MNCs’ R&D talent management in China: aligning practices with strategies

Lydia Qianqian Li
Shanghai University, Shanghai, China
Katherine Xin and Vlado Pucik
China Europe International Business School, Shanghai, China, and
William X. Wei
School of Business, MacEwan University, Edmonton, Canada

Abstract

Purpose – This paper aims to propose practical recommendations in accordance with the strategic roles played by research and development (R&D) in multinational companies (MNCs).

Design/methodology/approach – This study applies a qualitative method to investigate the talent management (TM) practices implemented in MNCs’ R&D units.

Findings – The findings identify four R&D strategies and four sectors of TM practices. Furthermore, there exists an alignment between R&D strategies and TM practices.

Research limitations/implications – This paper has several limitations. This qualitative research is exploratory, and larger samples or quantitative methods are needed to ensure the wider applicability of the findings. When possible, longitudinal studies yield superior results in revealing the evolving strategic roles of R&D subsidiaries and their TM practices. The authors used China as the research context, and similar studies in other emerging countries with active R&D activities are required to further validate or complement the findings in this study.

Practical implications – This study has some practical implications for companies with regard to aligning their TM practices with R&D strategies.

Originality/value – R&D units play an increasingly significant role in MNCs and TM is a key issue. However, there is a lack of TM research focusing on R&D employees by taking strategies into account.

Keywords Talent management, R&D strategies, Qualitative research, China

Paper type Research paper

1. Introduction

As the world enters a “knowledge economy,” the strategic role of R&D in multinational company (MNC) subsidiaries gains increasing significance. An MNC’s subsidiaries play a crucial role in its innovation activities and global competitiveness (Rugman and Verbeke, 2001). Innovation has long been the key to MNCs’ global business success (Frost, 2001). Thus, the development of R&D activities and the improvement of global diffusion of innovations are strategic issues for MNCs’ success in the globalized business environment (Collings et al., 2009; Li et al., 2013). In consideration of the important role played by R&D in MNC subsidiaries, previous research has examined factors that facilitate the creation, adoption and diffusion of innovations by the subsidiaries of MNCs, such as organizational attributes (Ghoshal and Bartlett, 1988), sources of knowledge (Almeida and Phene, 2004; Frost, 2001;
Phene and Almeida, 2008) and human resource management practices (Collings et al., 2009).

Talent management (TM) is one of these aforementioned factors. Talent is both high-value human capital that are pivotal assets to a company and high-uniqueness human capital that cannot be easily copied by competitors (De Vos and Dries, 2013). Accordingly, TM refers to “activities and processes that involve the systematic identification of key positions which differentially contribute to the organization’s sustainable competitive advantage, the development of a talent pool of high potential and high performing incumbents to fill these roles, and the development of a differentiated human resource architecture to facilitate filling these positions with competent incumbents and to ensure their continued commitment to the organization” (Collings and Mellahi, 2009, p. 305).

Recent research shows that TM is a crucial issue in various working environments with high talented staff, e.g. in universities (Saddozai, et al., 2017). Given the importance of talent in R&D works, TM has become a national strategy for some countries, e.g. China (Normile, 2018). For companies, the availability of skilled and talented engineers and scientists drives R&D investment in emerging host countries (Chen, 2007), and the recruitment of people with high potential is the foundation for knowledge creation, innovation and competitive advantages (Sommer et al., 2017). Emerging markets create new sources of R&D talent – a strategic priority for many firms, particularly those in high-tech industries (Li et al., 2013). Gong (2003) suggested that the participation of local talent in subsidiary R&D activities may contribute to a more heterogeneous staffing composition and more diverse sources of innovation. However, subsidiaries of MNCs carry out different tasks, including creation, adoption and diffusion, during the various processes through which innovations are created and institutionalized (Ghoshal and Bartlett, 1988). Moreover, the role of a particular subsidiary might shift over time (Birkinshaw and Hood, 1998), and MNCs allocate innovation activities in different emerging markets with different strategies, depending on the product market opportunities and market conditions (Jha et al., 2014). Given the strategic role of R&D, the significance of TM practices and the diversity or evolution of R&D strategies, this study is guided by the following questions:

Q1. What are the R&D and TM practices of MNCs’ subsidiaries, and are there any noteworthy differences across the various R&D strategies?

TM practices are designed to align with organizational characteristics (Dries, 2013), following a “best fit” approach (Garrow and Hirsh, 2008). Existing research on TM has not offered much insight on this issue but has indicated the value of studying it. An organization’s goals and strategy play a role in explaining the TM process (Cooke et al., 2014), while the failure to appreciate how TM supports business strategies impedes effective TM (Cooke et al., 2014). Thus, coordination, integration and alignment of effective TM with business strategy should be further investigated (McDonnell et al., 2010). The present study aims to address this question by exploring TM practices in MNCs’ subsidiaries that fulfil different strategic roles in their global innovation networks.

In realizing this goal, the present study contributes to the existing body of literature by bridging several gaps. First, more systematic studies are required to identify the good practices that have emerged and what models may be suitable for application across different organizational settings (Cooke et al., 2014). However, existing research has not investigated how to align TM practices with subsidiaries’ strategic roles. Second, existing studies focus on one specific domain of TM practices, namely, staffing (Collings et al., 2009; Li et al., 2013). Further exploration is required to understand how MNCs can localize, attract and integrate a highly skilled workforce to their organizations (Hartmann et al., 2010). Third,
few investigations into global TM have identified the best practices for the attraction, onboarding, development, appraisal, motivation, retention and/or redeployment of professional talent (Tymon et al., 2010). Finally, MNCs’ subsidiaries distinguish between three types of “talent pool”: technical, leadership and executive (i.e. top-level leadership) talent (McDonnell et al., 2010). However, TM studies have focused on identifying leadership talent, while fewer have examined the other talent pool types (Church and Rotolo, 2013; Gallardo-Gallardo et al., 2015). This study focuses on technical talent in R&D subsidiaries of MNCs in China and identifies TM practices aligning with strategies, thus helping to fill those gaps.

The present study first reviews the existing literature on TM and proposes the research question. Adopting China as the research context, this study conducts a qualitative analysis based on data from focus groups and in-depth interviews, from MNC’s R&D units in high-tech industries. It identifies four types of R&D strategy, the most commonly applied TM practices across these strategies, and specific practices that are applied within a certain strategy. The paper then goes on to discuss the theoretical and practical implications of the research findings.

2. Talent management and the research question

As a phenomenon-driven research area, characterized by the “war for talent” proposed in 1997 by McKinsey (Chambers et al., 1998), academic literature on TM has proliferated since 2010 (Gallardo-Gallardo et al., 2015). From a resource-based perspective, talent may be defined as high-value human capital that constitutes pivotal assets for a company and highly unique human capital that cannot be easily replicated by competitors (De Vos and Dries, 2013). Accordingly, TM entails a range of activities and processes, including the identification of key positions, the development of the talent pool, and the development of human resource architecture to ensure that those positions that are identified are filled with competent talent and that this talent remains committed to the organization in the long term (Collings and Mellahi, 2009).

Concurrent with global business development, the issue of global TM has also received scholarly attention. Global TM refers to:

All organizational activities for the purpose of attracting, selecting, developing, and retaining the best employees in the most strategic roles (those roles necessary to achieve organizational strategic priorities) on a global scale (Scullion et al., 2010, p. 106).

Key considerations in global TM are the variations in different organizations’ global strategic priorities and the national contexts within which they operate: it is crucial that global strategy as a whole is combined with local responsiveness.

As indicated by previous studies, there is a lack of empirical research based specifically on human resources (HR) TM practices, which are important to the operation of MNCs (Gallardo-Gallardo et al., 2015). The investigation of TM issues by adopting a HR focus is regarded as a “practices approach” (Collings and Mellahi, 2009). The practices approach is one of the four generic philosophies that pertain to TM and associates TM with the presence of key HR management practices (Scullion et al., 2010).

The practices approach acknowledges the need for a dedicated set of advanced and sophisticated practices (Sparrow and Makram, 2015). It is consistent with the argument that HR practices should form part of a broader and coherent system, aligned with business strategy (Silzer and Dowell, 2010). Globally, TM is aimed at retaining the quality and quantity of talent in the global context (Farndale et al., 2010; Hartmann et al., 2010). HR practices in this context are aimed at attracting, developing and retaining individuals,
usually those with high potential, high performance, or who constitute high-level human capital (Stahl et al., 2012), to be aligned with the organization’s strategic intent (Scullion et al., 2010). Therefore, we propose the following research questions (RQs):

- **RQ1.** What types of R&D strategies do MNCs adopt in China market?
- **RQ2.** What themes of TM practice do MNCs apply in their R&D units?
- **RQ3.** Are these R&D TM practices aligned with the R&D strategies?

### 3. Methods

The present study aims to explore how and why R&D MNC subsidiaries manage their talent differently according to the diversified strategic roles of those subsidiaries. As Yin (2003) pointed out, “case studies are the preferred strategy when ‘how’ or ‘why’ questions are being posed” (p. 1), and a multiple-case study approach was adopted in the present study. In the following section, we detail our study’s sample, the data collection process, interview protocol and data analyses.

#### 3.1 Research context and sample

China has long been a key destination for worldwide foreign direct investment (FDI), with several MNCs having set up innovation centres in China. In a bid to attract attention, some R&D conducted in China progressed beyond tactical and adaptive concerns, and became genuinely strategic and creative (Sun and Wen, 2007). Meanwhile, talent is a key element in determining the success of MNCs in China (Yeung et al., 2008). Thus, China presents a fruitful research context with various MNC innovation centres from countrywide that call for corresponding TM practices. Few empirical studies have hitherto applied Chinese data in global TM literature (Gallardo-Gallardo et al., 2015). Therefore, China is not only an appropriate context for study but also highly significant in current research concerning TM in R&D subsidiaries of MNCs.

As suggested by Patton (1990, p. 182), cases should be “selected for the purpose of elaborating and deepening initial analysis, seeking exceptions, and testing variation”. Thus, after reviewing relevant literature on different sampling methods, purposive sampling was applied to identify the cases which fit our research context and questions well. Following the criterion strategy for purposive sampling from Patton (1990), we first targeted cases that satisfied important predetermined criteria:

- first, operation in the Chinese market with R&D subsidiaries in China;
- second, a core business in industries associated with intensive R&D investment; and
- third, being a leading global player in those industries.

Having identified a range of MNCs meeting these criteria, we approached their subsidiaries or headquarters operating in China, via various contacts. All of these samples are from the past five years. Finally, ten MNCs having subsidiaries or headquarters in China were selected for this multiple-case study, the key characteristics of which are shown in Table I.

#### 3.2 Interview protocol and data collection

The authors and one research assistant designed the interview protocol and the data collection process. To establish the interview protocol, we first referred to literature concerning TM and identified some initial open-ended questions (Table II) to guide the
focus group discussions, e.g. what challenges do you currently encounter with regard to R&D TM in China? What strategic role does your R&D play in China? What did your company do to deal with those challenges? Then we conducted three rounds of focus group interviews to elucidate the key concerns and challenges facing MNCs and local companies with regard to R&D TM in China. The interviews commenced with these initial open-ended questions; further questions ensued as they arose organically from the respondents’ answers or discussions. Each focus group interview included six to eight respondents comprising corporate executives, the R&D head, the HR head, R&D managers and HR managers. These interviews usually had two hosts and one or two observers.
After three rounds of discussion, we developed a semi-structured interview guide aimed at eliciting information about the strategic roles of R&D subsidiaries in China and their TM practices. The semi-structured interview guide required the respondents to address the following key questions or issues (Table II):

- **The R&D footprint of the company**: that is, numbers, locations and reasons for the specific locations of R&D sites in China, and whether the R&D function is designed to be stand-alone or in combination with other functions;
- **Organization facts**: the organizational structure of the R&D teams; whether the reporting line is of global, regional or local type;
- **TM practices**: how to gain access to and attract R&D talent? What TM programs are in place to manage R&D talent? What is the performance management system within the company? What tools are available for talent retention?

The specific questions asked of each respondent were selected based on that respondent’s particular role. Open-ended questions were allowed and we were careful not to “lead the witness”. Those open-ended questions were asked by the researchers when they felt that there were any needs for explanation or worth further exploration according to the respondent’s previous answers.

Accordingly, individual in-depth interviews that followed this interview protocol were conducted for data collection. The majority of interviews were conducted face-to-face and supplemented by telephone interviews where necessary owing to limitations of time or distance. As these companies typically use English as working language, the interviews were conducted in English. Most follow-up interviews took place over the telephone. We interviewed a total of 38 respondents dispersed throughout the ten selected companies covering several industries. Some had previously participated in the focus groups. On average, there were three to four respondents from each company, and these usually consisted of executives, HR directors or managers and R&D directors, managers or specialists, with a diverse range of demographics (average age was 34.7 years, ranging from 28 to 45; 54 per cent were male; and average work experience was 11.5 years). Each interview lasted an average of approximately one hour and a half. All were digitally recorded with permission, transcribed verbatim over the following week, and checked for accuracy prior to analysis. During the data collection period, the interviewers met regularly to tentatively analyse the data from the conducted interviews, and to discuss whether to the interview questions should be adjusted when necessary to improve the follow-up interviews. Meanwhile, we adopted a triangulation approach (Yin, 2003), using internal websites and documents to supplement the semi-structured interviews.

### 3.3 Data analysis

Our analysis was guided by the principle that “it is the connection with empirical reality that permits the development of a testable, relevant, and valid theory” (Eisenhardt, 1989, p. 532). We analysed our data to identify the theoretical categories including themes, first-order codes and second-order codes of TM practices in the MNCs’ R&D subsidiaries, using theme analysis that followed the main steps described by Miles and Huberman (1994) and applied by Chuang et al. (2015). Our data analysis took place over several steps in three stages, the first of which aimed to identify major themes based on the interviews, the second of which was aimed at identifying first- and second-order codes within each theme and the third of which consisted of validity checks. Finally, the theoretical categories of our study were
identified as the research results. These are discussed further in the final section of this paper.

- **Step 1: Making a contact summary sheet.** As recommended by Miles and Huberman (1994), we created a contact summary sheet to record the main themes that emerged from each interview. A theme was defined as a recurring topic of discussion that captured an interview’s central ideas (Chuang et al., 2015), such as “hiring talent”, to offer an example from our research. After each interview, one of the research team created the contact summary sheet, and a further two researchers checked it against the interview transcripts to ensure the identification of all valuable themes.

- **Step 2: Creating a complete theme list.** The contact summary sheets from each interview were synthesized into one complete theme list. Unique themes identified within each interview were noted in addition to commonly identified themes that had emerged from all 38 interviews. Each identified theme was coded for further analysis. Some examples of themes that emerged are “access and attraction”, “training and development” and “performance management”. For empirical observation purposes, the transcripts from these interviews were coded based on an iterative process whereby themes from the literature were compared with themes emerging from the data. This process was carried out first by one of the research team members and then discussed with the other authors to determine the final coding structure and ensure validity. After this step, with the major themes having been identified, the first stage of our analysis was complete.

- **Step 3: Identifying first- and second-order codes.** The next step was the identification of first- and second-order codes within each theme (Strauss and Corbin, 1998). During the first-order coding stage, we identified provisional first-order codes. Then we conducted axial coding (Strauss and Corbin, 1998) to identify second-order codes by comparing the provisional first-order codes. Simultaneously, we inspected the provisional second-order codes across the themes that had emerged to ascertain whether there were any potential underlying frameworks or cross-thematic relationships among the second-order codes. For these analyses, we focused on the informants’ descriptions of R&D strategies and TM practices, and the alignment between the two. All theoretical categories are presented in Table III.

- **Step 4: Validity checks.** Adopting a triangulation approach (Yin, 2003), we used data from observations and internal websites and documents to supplement the data from the semi-structured interviews and thus to check the validity of our study. For a final check on the accuracy of our findings, we presented our findings, particularly the visual map, to several HR or R&D heads for confirmation of what we had found and to collect any relevant new insights or details. The findings are presented in the next section, including detailed descriptions of each theme.

### 4. Findings

We identified five key themes, including one theme pertaining to R&D strategy and four themes pertaining to TM practices in Chinese R&D subsidiaries: attraction and access, training and development, performance management and talent retention. Furthermore, we detected an alignment between different R&D strategies and TM practices, as shown in Figure 1.
4.1 R&D strategies

In previous studies about the global MNC network, several typologies have been proposed that suggest different roles and responsibilities for subsidiaries. Combining an MNC’s geographic scope and the roles played by their foreign subsidiaries in innovation, Birkinshaw and Hood (1998) proposed three strategies that are determined by head-office assignment, subsidiary choice and local environment determinism, including:

1. **Paternalism**, in which the MNCs have innovated in the home country and rolled out new products in the world market;
2. **Expansionism**, whereby the MNCs set up “scanning units” to tap ideas from key foreign subsidiaries and build R&D sites or labs in foreign markets; and
3. **Liberalism**, which holds that innovation can emerge anywhere, and that more creative and genuine innovation emerges from the edges of the corporation than from the centre.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Second-order codes</th>
<th>First-order codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D strategy</td>
<td>Local adaptation</td>
<td>Serve local market with existing or adapted products</td>
</tr>
<tr>
<td></td>
<td>Local innovation</td>
<td>Serve local market with developed or innovated products</td>
</tr>
<tr>
<td></td>
<td>Global innovation</td>
<td>Serve global market with existing or adapted products</td>
</tr>
<tr>
<td></td>
<td>Reverse adaptation</td>
<td>Serve global market with developed or innovated products</td>
</tr>
<tr>
<td>TM practice</td>
<td>Hiring local talent</td>
<td>Hire new graduates from Chinese universities</td>
</tr>
<tr>
<td>Access and attraction</td>
<td>Attracting global talent</td>
<td>Hire experienced professionals from the industry</td>
</tr>
<tr>
<td></td>
<td>Selection criteria</td>
<td>Attract global experienced professionals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attract Chinese graduates from international universities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Select experienced returnees and expatriates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Select top or good-enough talent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Choose between technical competence and other criteria</td>
</tr>
<tr>
<td>Training and</td>
<td>T&amp;D programmes for new staff</td>
<td>T&amp;D programmes for new staff from university</td>
</tr>
<tr>
<td>development</td>
<td>T&amp;D programmes for developing long-term potential</td>
<td>T&amp;D programmes for new staff from industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T&amp;D programmes for developing expertise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T&amp;D programmes for developing leadership</td>
</tr>
<tr>
<td>Performance</td>
<td>Objectives identification</td>
<td>Trade-offs between or alignment of long-term and short-term objectives</td>
</tr>
<tr>
<td>management</td>
<td>Performance evaluation</td>
<td>Evaluation with ranking</td>
</tr>
<tr>
<td></td>
<td>Deal with poor performance</td>
<td>Evaluation based on competences and goal achievement</td>
</tr>
<tr>
<td></td>
<td>Rewards and recognition</td>
<td>Evaluation combining individual and team results</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Position change or dismissal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rewards for patent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rewards for teams and individuals</td>
</tr>
<tr>
<td>Talent retention</td>
<td>Financial incentives</td>
<td>Targeted salary increases</td>
</tr>
<tr>
<td></td>
<td>Non-financial methods</td>
<td>Recognition packages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multiple career tracks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Job rotation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Global interface</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Work-life balance</td>
</tr>
</tbody>
</table>

Table III. Theoretical categories: themes and codes
There are also several R&D strategies at play within an MNC’s different globalization phases (Govindarajan, 2009) as follows:

- R&D and production in the home country for global markets (belonging to the “Paternalism” phase);
- R&D in the home country and production in host countries according to local needs (belonging to the “Paternalism” phase, but addressing the challenges to monopoly in innovation);
- R&D and production in the local market for local needs (belonging to the “Expansionism” phase); and
- R&D and production in both the host countries and in the larger world (belonging to the “Liberalism” phase).

Based on our interviews and analyses, we identified four types of R&D strategy employed by MNCs in China, which may be viewed in combination with the three-phase subsidiary evolution framework (Birkinshaw and Hood, 1998) and the different stages identified in the application of R&D strategies (Govindarajan, 2009). This categorization has two indexes: whether the R&D unit in China serves the local market or the global market, and whether it focuses on existing product adaption (i.e. original R&D in the home country) or new product development (i.e. R&D in China). Accordingly, we identified four types of innovation strategy, as follows:

(1) **local adaptation**, that is, the supply of existing products that have been somewhat adapted to the local Chinese market;

(2) **local innovation**, the development of new products from the outset for the local Chinese market.
(3) reverse adaptation, the development of products for the Chinese market that subsequently serve overseas markets after some adaptation; and

(4) global innovation, the development of new products for global markets that require a completely integrated innovation platform and network in the company worldwide.

The R&D strategies of most MNCs are in the local adaptation stage, while some companies have entered the second and third stages, local innovation and reverse adaptation. Only Chinese MNCs have attained the highest level of R&D strategy, global innovation.

4.2 TM practices across R&D strategies

Several themes emerged from the data as R&D TM practices, including access and attraction, training and development, performance management and talent retention. We identified both common practices across all strategies and special practices unique to each. The common R&D TM practices will be discussed first.

4.2.1 Access and attractions. Access to and the attraction of potential candidates emerged as a theme in TM practices. Consistent with our definition of R&D TM, this step involves the systematic identification of key positions that contribute in various ways to the creation, adoption and diffusion of innovation within a company. In practice, companies have access to global and local talents from either the campus or the industry.

Localization of human resources is crucial for MNCs operating in China, due to their inherent advantages in terms of local knowledge and labour cost. In seeking qualified local R&D talent, companies tend to prefer recent graduates from first-class Chinese universities. Recent graduates have distinct advantages: as described by the R&D Head of COM5, "Graduates can secure employment very swiftly. Having been placed on the frontline at work, with the help of a mentor, they can become proficient in their jobs after just one or two projects."

Most companies establish strong connections with universities, and have internship programmes to attract the best recent graduates. Companies also recruit experienced R&D staff from the industry. They may not require much training and can bring new knowledge to the company. An R&D team leader in COM3 said, "In this three-year-old team, around 50 per cent are experts with one or two experiences". It is noteworthy that the preference between these two sources alternates. The HR specialist of COM2 told us that, in previous years, they "preferred recent graduates, but now found that actual working experience and familiarity with the industry are more important".

Global talent is also crucial for MNCs to gain better expertise and global mind-sets to help improve R&D locally. Companies prefer to recruit Chinese graduates from international universities via internship programmes. COM4 runs "a highly prolific internship program worldwide", which has "a global database recording an intern's performance and evaluation". COM1 also offers global internship programmes aimed at attracting fresh overseas graduates, e.g. one of our respondents had worked for two years as a post-doc student at MIT before joining the company in China.

Experienced returnees and expatriates also constitute a key source of talent. Some Chinese emigrants choose to return to China in their 40s, in search of better career opportunities. The CTO of COM3 is one such example. He has served the company for 11 years. He mentioned, "Most R&D leaders have overseas work experience. Most are Chinese, who have over five years' experience of education and work overseas". COM6 adopted another approach in hiring global talent: as described by the R&D Director:
We usually look for talent between the age of 25-40. Instead of hiring foreign expats, individual business units tend to attract people with overseas job commitments, who do not wish to abandon their careers abroad to come to China. We pay them labour fees without other fringe benefits attached.

4.2.2 Training and development. Training and development also emerged as an important theme in R&D TM practice. It is challenging to train new staff. Recent graduates have usually had no opportunities to apply their knowledge practically in campus settings. Moreover, they are required to become acquainted with the new company’s culture, systems and processes and the team. To bridge the gap between university and company, COM4 designed a one-year R&D trainee program aimed at turning fresh graduates into junior engineers. COM2 “sends them to the workshop first instead of the technical centre”, and built a professional school to train R&D staff members.

For new staff from industry, companies either use training schools or the learning-by-doing method. COM2’s mandatory T&D programme incurs considerable costs in operating its self-owned training school, but the company believes that the benefits of hiring experienced R&D people and training them justify the expense. COM3 believes in learning by doing. As described by an R&D team leader of COM3, “After two weeks of HR training and one week for teamwork, we send them to perform basic tasks”. Companies also have systems that quickly involve new members in their jobs and integrate them effectively into company culture.

Besides these practices, companies view R&D talent as a core asset, and make regular efforts to identify and nurture it. Structured training systems help the R&D people to develop their potential. COM1’s apprenticeship programme is an example. This company sows the seed abroad and reaps the fruit in China. It has an apprenticeship programme providing scholarships to overseas Chinese students in its home country. When they have completed their studies abroad, they are often inclined to work for the company back in China.

Companies also train the R&D talent to develop leadership skills. The R&D Director of COM7 explained the reason, “To attract the best Chinese R&D staff, we have to offer the best Chinese leader. Good R&D is about leadership”. Thus, COM7 leverage educational resources, including top business schools in China, to help improve the leadership skills of R&D people. Two-thirds of the tyre industry’s innovation came from COM7. Efforts in leadership development may be key to that performance and its success in the past over 100 years.

4.2.3 Performance management. Performance management of R&D staff is a particularly difficult task. Companies usually first specify their desired goals and objectives, and then evaluate team or individual performances, and finally give feedback and evaluation rewards. We found the first point to be more strategy specific, while the other two share common practices across strategies. Here, we discuss the common practices across strategies.

Due to the characteristics of R&D projects, companies factor competencies, behaviours and results into performance evaluation. COM7’s HR specialist told us, “Even people with high competence may not deliver good results. Thus, we measure performance, competency, and potential”. A more complicated index is applied for R&D managers. COM4 measures their performance both on both technical and managerial facets, e.g. “strengthening members’ capabilities” or “giving new ideas to the team”. It differs significantly from the traditional balanced scorecard method. COM4’s HRD told us, “In traditional balanced scorecard evaluation, managers and members usually became narrow-minded in relation to the
target, which is counter-innovative in R&D projects”. They thus apply the new index to promote a high-performance culture.

Ranking is a popular method of evaluating performance. COM6 gives their R&D team overall performance rankings, to “better interpret their competency”. However, acknowledging that “ranking is not effective with projects requiring cooperation”, they evaluate both behaviour and results. Even when the result is unsatisfactory, team members’ cooperation with others does not go unrecognized. COM4 uses a performance index to differentiate between high-achievers (20-25 per cent), key players (65 per cent) and performers requiring re-assignment (10 per cent). Potential for development over the next one to two years is also considered.

After evaluation, how a company addresses poor performance may be an issue. Currently, companies tend to adopt more flexible approaches. COM3’s practice a decade ago was to ask people ranked within the last 5 per cent to leave the company. Subsequently, however, managers realized that they needed a diverse pool of employees, and that not everyone must be a star performer. Neither does a “firing” practice of this nature align well with Chinese culture. Currently, with the exception of extremely poor performers, the company offers opportunities to adjust the work content while also implementing salary changes. In COM4, the HRD or HR specialists conduct one-on-one confidential dialogues at the middle and the end of the year to give feedback to their R&D team following evaluation.

Salary remains the primary means of rewarding good performance. Companies offer rewards in recognition of substantial contributions made by their R&D teams. COM8 places special emphasis on R&D talent in China, by offering a special salary structure facilitating higher salaries than those available in other units. Intellectual property (IP) awards are also a key method of acknowledging outstanding contribution. COM3 has three key programmes for outstanding R&D people, with a budget of 1 million RMB for each first-ranked member to use over 7 years. Some companies reward all team members to praise an individual’s contribution. The HRD of COM5 offered the following example: “Dr Chen won an international prize in arithmetic competition, and all of his team members were rewarded with a 20 per cent salary increase.”

4.2.4 Talent retention. All companies in our sample included the retention of the best R&D talent high on their senior management agenda. Financial incentives and other strategies have been found to be successful in retaining R&D talent. Financial incentives include competitive salary and special recognition packages. Companies avoid regular compensation schemes aimed at retention of talent. They aim to pay generously and competitively, but not so high as to create a salary spiral. COM5 once “found it was difficult to recruit people to develop a new system”. After analysis, they transferred some people to the new R&D unit, with a 10 per cent salary increase. R&D employees in COM1 can choose between global compensation standards and the local one, which is competitive within the market.

In addition to salary, a special recognition package may be offered specifically to retain key people. COM3 offers allowances for high-level engineers, stock options for top managers and recognitions for young employees. The HRD of COM3 commented, “the company obtains a turnover of less than 5 per cent with top talent even in such a ‘hot’ market as Shanghai”. COM5 rewards all team members based on individual achievement.

Non-financial incentives are more flexible and include multiple career tracks, job rotation, global exposure, meaningful work and work-life balance. All the companies included in the study have multiple career tracks, to offer R&D employees dual- or triple-track career opportunities. Compensation is similar at the same levels on each track. COM2 also implements a unique practice of “setting an in-between track of managerial and
technical tracks, and rendering greater flexibility”. Job rotation is also effective as it offers internal mobility. However, such rotation is limited. The HRD of COM3 said, “We allow the R&D people to change track once, not too much”, to maintain stability.

Global exposure works by allowing R&D employees to participate in global projects. The Executive Engineering Leader of COM9 said, “We have ‘earned’ many R&D projects to serve the global market. We can provide top R&D talent with high global exposure to develop their cutting-edge competencies”. The R&D Director of COM6 confirmed that they “provide global opportunities to employees to attract and maintain them”. An R&D member of COM5 noted “We benefit from their (i.e. foreign colleagues’) ideas and thoughts to identify better solutions via telephone meetings, or email communications”.

Meaningful work content and a good work-life balance environment are also important. Enabling top talent to participate in cutting-edge R&D is one means of making their work more meaningful. COM1’s top researchers in China have opportunities to collaborate with colleagues from other R&D locations, such as Germany and the USA. Meanwhile, good working conditions and work-life balance convenience are key for R&D talent retention. State-of-the-art R&D facilities and flexible work organizations are helpful in providing enhanced work-life balance.

4.3 TM practices aligning with R&D strategies
Existing literature has shown that TM practices should be aligned with business strategies (McDonnell et al., 2010; Silzer and Dowell, 2010). Our research supports this view.

4.3.1 TM of local adaptation strategy. Local adaptation is the most common R&D strategy of MNCs in China. Most of these R&D units focus more on “D” than on “R” activities. Research denotes scientific investigation, while development implies the adaptation, standardization and industrialization of research. This strategic positioning means that the company focuses on supplying existing or adapted products to local markets. This usually constitutes the first step of R&D in China. Companies that have adopted this strategy include COM2, COM6 and COM7.

As the GM of COM2 pointed out:

The Technical Centre (TC) in China focuses on ‘D’ rather than pure research. There is not that much research ongoing at the TC. The TC covers R&D, testing and validation. Researchers aim at lowering the cost and enhancing the competitiveness of their products to be sold in China. It is difficult to get international orders, and thus they focus on the local market.

Despite this status quo, COM6 is seeking to advance their R&D activities. Its R&D Director told us, “In previous years, we didn’t have real R&D in China [. . .] Now we are trying to create more projects for the Chinese market”.

COM7 is in the primary stages of local adaptation. The HRD of COM7 told us, “China’s market is small compared with that of the entire group, with sales revenue accounting for only roughly 5 per cent of the entire group’s”. Meanwhile, as noted by the director of their RDI (research, development and industrialization) centre, “The Chinese market is growing and we will need to set up new plants to meet demand”; however, “China has the industrialization part but not R&D”. Regarding industrialization, “Any established tyre technology brought into China must undergo strict testing before it can be applied to Chinese production in China”, according to by their director of RDI.

To fill their R&D positions, companies target good-enough candidates and apply verified selection criteria. Regarding hiring fresh graduates, the HRD of COM6 observed, “Although we cooperate with some top universities with strong backgrounds in chemistry, we don’t always need to recruit ‘top’ students”. Meanwhile, as COM6’s strategy is “not to depend too
much on the break-through technology, but to leverage the platform within the company”, they emphasize communication skills or leadership. The R&D Director of COM6 told us, “Good communication skills are necessary and we rarely hire someone over 40 owing to his or her lack of English language skills”. Also, its HR Director commented, “Our engineers may be inferior in terms of capabilities, but in terms of time schedules, they do well”.

COM7’s primary task is industrialization, so it usually hires designers from the market. Their “designers at the centre are like architects, both technologically and market savvy”, observed the RDI centre director. COM2 used to mainly hire people with bachelors’ degrees. Compared with companies in other strategic positions (e.g. COM3, around 60 per cent of whose R&D employees have masters or PhD degrees), COM2’s requirement is very basic: they focus on how well the candidates match with the team rather than their individual competencies.

4.3.2 TM of local innovation strategy. Local innovation is a further step towards adaptation in China, when MNCs find that adapted products are insufficient to satisfy Chinese customers, and that new products must be developed for the market. COM1, COM4 and COM8 offer examples of this strategy. In these companies’ R&D projects of those companies, while the importance of “R” is recognized, “D” remains dominant. An respondent of COM1 told us, “Our international colleges were sceptical about Chinese competence for nurturing R&D, as it would require at least 5 years of incubation. China thus prioritises the ‘D’ position”.

Accordingly, these companies’ research and development projects are kept separate. As a scientist working in COM1’s corporate research (CR) centre told us:

Most of the ‘D’ projects are based at individual business units where short-term products are developed for delivery in 3 years. Our CR division focuses on the development of the next generation of products, over 5 or even 10 years.

Its Shanghai-based CR centres is an example of designated research department in China.

COM4 aims both to be involved in the local innovation system and to contribute to global technical innovation. They are trying to enter the higher-level stages of reverse adaptation or global innovation. In COM8, the China R&D centre is part of the company’s seven global research hubs. According to their HRD, “To develop products for the local market, we implemented an ‘in-China-for-China’ strategy in the technical centre” and “for the China research centre, the company would value its fundamental research, e.g. a smart grid in China”. They try to serve the local market better by conducting more research.

Regarding TM practices, higher criteria are adopted for talent recruitment in those companies, including academic background, expertise, potential capabilities and international experiences. High potential is prioritized for fresh graduate recruitment. The HRD of COM4 told us, “We target university graduates with top academic credentials, high motivation, outstanding capability, and leadership ability. International experience is a plus”. COM1’s long-standing ties with both global and local universities and research institutions assist it in attracting top-level talent. Their HR specialist said, “Well-trained Chinese people from US and Germany are the main target of the company”. One scientist from among our respondents is an example of this type of experience trajectory: she obtained her PhD from one university in Germany and worked for two years as a post-doc at MIT before joining the company in China. She got the internship during her study in Germany and received a company-sponsored scholarship. As such, it felt natural for her to work for the company after graduation. Owing to the importance of both research and development in local innovation strategy, in COM1, “expertise and the capability to apply
expertise to projects are on top of the criteria list for R&D candidates”. All R&D members of this company possess at least a master’s degree, and roughly half were trained overseas.

Regarding TM, companies try to strike a balance between long-term and short-term goals. COM1 sets multi-year targets for its battery scientists to develop the next generation of lithium-batteries. This ensures that R&D researchers have sufficient opportunities to engage in fundamental research and to test products for commercialization. “To measure team performance”, one respondent from COM1 introduced:

We set the target for a project, and break it into several milestones as “sub-projects” to track and check. For example, we break one battery project into two sub-projects, one with a goal of extending an electric vehicle’s battery life to 250 kilometres and the other with the objective of charging the battery up to 75% in 15 minutes.

In calculating the revenue of a newly launched product, the R&D Director of COM6 adopts the following approach:

We usually measure revenue gained 24 months after the launch. We are working on persuading people to favor more challenging and advanced projects from quickly deliverable products. If we keep working on ‘low-hanging fruits, we will not move on in the long run.

4.3.3 R&D focus on reverse adaptation. A third stage of R&D in China is reverse adaptation. This refers to the R&D strategy whereby products developed for the Chinese market can be adapted to serve the international market. This strategy requires stronger R&D capabilities and a better-integrated global network. COM3 and COM9 were observed to implement this strategy. As observed by the CTO of COM3, “We are made in China, made for China, and made by China. Local customers are important”. He went on:

We do real research, not only applications. In China, local companies pay 5% of revenue to R&D while MNCs pay around 10%. We have paid 16-18% of the annual revenue on pure research in the last 3 years. High investment in R&D is necessary for differentiation.

COM9, a provider of jet and aircraft engines, is another example: its executive engineering leader told us, “Our teams are locally operated, for Chinese customer, using Chinese suppliers”. The company thus builds up an R&D centre in China that primarily serves the local market, while sometimes serving global clients.

Companies that adopt this strategy tend to have higher requirement criteria for R&D employees. COM3 employs a 270-strong R&D team, 60 per cent of whom have masters or PhD degrees. Further, international background is a plus for ordinary R&D people, and a prerequisite for R&D leaders. As explained by their CTO, “Most are Chinese with international education backgrounds and working experience. And we have overseas PhDs”. Candidates for leadership roles are required to have at least 5 years’ experience, and usually have 10 or 15 years’ experience.

From an organizational perspective, TM is more centralized. COM9 has a global research centre for basic research, and all research employees from various business divisions share this workplace. However, they have no financial relations division. The head of the aviation division told us, “All R&D divisions share the HR and legal functions. My team pays for the rent and services. R&D reports directly to the US headquarters”.

Companies usually implement flexible TM practices to manage and retain those more highly qualified talents. COM3 gives “poor” performers opportunities to change their position. The HRD of COM3 told us, “Our policies and resources are R&D oriented. People can move among subsidiaries. We take a talent inventory every year and the company encourage rotation”. There are two rotation options: real and virtual. Virtual rotation is usually reserved for top managers, who may travel to different departments for meetings.
and to help with problem-solving, with no title, often for half a year. The company also allows its R&D employees to switch tracks (i.e. among 3 career tracks) once. However, as their HRD noted, “We encourage them with an allowance to grow in the expertise track. If they move to the management track, however, there is no such allowance”. This policy confirms the company’s emphasis on research.

To encourage research and innovation, COM3 offers rewards for patents: a maximum of RMB 20,000 for the team and a maximum of RMB 8000 for each member. The atmosphere of openness in the company also helps to facilitate innovation and retain talent. As commented by an R&D leader in COM3, “Our atmosphere is open. Team members find it easy to discuss or communicate with one another. We help each other to make progress”.

4.3.4 R&D focus on global innovation. Global innovation is a strategy used in relation to R&D in China aimed at developing new products for the global market. It requires an integrated global innovation network. It is the highest level of R&D strategy in China, and over the course of our interviews, we did not find any foreign MNCs that have stepped into this quadrant as yet. Only a single Chinese MNC, the leading Chinese on-line entertainment company COM5, has attempted to adopt such a strategy. The reason may be that, for foreign MNCs, their R&D capability in China is as strong as that in their home countries. However, Chinese MNCs may adopt a global innovation strategy as a means of learning from their R&D centres in other countries, particularly developed countries.

Due to the high organizational requirements of such strategies, COM5 is faced with talent retention challenges. As its HRD told us:

Whether the company is operation- or innovation-orientated will influence the talent criteria, so it is confusing and challenging for HR. Moreover, the corporate body continually adjusts the orientation. Changes in organizational structure and corporate strategy usually lead to brain drain.

To address problems of this nature, COM5 attracts and retains R&D talent by various means. An R&D member told us the reasons he chose the company and stayed with it for years:

When the head-hunters found me, I was not very interested at first. Then, I discovered that some top engineers in the field work in the company, that my salary would be increased by 40%, and that the work content is very interesting. Besides, the working environment is good.

COM5 has a unique management system. They have a game-style, point-based and self-managed database for each member. In a typical computer game, players first choose a role. They will receive experience values (EVs) after finishing tasks or defeating an opponent. When their EVs reach a certain level, they can be promoted to the next level. Similarly, in COM5’s performance management system, when a person enters the company, he or she receives a basic EV based on their position. Subsequently, the more he or she achieves at work, the more points or credits he or she earns in his or her profile. This management style is attractive to R&D talent. As one respondent observed:

The game-playing system is very interesting. Every day I check my EVs and returns with regard to a project. It’s rather subjective and transparent. I can have reasonable expectations of my future. It’s fair.

It offers global interface opportunities for R&D employees, in support of the global innovation strategy. As described by an R&D member, “They (expertise abroad) are helpful. Many of them are richly experienced, with 10 or 20 years of work experience. We learn a lot from them”.
It is worth noting that, in spite of effective practices such as those described, the turnover rate of R&D talent in COM5 is around 10 per cent. This is higher than those of companies in other strategic positions. In the reverse adaptation quadrant, COM3 has a 5 per cent turnover rate. In the local innovation quadrant, the HRD of COM4 revealed, “Overall turnover rate among R&D staff is quite low; senior engineers and R&D managers in particular are rather stable”. The HRD of COM1 told us that they have a “very high” retention rate among R&D staff. The turnover rate of R&D people in COM8 is just around 6 per cent. For companies in the local adaptation quadrant, like COM7, the turnover rate is less than 3 per cent. The HRD of COM6 told us, “Our retention rate is relatively high. The turnover rate is around 5 per cent, and the figure was even zero in some years”. The challenges associated with higher requirements in high-level R&D strategic stages may be a crucial factor for this variation.

5. Discussion and conclusion
Our work identifies the key R&D strategies and R&D TM practices themes of MNCs operating in China. Results show that there are four kinds of R&D strategies, including local adaptation, local innovation, global innovation and reverse adaptation. In terms of R&D TM, common and specific practices have been adopted across these different strategies. Overall, MNCs in China adopted an integrated TM framework comprising access and attraction to talent, training and development programmes, performance management systems and talent retention practices. Each TM theme has several elements, which are found to align with the R&D strategies of the company, as shown in Figure 1.

Theoretically, first, this study contributes to the existing literature on TM by focusing on R&D talent. R&D activities and innovation diffusion are key factors for MNCs’ success in a globalized business environment (Collings et al., 2009; Li et al., 2013), and human resource management practices can help to facilitate the creation, adoption, and diffusion of innovations by subsidiaries of MNCs (Collings et al., 2009). To date, there has not been a thorough investigation of how MNCs’ R&D subsidiaries conduct TM in emerging markets. Our study contributes to the existing knowledge concerning R&D management, from the perspective of how talent may best be managed. This bridges the gap by adding to the few existing studies that focus on R&D TM in globally operated companies.

Second, the existing research focuses primarily on a specific domain within TM practice, namely, staffing (Collings et al., 2009; Li et al., 2013) and lacks any comprehensive study of TM in emerging markets (i.e. the best practices for the attraction, onboarding, development, appraisal, motivation, retention and/or redeployment of professional talent) (Tymon et al., 2010). The present study offers information about practices that are consistent with the work that is essential for the successful realization of TM (Collings and Mellahi, 2009), including access and attraction, training and development, performance management and talent retention.

Finally, we proposed and found that there exist some specific TM practices that align with companies’ global R&D strategies. Various subsidiaries fulfil different roles and responsibilities with regard to innovation (Bartlett and Ghoshal, 1989), and the role of a particular subsidiary might shift over time (Birkinshaw and Hood, 1998). Meanwhile, global TM should take into account an organization’s global strategic priorities as well as the national context to decide how talent may best be managed in the countries wherein they operate (Scullion et al., 2010). This study built a bridge between these two facets and argued that TM practices should be aligned with global R&D strategies. Furthermore, through analysis of the data gathered in interviews, we identified specific practices within each strategy. This theoretical contribution is consistent with previously applied “best fit”
approaches in TM literature (Garrow and Hirsh, 2008), and the belief that TM practices should be designed to align with (McDonnell et al., 2010; Silzer and Dowell, 2010) and support (Holbeche, 2009) the overall business strategy. We empirically validate this perspective and thus contribute to the existing literature on this issue.

Our study has some practical implications for companies with regard to aligning their TM practices with R&D strategies. For companies that adopt the local adaptation strategy, R&D units can attract experienced R&D talent from Chinese firms, exploiting the local talent pool, or recruiting new graduates from Chinese universities, with a “good enough” criterion. Training should be practical/applied and market-focused. Accordingly, speed- and cost-oriented performance objectives are important, and financial incentives are key retention tools. For companies that favour a local innovation strategy, R&D units should aim to attract “top” talent, including experienced returnees and expatriates, as well as Chinese graduates from international universities. International awareness and eagerness to explore emerging local market opportunities are key criteria in this quadrant. R&D centres should provide advanced training and global interfaces to develop their capabilities. Performance management teams should consider both business-results and technological mastery, with short-term, applied knowledge-creation criteria. Financial incentives, career path alternatives and international experience are all helpful strategies for talent retention.

Reverse adaptation requires an understanding of the global market. International awareness is critical for candidate selection, and international exposure is a major consideration for training and development. Both achievements and endeavours to improve the global application of research should be taken into performance consideration. Global exchange and visibility constitute the most essential tools for talent retention. Then, global innovation, therefore, requires a deep understanding of both local and global markets. Companies may recruit top graduates from international universities. International awareness, global perspectives and local knowledge are all important. In addition to the equal treatment of their business counterparts, global exchange, global visibility and global career paths are key for retaining top-tier talent.

Nevertheless, this paper has several limitations. This qualitative research is exploratory, and larger samples or quantitative methods are needed to ensure the wider applicability of the findings. When possible, longitudinal studies yield superior results in revealing the evolving strategic roles of R&D subsidiaries and their TM practices. We used China as the research context, and similar studies in other emerging countries with active R&D activities are required to further validate or complement the findings in this study. In conclusion, further research into R&D TM practices with diversified methods and contexts is recommended, given the increasing significance of R&D subsidiaries with regard to MNCs’ global business.

References


**Further reading**


About the authors

Lydia Qianqian Li is an Assistant Professor of International Business and Marketing at School of Management of Shanghai University in Shanghai, China. She holds her PhD from Fudan University and was previously a visiting scholar of International Institute for Management Development (IMD), Lausanne, Switzerland and University of Alberta, Edmonton, Canada. Dr Li’s research interests include global management and international marketing.

Katherine Xin is a Professor of Management, Bayer Chair in Leadership, Associate Dean (Europe) and Co-Director of the Centre for Globalization of Chinese Companies at China Europe International Business School (CEIBS). She holds her PhD from the University of California and was previously on the faculty of IMD, Lausanne, Switzerland, the University of Southern California, and Hong Kong University of Science and Technology.

Vlado Pucik is a Visiting Professor of Management at China Europe International Business School (CEIBS). He received PhD in business administration from Columbia University. In his academic career, he taught for many years at the International IMD and held faculty appointments at the Graduate School of Business, University of Michigan and at the Industrial and Labor Relations School, Cornell University.

William X. Wei is a Full Professor and an Associate Dean with MacEwan University’s School of Business. He is also co-supervisor of Master and PhD programmes at China University of Petroleum and of visiting professors at various Chinese Universities. Before joining MacEwan University, Dr Wei finished his BA in China, MBA at Berlin University of Applied Sciences, his MA at Brandenburg Technical University of Cottbus in Germany, his PhD at University of Limerick in Ireland and his post-doc visiting research at Richard Ivey School of Business, Western University, Canada. Dr Wei was awarded distinguished scholar by the Academy For Global Business Advancement in 2012. William X. Wei is the corresponding author and can be contacted at: weix@macewan.ca

For instructions on how to order reprints of this article, please visit our website: www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: permissions@emeraldinsight.com