathering of high-end artificial intelligence talents.</p> | <p>Take the construction of high-end talent teams as the top priority of AI development, adhere to the combination of training and introduction, improve the AI education system, strengthen talent reserves and echelon construction, and significantly speed up the introduction of global top talents and young talents, and form my country's artificial intelligence talent strength.</p> | <p>1. Thousand Talents Program (CCP) 2. Young Marshal Program (Baidu) 3. Youth Army (Alibaba) 4. Tencent Youth Science Festival</p> |
| | <p>Improve the policies related to human capital cost accounting of enterprises, and encourage enterprises and scientific research institutions to introduce artificial intelligence talents.</p> | <p>1. townhall meetings 2. company directives</p> |
| | <p>Strengthen industry-university-research cooperation, and encourage universities, research institutes, and enterprises to cooperate in constructing artificial intelligence disciplines.</p> | <p>1. industry-university-research cooperation model ¹¹ 2. Institute of Data Science and Technology (iDST) (Alibaba) 3. Baidu USA 4. Tencent AI Lab</p> |

¹⁰ Information in this chart has been summarized. Full translation and original text from this section are listed in the appendix.

¹¹ Based on the Stanford-Silicon Valley model.

3.3.5 Policy Consequences

The overall impact of the policy is to drive change among key groups and stakeholders. The group of focus in this paper is industry where big tech giants are concerned. The NGAIDP states clear goals that it wishes to see industry perform. Achieving these goals will increase university-industry cooperation and the hasty acquisition of critical talent.

The frequency of policy review can be determined by searching the official government website under the subsection “technology, education.” The CCP has released 54 policy papers under the national law classification between 2018 and 2020. The last section in the text in NGAIDP, titled “guarantee the implementation,” outlines the government's plans to establish a monitoring and evaluation mechanism for the implementation plans, such as annual and mid-term evaluations. That evaluations are most likely the 14th Five-Year Plan¹², released in 2021. Here are some highlights that concern enterprises and AI talent; 1) China’s global innovation index ranking jumped from 29th in 2015 to 14th in 2020, 2) Since 2019, our (China) country has become the largest source of patent applications globally, and ranks first worldwide in patent application numbers in areas such as 5G, blockchain, and artificial intelligence, 3) Support and standardize the development of employment forms; deepen the construction of national dual start-up and innovation model bases, and strengthen the linkage of supply and demand of industrial talent and precise services, 4) Accelerate the advancement of standardization and uniformization of human resource management services for talented individuals as well as information sharing and coordination, 5) Display the role of companies as vehicles to attract talent and support foreign high-level talent in the informatization area to innovate and start businesses within China, 6) Perfect enterprises’ digital capabilities and

¹² Used digichina translation. <https://digichina.stanford.edu/work/translation-14th-five-year-plan-for-national-informatization-dec-2021/>

building market service ecologies (including talent training), 7) Continue to carry out various specialized entrepreneurial skills education and training programs; robustly improve systems relating to job titles, professional qualifications, vocational skills grading, and others, and enhance the directness and effectiveness of talent evaluation, 8) strengthen the dominant role of enterprises in innovation and enterprises to launch high-efficiency cooperation, 9) Fully display the role of enterprises in standards implementation, and enhance international cooperation in areas such as informatization standard formulation, information exchange, and talent training, and 10) Encourage leading enterprises to deeply participate in higher education talent training (Creemers, Dorwart, Neville, & Schaefer, 2022).

3.4 POLICY DOCUMENT ANALYSIS: POLICY CONTENT ANALYSIS

EXERCISE¹³

The 14th Five-Year Plan for National Informatization fits into the policy content analysis exercise because it is discussed in the NGAIDP. This exercise utilizes the original text and the translated text published in DigiChina. This exercise aims to better understand the NGAIDP by examining another closely related policy and comparing the two. The policy documents are analyzed from three perspectives; 1) policy purpose analysis, 2) policy construction analysis, and 3) practice implementation and impact.

3.4.1 Policy Purpose Analysis

This section analyzes the purpose, values, and local or national strategic and quality issues of the 14th Five-Year Plan for National Informatization. The five-year plans are a series of social and social development initiatives issued by the CCP. Most five-year plans in recent years have operated as guidelines. The 14th Five-Year Plan for National Informatization was published in December 2021, but the 13th five-year plan covered the period in which the NGAIDP came out.

¹³ See Appendix 3 for an overview of the questions in this analysis.

Naturally, the 14th five-year plan is a continuation, or follow-up, of goals set up in the previous plan, some of which were covered in the NGAIDP. The values underpinning the 13th and 14th five-year plans have been their high regard for informatization. Artificial intelligence, which has 95 mentions, is still a crucial part of China's growth plan.

3.4.2 Policy Construction Analysis

This section analyzes the construction and components of the policy and who is involved in the policy development. The 14th five-year plan has a similar construction to the NGAIDP. The documents both follow a similar order; 1) outline of the current situation, 2) general requirements (guiding ideology + basic principles), 3) strategic goals/ development objectives, and 4) implementation. Like the NGAIDP, the 14th five-year has multiple stakeholders (audience), including enterprises (mentioned 123 times). A similar level of responsibility falls on enterprises to carry out some of these guidelines.

3.4.3 Practice Implementation and Impact

This last section discusses the policy's overall impact, strengths, and concerns in practice. The overall impact of this policy is similar to that of the NGAIDP. In the five years since the NGAIDP was published, China's global innovation index ranking has increased, and the country has become the largest source of patent applications globally. China also ranks first in 5G, blockchain, and artificial intelligence patent application numbers. The ultimate goal was to move ahead with the informatization of Chinese society, which has been achieved. The caveat is that there are still many hurdles to overcome, specifically a shortage of AI talent.

The strengths of the 14th five-year plan are government support for enterprises and universities. Strategic goals get accomplished quickly when supportive policy and legislation are in place. Additionally, the CCP is particular about the technology it wants to use and where it wants to use it – making its goals specific and achievable. On the other hand, a weakness is

its inherent focus on “technology at all costs” without insight into what that might mean for the national debt. Similarly, the lack of mention of surveillance is worrisome – as it is something outlined in the NGAIDP. Contradictions about the power of technology and the need to monitor citizen behavior bode unwell for a country encouraging open-source data sharing. Lastly, artificial intelligence's impact on job security in China has not been fully addressed, and it is unclear what groups of people are being trained to update their usable skills.

3.5 CONCLUSIONS FOR ORGANISATIONAL POLICY DOCUMENT ANALYSIS & POLICY CONTENT ANALYSIS EXERCISE

The overall impact of the NGAIDP on industry is that they must make contributions. The text highlights these contributions ranking higher in international innovation indices, increasing human capital, and increasing university-enterprise cooperation. The policy content analysis has provided this paper with a framework and an answer to the first subquestion. The policy content analysis concluded that the NGAIDP, and the 14th five-year plan, are both concerned about the impact of an AI talent shortage. Both policies emphasize the role of industry/enterprises in stopping the shortage. The NGAIDP and 14th five-year plan acknowledge that talent must be top quality, referring to international or young (recently graduated) talent. Success (SQ1) relies on training and hastily acquiring (by 2030) top talent.

3.6 CONTENT ANALYSIS

The content analysis is second in the two-part qualitative analysis. The results of the policy analysis & policy content analysis exercise conclude that industry/enterprises have a prominent role in closing the gap on the AI talent shortage. The CCP expects that industry, hereafter presented as BAT, to focus on attracting top talent (international and recent graduates) to improve the country’s artificial intelligence ecosystem. However, no advice is given on how to

do this (compared to more detailed advice given to educational institutions training the nation's youth).

The content analysis will give more concise answers on how Baidu, Alibaba, and Tencent attract talent and offer a comparison between the three tech giants (SQ2). These answers are found by collecting data from job advertisements and company websites and analyzing them via a set of values (EVP) representing employee satisfaction criteria. These values also reflect a growing number of employees involved in the Great Resignation¹⁴, including those who have worked for Baidu, Alibaba, and Tencent.

The data from this analysis will determine the relationship between China's concern regarding the AI talent shortage and the employee value proposition. China is worried about an AI shortage primarily due to low supply; however, if EVP elements rank low (comparatively) in the data, the government should consider adding employee satisfaction to their policies as far as industry is concerned.

3.6.1 Job Advertisement Analysis

Job advertisements are often the first step in the candidate's experience. They show the candidate why a company is worth the effort of going through the application process and why they should work there. A few things that make an advert appealing are the first three elements of EVP; Compensation, Work-life balance, and Stability. The following list of items that are being searched for in the job adverts;

- 1) Compensation; Compensation is salary or remuneration.

¹⁴ This term can also describe growing discontent among many Chinese employees, especially Gen Z and millennials.

- 2) Work-life balance; looking for keywords such as “remote,” “flexible,” and “hybrid” (Deloitte, 2021).¹⁵
- 3) Stability; looking for keywords such as “training,” “professional development,” and “room for improvement.”

Collecting data from job advertisements is vital to prove that Baidu, Alibaba, and Tencent successfully recruit candidates. Job postings reflect employers' current needs and desires at certain times and under certain social conditions (Xu, 1996). Therefore we must take job adverts to be accurate in terms of what employers are demanding. For this paper, a data pool was collected over a short period, April - May 2022, and produced a sample of 300 job advertisements. The author took 300 samples over one month, reflecting an existing talent that ranged from 950 and 1500 AI Experts to 39,200 AI talents working in China in 2017 (Tencent, 2017).

AI talents include a variety of skill levels. However, if speaking about Advanced AI Practitioners, we are suddenly looking at a group of candidates with a minimum of five years of working experience and an in-demand skill set. Although we lack recent figures on AI experts and talents, Tencent 2017 predicted that 20,000 AI students would graduate annually in China. Moreover, while these are hardly concrete numbers, they represent a starting point.

In terms of the length of time in which this data was collected, the author has noted the following;

- Talent searches across regional Asia take around 45 days to source high-quality critical talent (Gartner, 2021).

¹⁵ Indicated as Yes or No in the data analysis, “Yes,” meaning that there is indication of flexibility and “No” if there is not.

- Jobs can stay on recruitment platforms for various lengths– for instance, jobs on LinkedIn stay active for six months (unless manually closed).

There are some job recruitment platforms in China. Baidu, Alibaba, and Tencent use a range of job recruitment platforms – including posting job vacancies on their company websites. According to an article in JSC (marketing analysts), if you are looking for senior managers or employees who speak English well, LinkedIn and 猎聘 Liepin¹⁶ are the best. LinkedIn was banned in its primary form (precisely due to contention surrounding its social feed) from operating in China, but it still exists in a censored format. Other popular recruiting platforms in China are 智联招聘 Zhaopin and 前程无忧 51Job, which can be used if companies are looking for junior or senior employees who do not possess English-language skills, which are often required for Advanced AI Practitioners (JSC, 2021). An honorable mention is BOSS 直聘 (Zhipin), another Chinese recruitment platform.

The search query identified the following phrases; 自动驾驶 Autopilot, 语音识别 Speech Recognition, NLP, 推荐算法 Recommendation algorithm, 声纹识别 Voiceprint recognition, 机器学习 machine learning, 深度学习 deep learning, 模式识别 pattern recognition, and 搜索算法 search algorithm for all companies listed under Baidu, Alibaba, and Tencent on the relevant recruitment platforms. Queries are made in Mandarin on the Chinese-based platforms, while LinkedIn was searched in only English. When available, boxes on the platforms were checked for salary and experience level.

The coding scheme is key to the analytical process. This research takes an inductive approach, also called data-driven (Schreier, 2012), and is characterized by searching for patterns. In this case, what can be determined about Baidu, Alibaba, and Tencent’s hiring

¹⁶ Both Liepin and Zhipin require Chinese mobile access to access data.

practices by the lack of listed compensation, work-life balance, and stability elements to required skills posted across recruitment platforms? Moreover, what does the data mean overall for each company? The coding process in this paper is based again on elements derived from EVP and information taken from the Tencent 2017 Report. Some essential information from the report has been used to create a basis for salary expectations and benefits.

- 1.9% of the companies offer a monthly salary of more than 50,000 yuan to attract top talents
- 50% of jobs offer stock options for employees
- The monthly salary of AI talents with more than five years of work experience is generally more than 40,000 yuan

Table 3: Content Analysis Coding Rules¹⁷

| Allowed | Not Allowed |
|--|-----------------------------------|
| Baidu, Alibaba, Tencent – Company or subsidiary | Experience level under five years |
| Omitted salary | |
| Experience level, 5+ years | |
| “remote,” “flexible,” and “hybrid” | |
| “training,” “professional development,” “room for development” | |

Table 4: Data Collection Overview

| Job Title | Location | Skills/Category | Years of Experience | Compensation: Salary RMB p/m | Work-Life Balance (Y/N) | Stability (Y/N) |
|-----------|----------|-----------------|---------------------|------------------------------|-------------------------|-----------------|
| | | | | | | |

3.6.2 Website Analysis

¹⁷ Terms have been translated into Mandarin while necessary, or was supported by automatic translation from the Google Chrome browser.

As with job advertisements, a company's website is crucial for the candidate's experience. Companies post career opportunities on their websites and showcase their brand. According to an article from Monster jobs, you can tell a lot from a company's website, including organizational structure, culture, atmosphere, and what kind of place it might be to work (DeJean, 2022). The unit for analysis will be the last two elements of EVP – Location & Respect. Location refers not only to the geographical location but also to the amenities within the office environment, as outlined in the list below. Respect is about giving back through a company culture that goes beyond salary. Those are also outlined below. While some job postings have included elements of location and respect, company websites still yield the most information regarding location and respect. Several publications have investigated how the physical indoor environment in office buildings affects employee satisfaction – mainly in comfort. Because it is difficult to access data related to the physical characteristics of offices, such as lighting, or enough windows, the focus will be on the environmental impact of company office buildings or the building's "greenness." Being in a green building increases overall environmental satisfaction (Leder et al., 2015). Environmental, Social, and Governance (ESG) is an essential part of company life for most large corporations. Many companies will provide ESG information on their websites. In order to effectively measure this, a chart has been created as a benchmark checklist.

Respect, or company culture (also referred to as organizational culture), is to the organization what personality is to the individual (Van Der Post et al., 1997). Previous studies have tested links between a strong organizational culture and employee performance, with many cases providing statistical analysis that these links existed in some form or another. This paper will focus on a few keywords that endow employee respect. A list of words has been generated from all the job advertisements in the dataset that can classify as "respect." All three

company websites will be searched and indicated as Y (yes, containing) or N (no, does not contain).

- Sports/Culture clubs
- Gym/Fitness
- Annual party
- Chinese New Year red packet
- Subsidies (rental, travel, any relevant subsidies)
- Insurance
- Free Shuttle
- Family day
- Healthcare/doctor

Table 5: Location (Office Environment)

| | |
|-----------------------------|---------------------------|
| Reference to Sustainability | Y/N – List format |
| Office Locations | Y/N – List offices |
| Energy Certifications | Y/N – List certifications |

CHAPTER 4: RESULTS

4.1 JOB ADVERTISEMENT ANALYSIS

The sample for analysis was 300 job advertisements found via the following sources; LinkedIn, Liepin, Zhaopin, 51job, Baidu website, Alibaba website, and Tencent website. Five of these 300 job advertisements were removed for repetition due to the same post being put up multiple times on LinkedIn and cross-posting between a company website and a job recruitment platform. Cross-posting, however, was, in general, very low. Most jobs were advertised on distinct platforms from the list. Jobs outside of China were posted on LinkedIn and the Tencent website, and jobs inside China were posted on Liepin, Zhaopin, and 51job. Only one job was offered outside of China on the local recruiting platforms out of the sample. Each platform

displayed the EVP elements differently or omitted them. LinkedIn had several repeated job posts. LinkedIn did display several key features that helped track EVP elements, such as tags “hybrid,” “remote,” and “on-site.” The challenges of finding EVP elements via LinkedIn were that salaries were not listed for BAT, nor did every company identify experience levels. The words “senior” or “principal” were searched for and compared to similar job postings on Liepin.

Additionally, jobs that required a Ph.D. were automatically allowed. Liepin gave plenty of selection criteria for helping to highlight EVP elements. These features included checking boxes for experience level, tagging benefits, and training in the section above the job heading. 51job was perhaps the most difficult to collect information, as one cannot specifically search a company and a skill in the search section. However, 51job does include tags similar to Liepin and Zhaopin. Lastly, the websites layout job vacancies quite differently. Using Tencent as an example, four different job summaries have been outlined in Tables 6-9. Each table shows how EVP elements have been (or have not been) displayed for prospective employees to access. The job recruitment platform is the most significant variable in communicating EVP elements, not the company. These findings are discussed in the next section.

Table 6: Job Summary – Advanced AI Practitioners - Tencent (Website) – English/Mandarin

Senior/Principal Engineer - Video Codec

Tencent America-Palo Alto

Position overview:

We are inviting motivated engineers to join our team in Bay Area. The team works on developing cutting-edge technologies in multimedia data compression, processing, transmission, analysis, and beyond. Some example areas include (but are not limited to) video compression algorithms, future video coding standards, VR and 360 video coding and transmission, intelligent visual data analysis and representation, and future immersive data compression and processing (e.g. point cloud, light field, etc.)

What you will be doing:

Technical leader of a team of researchers/engineers to research, design, implement, and optimize algorithms/models that lead to improved video compression performance
Work together with standard teams, other video technology and product teams to realize the start of the art video standards and algorithms into products.
Perform algorithm and architecture definition of various video codecs such as VVC, AV1, HEVC, VP9/VP8, AVC, MVC and so on.
Lead the definition, design and prototyping of algorithms for improving the quality and performance of the cloud-based video ingest and transcoding pipeline.
Communicate with leaders from various business groups inside the company to develop technology and product road maps.

We'd like you to have:

- Master degree or above in computer science, electrical engineering, math, statistics, or related fields
- 10+ years of related working experience with video compression and processing technologies
- Proven track record of delivering video coding products or video standard contributors
- Good understanding of state-of-the-art video compression algorithms
- Working experience on HEVC, VVC, AV1, etc
- Experience managing leading an R&D team
- Ability to communicate/collaborate with other researchers/engineers
- Ability to think out of box

Table 7: Job Summary – Advanced AI Practitioners - Tencent (LinkedIn) – English

Principal Game NLP Algorithm Researcher

Seattle, Washington

Responsibilities:

Responsible for NLP research and development including Chinese word segmentation, part-of-speech tagging, sentence analysis and named entity recognition;

Responsible for text classification, sentiment analysis, data mining and other research and development job;

Optimize existing online algorithms, develop efficient and reliable NLP solutions by combining business needs and data;

Explore applications of NLP techniques and deep learning algorithms in games;

Follow the latest developments in academia and industry and quickly apply findings in your work.

Requirements:

Familiar with NLP fundamentals, with a strong understanding of statistical models, related machine learning principles, and experience working on NLP related projects;

Proficient in at least one programming language, familiar with basic data structures and algorithms;

Experience in big data mining, knowledge-graph auto-making, and deep learning experience is preferred;

Familiar with word segmentation, part-of-speech tagging, entity recognition, sentence analysis. Experience in sentiment analysis, relationship extraction and event extraction is preferred;

Publication of academic results in academic journals and conferences in NLP-related fields (such as: EMNLP, ACL) is preferred;

Familiar with CRF, SVM and other classic machine learning algorithms and tools, word vectors, RNN, CNN, LSTM, GAN and other deep learning experiences are preferred;

Familiar with Tensorflow, PyTorch, Hive. Hadoop is preferred;

CV, NLP, reinforcement learning, cross-background preferred.

Table 8: Job Summary – Advanced AI Practitioners - Tencent (Liepin) – Mandarin

Tags: free shuttle, good leadership, big room for development

Job Responsibilities

1. Responsible for the construction of NLP machine learning and deep learning algorithm systems for Tencent's conference product line, including technical analysis, algorithm selection, implementation, implementation, and optimization of intelligent conference minutes, content retrieval, knowledge maps and other requirements;
2. Control Technical research and development direction, explore cutting-edge application technologies with potential to be implemented, and continuously improve the user experience of products;
3. Responsible for the technical culture construction of the algorithm team, and improve the research and development efficiency and team cohesion of the algorithm team; Collaborate to attract outstanding algorithm talents and enhance technological influence.

Job requirements

1. Full-time master's degree or above, computer, machine learning, pattern recognition, statistics, applied mathematics and other related disciplines;
2. More than 5 years of natural language processing related technology research or work experience, in word segmentation, entity recognition, text In-depth research and

- practical experience in understanding, text summarization, information retrieval, and knowledge graph technology;
3. Familiar with at least one programming language such as Python, C/C++, Java, etc., strong coding ability, and proficient in using one or more common machines Learning or deep learning framework;
 4. Have a solid theoretical foundation in NLP, machine learning, and deep learning, and have in-depth research and practice on LSTM/GRU, Transformer, BERT and other technologies; Papers published in B-class conferences (ACL, EMNLP, NIPS, ICML, AAAI, etc.) are preferred;
 5. Excellent learning ability and good sense of collaboration and communication.
- Priority admission for those who have passed the Tencent Cloud Practitioner Qualification Certificate or equivalent qualification certification

Table 9: Job Summary – Advanced AI Practitioners - Tencent (51job) – Mandarin

NLP Algorithm Engineer

Shenzhen

Job Responsibilities:

Responsible for NLP business scenarios such as text classification, sentiment analysis, topic analysis, topic summarization, viewpoint recognition, semantic understanding, etc. in text analysis; responsible for the construction of systematic knowledge graphs, building knowledge graphs from semi-structured or unstructured data ;

Responsible for the tracking of cutting-edge algorithms and frameworks in the NLP field, exploring NLP applications based on deep learning and big data;

organizing team personnel training, technical guidance, and breakthroughs in technical difficulties.

Job requirements:

Master degree or above in natural language processing, pattern recognition or machine learning related majors; familiar with the theoretical basis of NLP field, master statistical models, machine learning related principles, have NLP practical experience, have participated in related projects, have massive data mining, text Classification and semantic analysis, knowledge graph construction, deep learning research and development experience is preferred; familiar with some open source algorithm libraries or tools, such as: StanfordNLP, NLTK, Apache OpenNLP, Kaldi, HTK/HTS, Hadoop, etc., proficient in C/C++, Python, etc. at least One language; has a good team spirit and a high sense of responsibility.

Zhaopin and 51job provided the least amount of data. Most jobs fitting the category of Advanced AI Practitioners were exhibited on Liepin, followed by company websites and LinkedIn posts. This seems to fit the JSC article description that LinkedIn and Liepin are the best sources to search for senior managers or employees who speak English well. Employees

who might be on a similar level but lack the English language skills can be searched for on Zhaopin and 51job. One conclusion from the analysis could be that Advanced AI Practitioners are more likely required to speak English than not, an idea supported by 40% of the data explicitly listing “English” as an essential skill in the job summary. Tencent had the most relevant job advertisements out of all three companies, followed by Alibaba (23%) and Baidu (17%). Tencent advertised most of its positions on Liepin, followed by the Tencent website and LinkedIn. All three companies advertise positions across the world. However, most jobs are listed in mainland China – usually in the city where the company's headquarters is located, with 28% of those positions being in the US and elsewhere.

4.2 EMPLOYEE VALUE PROPOSITION ELEMENTS

Baidu, Alibaba, and Tencent are responsible for attracting the best talent in the US, China, and elsewhere. This analysis is focused on evaluating and finding patterns among the three companies. The following is a detailed list of findings relating to each EVP element.

Compensation

Compensation can refer to a range of benefits. In the data collection process, only the numerical value of the salary was collected, alternatively listed as n/a (if omitted) or negotiable. The results have been collected and will be applied in the following ways: 1) what percentage of job adverts per company list a salary (excl. “Negotiable”) and 2) with each search explicitly looking in the range of 5-10 years of experience, what is the average salary per company? The only job recruiting platforms that shared salaries were Liepin and 51job. 73% of jobs from Baidu included a salary, 61% of job posts from Alibaba included a salary, and only 19% of jobs listed for Tencent included a salary. The average salaries¹⁸ per company are 1) Baidu –

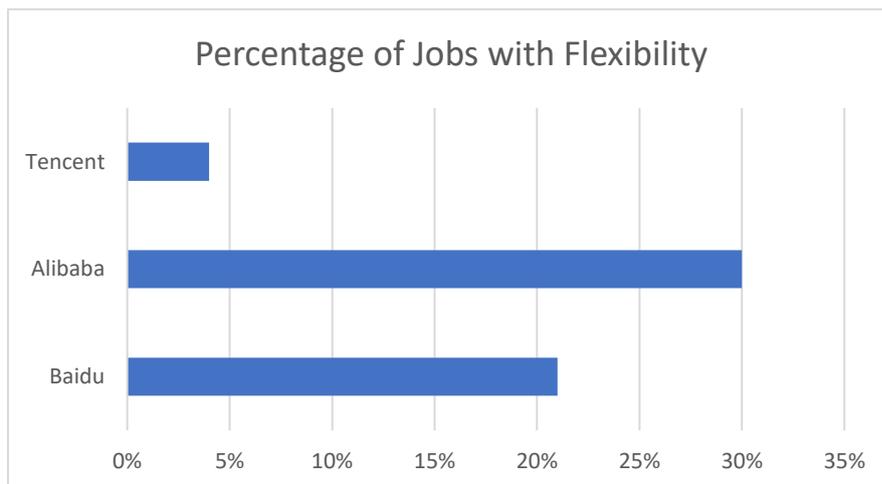
¹⁸ Salaries on Liepin are listed beyond the normal 12-month salary, so the average employee will get paid anywhere from 13-16 months.

43k RMB (~6,000 Euro p/m)¹⁹ 2) Alibaba – 49k RMB (6.950 Euro p/m) 3) Tencent – 48k (6.800 Euro p/m). Tencent offered the highest salary with 79k-100k per 15 months. A problem with determining which company pays the most is that we cannot determine what “negotiable” means. However, we could suggest that the salary is comparable to similar jobs.

Work-life balance

Work-life balance reflects how flexible the employer is in letting the employee work remotely or a combination of working from home and in an office. Below is a chart that lists which companies offered flexibility to employees. Tencent was the least flexible with remote and hybrid workers, and Alibaba was the most flexible.

Figure 1: Percentage of Jobs with Flexibility

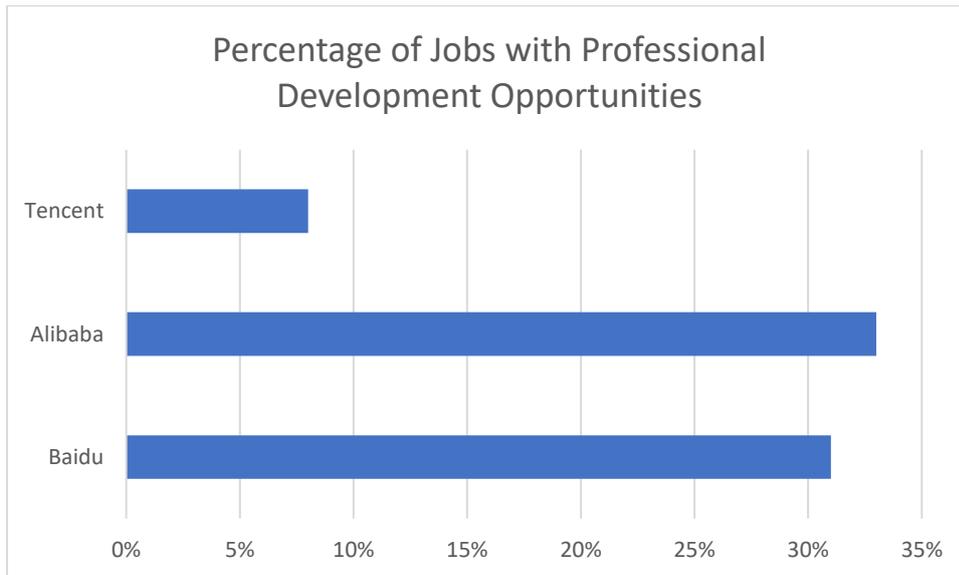


Stability

Stability was collected using words such as “training” and “big room for improvement.” These referred to the company’s investment for employees to continue professionally developing. Again, Alibaba takes the lead with Tencent not listing as many opportunities for professional development as Alibaba and Baidu.

¹⁹ Salary conversions were made on Google on May 10, 2022.

Figure 2: Percentage of Jobs with Professional Development Opportunities



Location

Environmentally sustainable offices have an impact on employee satisfaction. Tencent has the most awards per office, but Alibaba has listed ten sustainable offices in their carbon-neutral report. All three companies have ESG webpages. All three company websites were used to collect data in the chart below. Both Tencent and Alibaba have received energy certifications for offices indicating energy-saving measures. On the other hand, Baidu has only offered a pledge to be carbon neutral by 2030.

Table 10: Results – Location (Office Environment)

| | Baidu²⁰ | Alibaba²¹ | Tencent²² |
|------------------------------------|---------------------------|--|---------------------------------------|
| Reference to Sustainability | Y – Pledge (2021) | Y – Carbon Neutrality Action Report (2021) | Y – ESG webpage |
| Office Locations | N | Y – 10 offices ²³ | Y – Beijing & Shenzhen + data centers |

²⁰ https://esg.baidu.com/en/article/Baidu_Pledges_to_be_Carbon_Neutral_by_2030

²¹

https://sustainability.alibabagroup.com/download/Alibaba%20Group%20Carbon%20Neutrality%20Action%20Report_20211217_ENG_Final.pdf

²² <https://www.tencent.com/en-us/esg/environment.html>

²³ By the end of 2020, 10 campuses were built and delivered with 677,034 square meters of LEED certification.

| | | | |
|------------------------------|---|-----------------------|---|
| Energy Certifications | N | Y- LEED certification | Y - LEEDS BD+C NC gold certification for its unique building design and low-carbon concept (Beijing HQ), 2-star rating from China's Green Building Rating Program, the Shenzhen Green Building Gold (Shenzhen HQ) certification, LEED Gold Certification under BD+C: NC, and LEED Gold Certification under v4.1 O+M: EB |
|------------------------------|---|-----------------------|---|

Respect

Respect is more than just a salary; a company can show its employees that it cares. While this data is not conclusive of whether Baidu, Alibaba, and Tencent care about their employees or not, it indicates whether they do so as much via their website – an essential piece of brand awareness for any multinational. Baidu was the only company not to provide any information regarding employee benefits on their website, versus Alibaba and Tencent, which provided the same amount of information. While all three companies have offices worldwide, the majority of data collected in this paper was in Mandarin – and focused on jobs available in mainland China; thus, most of the measurements in this section are heavily China-focused. The information was clear and easy to access, supported with colorful multimedia.

Table 11: Results – Respect (Company Culture)

| | Baidu²⁴ | Alibaba²⁵ | Tencent²⁶ |
|---|---------------------------|-----------------------------|-----------------------------|
| Sports/Culture clubs | N | Y | Y |
| Gym/Fitness | N | Y | Y |
| Annual party/Chinese New Year packet | N | N | Y |
| Subsidies (rental, travel, loans) | N | Y | Y |

²⁴ http://home.baidu.com/home/index/join_us

²⁵ <https://talent.alibaba.com/>

²⁶ <https://www.tencent.com/zh-cn/employees.html>

| | | | |
|-------------------------------|---|---|---|
| Insurance | N | Y | Y |
| Family day/family care | N | Y | Y |
| Healthcare/doctor | N | Y | Y |
| Discounts | N | Y | N |

CHAPTER 5: DISCUSSION

This chapter will focus on answering subquestion 2: *How do Baidu, Alibaba, and Tencent compare in talent attraction?* Talent attraction can be measured in different ways, but the primary focus of this paper was to use employee value proposition (EVP). Baidu, Alibaba, and Tencent differ according to results from analyzing EVP elements. These elements felt reliable enough to act as a central point for data collection, but that does not mean that the elements in and of themselves are not without problems. The primary source for evaluating EVP elements was not an academic source. Although EVP is a universal term, it is also culturally subjective. This does not mean that it cannot be used to relate to prospective employees in China. As the articles in the BBC, Financial Times, and SixthTone all point out, the term 'Lying flat' has become popular with many young and overworked Chinese who feel that companies do not value them as people. Ideally, more research can be done on how Chinese employees feel about working at high-stress companies such as Baidu, Alibaba, and Tencent, especially in the much-needed field of artificial intelligence.

Salary is generally the traditional way of attracting talent. All three companies offer a competitive yet similar rate for the experience level. There is no reason to think that companies will significantly offer more or less compensation for the necessary skill level in the future. However, the concern for many Chinese citizens applying to companies is not a reference to

getting underpaid. Many Chinese, especially Chinese youth, focus on the other EVP elements when expressing dissatisfaction.

Work-life balance is essential for Chinese youth who spend their lives competing with one another. A company that can ensure employees' free time is successful and will be more appealing to top talent (or talent who can be selective about employment). Alibaba proved to be the most flexible, with many remote and hybrid work options. Baidu was not far behind, but Tencent seems to provide the slightest opportunity for flexible livelihoods. However, Tencent has the most appealing website to young people (at least from the author's perspective) and appears to have the best chance of attracting top talent. The discrepancy either lies in the fault of this study to account for certain variables or with the Tencent marketing team overpromising a healthy work-life balance.

Stability is thought by some to be the most sustainable element for achieving future growth. This is part of what the NGAIDP refers to as an "investment in human capital." The idea behind stability is that employees can grow with a company, which many Chinese people find attractive. Alibaba also takes the lead in this category, with Tencent lagging far behind. Tencent's website, however, does not seem to lend as much information on professional development as it does on work-life balance. This, to the author, seems a critical overlook by the company.

Lastly, respect and location are two unique elements of the Employee Value Proposition model. These elements portray a modern and changing society that values comfortability and openness. Tencent outranks both Baidu and Alibaba in both these aspects. This is significant because Tencent tries to lend itself to being more modern than its competitors, appealing to a more international and younger crowd of talent. However, Tencent may not compete in the more traditional fields of compensation and stability.

The three companies in this paper have a vital role in China’s AI ecosystem. However, whether these companies will adjust to the realities of a changing world is not yet understood or stick to bolstering salaries above all else.

The following discussion in this section focuses on variables. The first unaccounted variable is the recruiter. Different recruitment sites mean different recruiters, limited to the features available on the job recruitment websites. Furthermore, it is unknown how many people get recruited directly (via direct message on platforms like LinkedIn) versus how many people apply directly through a site like 51job or Liepin. The second unaccounted variable is COVID. We understand that work culture has changed during COVID, with the consensus among young people feeling dissatisfied with their work in countries like America and China. However, there is no statistical evidence on how COVID has affected hiring – and whether there is a hiring freeze or hiring surge, causing extremity in the data.

If this study were to be repeated, more data and data would need to be collected over a more extended time. The results do not tell us how BAT attracts talent compared with its competitors, so a replicate of this study could include such components. Additionally, this data was not analyzed statistically, which resulted in more subjectivity. To eliminate this, the author suggests using parsing software to gain broader samples and make more connections with data and variables.

CHAPTER 6: CONCLUSION

This section will focus on broader academic discussions surrounding the NGAIDP's purpose and goals. Although this paper has not wedged itself too profoundly into academia, a result of a lack of studies on AI talent in China, the arguments around the legitimacy of the NGAIDP can be reinforced. However, the argument that the NGAIDP is a legitimate policy does not

portend that the policy will live to achieve its goals. Academia centered on Chinese policy, or China's international political economics, leans into the ideology that China is grossly overstepping itself in advanced AI weaponry or is bound to its agenda. While I agree with China's agenda to become the world leader in AI by 2030, it is hard to balance their wishes with the changing agendas of younger people. For international and young Chinese employees, the future of working in China must be fair and comfortable.

In conclusion, I argue that China is at a disadvantage without prioritizing employee values. The relationship between the NGAIDP and the companies responsible for bolstering innovation needs to be stronger. Employees in 2022 want to see fundamental changes made in companies – changes that reflect employee value and purpose. While Tencent seems to be the most modern company of the three, it might be the aptest to become the poster child for China's AI initiatives. However, Baidu and Alibaba, while competing well enough with high salaries and stability, they lack the focus of attracting the “modern” employee. Of course, this is not to say that all three companies have challenges finding employees by lacking the proper elements. I am saying that for China to be the leader in artificial intelligence, they need to surpass the US and other countries that prioritize employee values. An American company would still be far more appealing to an overworked Chinese employee. Thus China will continue to lose what little talent they have – despite the immigration process in the United States having seemingly more minor bureaucratic hurdles. Still, there is little in the NGAIDP to lend itself to espousing a worker's actual value.

The research done in this paper was a valuable insight into how the three artificial intelligence national team members are attracting employees. Because there was a narrow view of how to attract employees, this author can only base success on the criteria outlined in this paper. This paper does not include the analysis of company performance or innovation rankings. To answer the overarching research question of this paper, this author argues that all three

companies are attractive to employees but will fall short of China's declaration of being the world leader in AI by 2030.

The research brought up some random questions – mainly about the companies. The structure of the company and its hiring department are all involved in the process, from the employee's first interactions to their last day of work. These insights have highlighted a growing cause for concern for the long-term sustainability in areas where these companies have labor shortages. Additionally, studies should be conducted comparing Chinese to US companies using the EVP model. Such studies could further prove the importance of employee value and argue that training will mean nothing unless companies can appreciate the incoming talent.

This research matters for the future of employers and employees alike. It also matters to the Chinese government, whose actions directly relate to these companies. If governments and companies want to attract the best talent, they must go beyond salary and invest in these employees long term.

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APPENDIX

I. Original Text and Translation (via Google Translate)

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| <p>4.加快培养聚集人工智能高端人才。</p> <p>把高端人才队伍建设作为人工智能发展的重中之重，坚持培养和引进相结合，完善人工智能教育体系，加强人才储备和梯队建设，特别是加快引进全球顶尖人才和青年人才，形成我国人工智能人才高地。</p> <p>培育高水平人工智能创新人才和团队。</p> <p>支持和培养具有发展潜力的人工智能领军人才，加强人工智能基础研究、应用研究、运行维护等方面专业技术人才培养。重视复合型人才培养，重点培养贯通人工智能理论、方法、技术、产品与应用等的纵向复合型人才，以及掌握“人工智能+”经济、社会、管理、标准、法律等的横向复合型人才。通过重大研发</p> | <p>4. Accelerate the training and gathering of high-end artificial intelligence talents.</p> <p>Take the construction of high-end talent teams as the top priority of AI development, adhere to the combination of training and introduction, improve the AI education system, strengthen talent reserves and echelon construction, especially speed up the introduction of global top talents and young talents, and form my country's artificial intelligence Talent Heights.</p> <p>Cultivate high-level artificial intelligence innovation talents and teams. Support and cultivate leading artificial intelligence talents with development potential, and strengthen the cultivation of professional and technical personnel in artificial intelligence basic research, applied research, operation and maintenance, etc. Emphasis on the cultivation of compound talents, focusing on cultivating vertical compound talents who integrate artificial intelligence theories, methods, technologies, products and applications, as well as horizontal compound talents who master the "artificial intelligence +" economy, society, management, standards, laws, etc. Through major R&D tasks and base platform construction, high-end artificial intelligence talents will be gathered, and a group of high-level innovation teams will be formed in several key areas of artificial intelligence. Encourage and guide domestic innovative talents and teams to strengthen cooperation and interaction with the world's top artificial intelligence research institutions.</p> <p>Increase the introduction of high-end artificial intelligence talents. Open up special channels and implement special policies to achieve the precise introduction of high-end artificial intelligence talents. Focus on</p> |
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| <p>任务和基地平台建设，汇聚人工智能高端人才，在若干人工智能重点领域形成一批高水平创新团队。鼓励和引导国内创新人才、团队加强与全球顶尖人工智能研究机构合作互动。</p> <p>加大高端人工智能人才引进力度。开辟专门渠道，实行特殊政策，实现人工智能高端人才精准引进。重点引进神经认知、机器学习、自动驾驶、智能机器人等国际顶尖科学家和高水平创新团队。</p> <p>鼓励采取项目合作、技术咨询等方式柔性引进人工智能人才。统筹利用“千人计划”等现有人才计划，加强人工智能领域优秀人才特别是优秀青年人才引进工作。完善企业人力资本成本核算相关政策，激励企业、科研机构引进人工智能人才。</p> <p>建设人工智能学科。完善人工智能领域学科布局，设立人工智能专业，推动人</p> | <p>introducing international top scientists and high-level innovation teams such as neurocognition, machine learning, autonomous driving, and intelligent robots. Encourage the flexible introduction of artificial intelligence talents by means of project cooperation and technical consultation. Coordinate the use of existing talent programs such as the "Thousand Talents Program" to strengthen the introduction of outstanding talents in the field of artificial intelligence, especially outstanding young talents. Improve the policies related to human capital cost accounting of enterprises, and encourage enterprises and scientific research institutions to introduce artificial intelligence talents.</p> <p>Build artificial intelligence disciplines. Improve the discipline layout in the field of artificial intelligence, establish artificial intelligence majors, promote the construction of first-level disciplines in the field of artificial intelligence, establish artificial intelligence colleges in pilot universities as soon as possible, and increase the number of doctoral and master students in artificial intelligence-related disciplines. Encourage colleges and universities to expand the content of artificial intelligence major education on the original basis, form a new "artificial intelligence + X" composite major training model, and attach importance to artificial intelligence and mathematics, computer science, physics, biology, psychology, sociology, law and other disciplines. The intersection of professional education. Strengthen industry-university-research cooperation, and encourage universities, research institutes, and enterprises to cooperate in the construction of artificial intelligence disciplines.</p> |
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| <p>工智能领域一级学科建设，尽快在试点院校建立人工智能学院，增加人工智能相关学科方向的博士、硕士招生名额。</p> <p>鼓励高校在原有基础上拓宽人工智能专业教育内容，形成“人工智能+X”复合专业培养新模式，重视人工智能与数学、计算机科学、物理学、生物学、心理学、社会学、法学等学科专业教育的交叉融合。加强产学研合作，鼓励高校、科研院所与企业等机构合作开展人工智能学科建设。</p> | |
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Source: “The State Council on Printing and Distributing Circular of the new generation of artificial intelligence development plan (NGAIDP) 国务院关于印发新一代人工智能发展规划的通知”

II. Policy Analysis Reference: Questions for Organisational Policy Analysis

Questions for Organisational Policy Analysis

- **Document production and location**
Why was the document produced? Where was the document produced and when? Where was it located? Was it easy or difficult to access?
- **Authorship and audience**
Who wrote the document? What is their position and do they have a bias? Who was it written for?
- **Policy context**
What is the purpose of the policy (for the organisation or the state)? Are drivers or forces behind the policy evident? What values underpin and guide the policy and are these linked to local or national strategic and quality issues? Are there multiple values that might create tensions?

- **Policy text**

How is the policy structured and how does the text provide evidence of its construction or development? What are the key elements of the policy and are they associated with local or national legal or regulatory requirements? Are there related procedures specified in the text that provide guidance for practice?

- **Policy consequences**

What is the intended overall impact of the policy? How is policy implementation intended to be monitored? How and when is the policy to be reviewed? How does the text draw attention to important aspects of practice related to the policy?

Source: Policy Document Analysis: A practical educational leadership tool and a qualitative research method. Educational Administration: Theory and Practice

III. Policy Analysis Reference: Policy Content Analysis Exercise

Policy Content Analysis Exercise

Researchers' Approach

A researcher could assemble several policies and then scrutinise these from the three perspectives provided in the exercise.

Policy purpose analysis

Closely read your policy document and identify words or phrases that refer to:

- The purpose of the policy
- The values that underpin or guide the policy
- The local or national strategic and quality issues

Policy construction analysis

Closely read your policy and identify sections, words or phrases that provide evidence of:

- The way in which the policy is constructed
- The component elements of the policy (check compliance with legal or regulatory requirements)
- Responsibility for policy development
- The way in which constituents/stakeholders participated in development

Practice implementation and impact

Closely read your policy and identify words or phrases that relate to its actual implementation and in addition use your experience of the policy in practice (or seek views from others involved in its implementation) to comment on:

- Its overall impact
- Current strengths and positive aspects of the policy in practice
- Current concerns and negative aspects of the policy in practice

Source: Policy Document Analysis: A practical educational leadership tool and a qualitative research method. Educational Administration: Theory and Practice