# Advancing Human Resource Practices through Cognitive Technology: Insights from INTEC, Japan

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*The negative impact of the Covid-19 pandemic on the world economy has been broadly researched and documented. In Japan, however, the Covid-19 pandemic brought along a series of transformation opportunities to corporates, government, and public education. This paper illustrates the organizational efforts of transforming legacy talent operations and organizational architecture at one of Japan's largest software development businesses, Intec Inc. throughout the Covid-19 pandemic. Furthermore, the authors have also analyzed the impact of cognitive technology on organizational culture and global talent operations.*

**Keywords:** Talent, Culture, Digital, Management, Covid-19, Cognitive, Transformation, HR Japan

## INTRODUCTION

Headquartered in Toyama (Japan), Intec Inc. is one of Japan's oldest software development businesses, proving a wide variety of technology solutions, ranging from technology consulting to system integration and network services. Founded in 1964, Toyama Computing Center Co., Ltd. promoted the concept ofshared-use of general-purposed machines, which were expensive and unaffordable to smaller local industrial organizations. An intentional pun upon the words "information" and "technology", the company name was changed to Intec Inc. (hereinafter Intec) in 1970, representing the executives' intention to use information technology (IT) to transform the business landscape of Toyama. Throughout the 1980s and the 1990s, Intec grew rapidly from a local information processing business to an independent system integrator, offering technology services throughout the country.

Focused mainly on B to B business, Intec developed a VAN communications service for personal computers, product which was named "Tri-P" in late 1980s. The product was taken to market nationwide throughout the 1990s. This was a

period when telephone fees were high and customers were starting to look for alternative means of telecommunications. Internet access points were still limited and available mostly in larger cities in Japan. All users from outside these areas would have to either call long distance to make an internet connection or pay high fees to larger telecommunication providers for data and line utilization. Many customers throughout Japan found the "Tri-P" useful as they could connect to a host station, often located within their own prefecture, at a flat rate, regardless of distance (Intec, 2021).

Intec later diversified their business portfolio to include computer software, video games, consoles and PC engines, strengthening their business presence throughout the country. System engineers, coders and program developers were hired internationally, mostly from Eastern Europe, Israel, Brazil, India and Russia (Vlad, 2021). The international talent was placed within the "International Business Division", one of the few divisions in the organization where English was understood by Japanese managers.

In 1994, Intec constructed the 111-meter, 22-storey Tower 111, building which became the global headquarters of the organization. As of 2021, the building is still the tallest structure in Toyama (Intec, 2021).

Throughout the early 2000s, Intec engaged in technology research and development, establishing the Intec System Research Institute, later renamed Intec Web and Genome Informatics. The Institute name was once again changed to Intec System Research Institute, laying the foundations for Network Intec. Throughout continuous research and development activities, Intec created new business solutions, combining technological development capabilities, market insights and communication know-how with software development, bringing ISDN services to the market for the first time as telecommunications carrier, leading to the development of an integrated communication karaoke system. Intec further developed technology consulting services, providing solutions to clients in multiple industries, ranging from public corporations and government agencies to manufacturing, distribution, media, pharmaceuticals, life science, life and non-life insurance services, securities and other financial instruments.

The business went through a repeated series of spin-offs, mergers and acquisitions throughout the later 2000s and 2010s, failing to keep up withdigitalization and technological developments taking place in Silicon Valley, Israel and Eastern Europe. In 2008, a management integration of Intec Holdings with TIS was decided, giving birth to a new holdings company called IT Holdings Corporation. In 2016, IT Holdings acquired a remaining unit of TIS, in hope of adding speed and agility to organizational innovation.

Based on the concepts of "organizational happiness" and "being a good member of society", Intec made use of the Covid-19 pandemic period to revisit its corporate philosophy and to re-organize the business to allow for enhanced cross-divisional collaboration, agility and innovation.
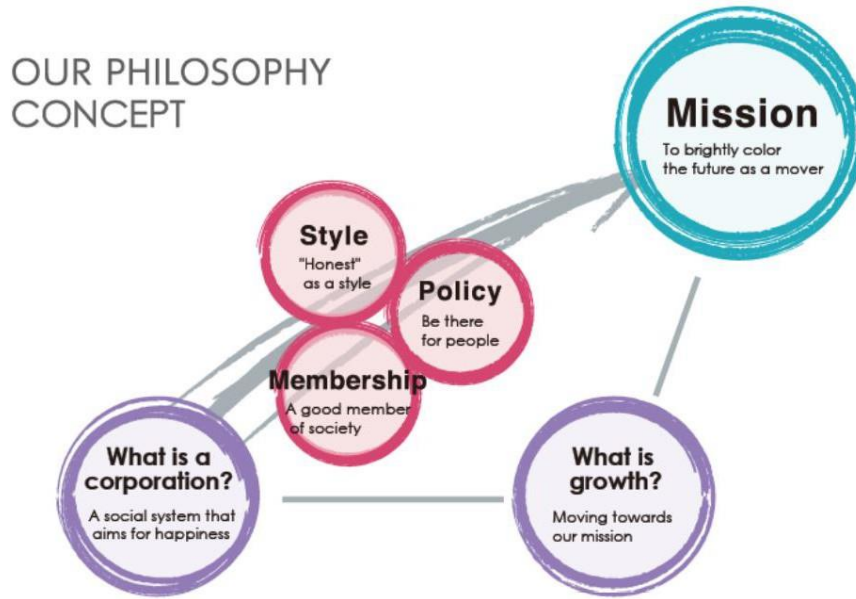
TIS Intec Inc. Group Philosophy Concept

Focused on re-engineering talent operations and creating a truly global organization, based on inclusion, agility and innovation, Intec president Takayuki Kitaoka positions organizational culture at the center of all operations, in an attempt to remind of stakeholders of the major importance the people function plays in re- vitalizing the business and transforming legacy processes, systems and operational platforms.
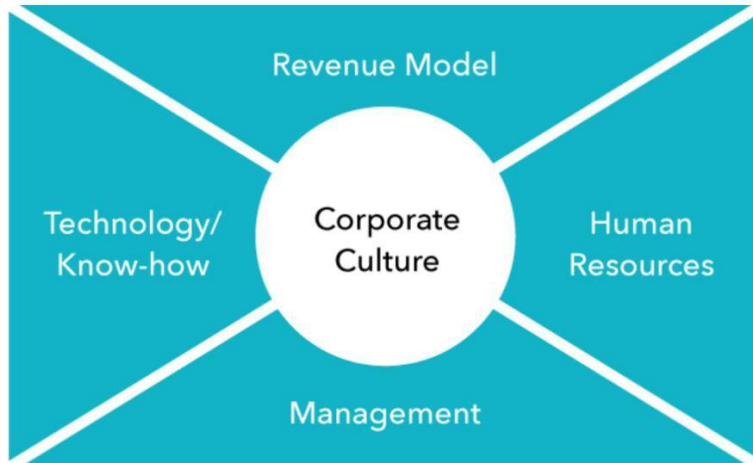
# RESEARCH OBJECTIVES, METHODS AND OBJECTS

## Objectives

This research illustrates the benefits for businesses in Japan to take advantage of periods of economic crisis to redefine organizational culture, business domains, and to develop a cognitive enterprise to drive performance and, ultimately, to enhance business agility. Secondarily, this paper provides examples of successful co-creation ecosystem development efforts in the areas of talent operations, digitalization, organizational architecture and cross-cultural business management. Prior research has indicated that an early involved of employees from all sides of the business in the culture dissemination process as well as in the process of on-boarding new technology helps with early acceptance and adoption of this technology throughout the organization (Vlad et al, 2019). This research will focus on the utilization of cognitive technology in driving organizational transformation and business agility.

## Research Objects

Intec people managers working in HR, Corporate Communications, Corporate Planning, Talent and Organizational Development, Presidential Office, Leadership & Learning, business directors, corporate executives and consulting partners.

## Research Methodology

The authors of this article conducted research based on an actual business case study, engaging in first-hand participant observation (Yin, 2003) of this organizational transformation process. We could observe various stages of the change management process throughout 2020, starting from the leadership transformation announcement in early 2020 and continuing to the various stages of change: hybrid work settings, cultural disconnection, corporate confusion, remotework arrangements, miscommunication, leadership re-alignment, cultural engineering and the integration stages of cognitive technology.

Japan Creative Enterprise, the consulting agency appointed for supporting the change management process used a combination of Ontological Design workshops, executive interviews talent review sessions. Design Thinking was employed for determining ultimate customer and employee value creation opportunities. Throughout these interactions, the authors conducted qualitative research through focus group interviews. Quantitative data was collected repeatedly between January 1st, 2020 and November 30th, 2020, consisting of self-completed questionnaires.

**Exploring HR Process Automation and Creating "Transformation Squads"**

As of February 2020, the Intec HR team was confronted with two upcoming challenges: a global pandemic that nobody knew how long would last and how much impact would have on business in Japan and a new direction from the presidential office to explore automation opportunities in the people management area and to develop a proposal for onboarding any effective technology by the end of the year. Automation had been widely implemented in the manufacturing side of the business; however, most talent operations were conducted in a highly analog manner, managers working on talent reviews in Windows Excel files and employees writing their annual appraisals in Word documents, which would ultimately need to be printed out, signed and sealed with individual hanko (individual seals used for personal identification).

In February 2020, the HR team decided to develop a "transformation squad" composing of people managers from various departments, technology experts, system engineers, communicators, organizational architects, planners, the Chief of Staff and technology minded talent operators from the HR team. It was a rare exercise for people with such diverse backgrounds, report lines and organizational interests to work together on a cross-divisional initiative and to report directly to the leadership board on findings, short-term plans and business recommendations moving forward.

The squad initially decided to meet on a weekly basis – two hours each Monday. Two weeks in the process, the squad members realized that the frequency of their engagement would not allow them to develop sufficient agility for collecting insights from across the business, discussing directions and exploring possible options. Therefore, there were three other sessions added to the weekly "all hands meeting" on Monday: one "lunch and learn" session every Tuesday and Thursday, and one "squad workshop" every Friday afternoon. These new gatherings were taking day-time away from multiple teams and were met with strong doubt, resistance and complaints from line managers, who could not understand the organizational value of this new initiative.

The Chief of Staff, the CHRO and the Head of IT were called in to explain the purpose of the automation initiative, the scope of the project and the role of the "transformation squad" to line managers and the labor union. President Kitaoka himself joined the Chief of Staff to the union meetings to explain the importance to revamping legacy processes and to modernize talent operations using emerging digital technology. The union representatives were mainly concern with the extra time necessary for the "transformation squad" members to allocate as a result of this new initiative. The squad explained that the ultimate aim of their project was the determine opportunities for enhancing business efficiency and allow employees from all across the organizations to achieve more results with less resources by employing emergent digitalization.

The squad team moved on with their transformation discussions, proposing to the HR department to consider developing a virtual helpdesk, multilingual chatbots which would answer simple questions, such as " when does the Golden Week6 start this year?", or "when is the company closed of the New Year's break?", or "how can I apply for maternity leave?", or "how much vacation time do I have left for this year?". An artificial intelligence (AI) chatbot would respond to these questions in natural language, either utilizing voice recognition and spoken language or responding in writing to typed questions. Squad members representing the Communications team requested the chatbot developers to explore opportunities of detecting underlying emotions from the tone of the voice, in case a user utilized the voice recognition option, in order to determine various sentiments behind the spoken words and to acknowledge whether the user was frustrated, annoyed, happy, satisfied or bored during the course of the chatbot interaction. The HR team agreed that this would be a positive development in the context of the data-driven, intelligent talent operations. The squad members agreed that, as a result, the implementation of intelligent chatbots and digital workers would help increase efficiency across talent operations throughout the organization through the reduction of man-handled administrative tasks and, furthermore, both time and cost would be released back to people managers to focus on more creative tasks and to align with the organizational strategy of rapid transformation and enhanced value creation (Intec, 2021).

The transformation squad was dissolved at the end of March 2020, allowing members to return to their initial roles and to dedicate 100% of their work time to sharing the acquired experience in utilizing cognitive technology, along with the know-how on developing digitally savvy talent, and installing a transformative attitude, a growth mindset and collaborative culture within their home divisions. Alternatively, the managing executives were fascinated by the wealth of information, business visibility and innovation opportunity brought over by utilizing big data, analytics, automation, machine learning, artificial intelligence and other cognitive technology, as well as the prospect of being able to make better informed, moretimely and more accurate business decision utilizing technology, in order to generate enhanced business outcome and to improve organizational agility.

A pulse survey conducted in January 2020 indicated that an average of 89% of managerial time was dedicated to administrative tasks at the Intect headquarters office in Tokyo. At the end of April 2020, a similar pulse survey indicated that a lower average of 65% of managerial time was still dedicated to administrative tasks. However, 88% of the 378 managers interviewed acknowledged that the implementation of chatbots and digital workers significantly increased "perceived productivity" and work efficiency, in the sense that users could access these digital platforms remotely from any connected device, without needing to be in the office to access certain generally available information.

## Concerns Regarding Data Security

While cognitive technology adoption saw a rapid increase internally at Intec Inc. due to its convenience, novelty and perceived productivity, employee concerns were also on the increase in regard to data security and ethic utilization. Talent related data was becoming rapidly available not only to direct managers but also to the Human Resources department, corporate officers, organizational administrators, the IT department and other business units. Such data would expose information ranging from how long employees sit at their desks to the number of meetings they have each day, both internally and externally, and also to what specifically they had done on each application, platform or other business function they were utilizing on-line.

Storing big data was also becoming increasingly expensive and cumbersome, as corporate regulations were tightening up as a result of individual privacy concerns and the Covid-19 pandemic emerging globally. Multiple business units were raising concerns about storing all the incoming data, collected by digital workers, deep learning algorithms, chatbots, artificial intelligence and other cognitive technology. Data hording was becoming not only expensive, but also troublesome; increasingly large (and un-curated, unstructured and unorganized) amounts of data were difficult to utilize, costing money and time, and becoming a business liability.

Legal concerns were also brought to executive attention, along with cost related anxieties, as collecting, storing and analyzing data was becoming increasingly expensive. The newly inflicted EU GDPR regulation was stipulating that data collected had to be "adequate, relevant and limited to the minimum necessary for the purposes for which data are processed". Similar data privacy regulations in Japan were rendering the whole data process collection legally concerning. Therefore, simply collecting and storing data "for a rainy day" was becoming both expensive and dangerous for the business.

While employees were generally happy to share internally information related to product and service development, organizational engineering, cross-departmental collaboration and other innovation-related initiatives, they were also becoming increasingly concerned about people data being collected without anyobvious managerial intention and any specific business objective. At the end of March 2020, a second "transformation squad" named "Rule Busters" was immediately assembled with the mission of unveiling and analyzing the removal of unnecessary internal rules, regulations, and processes. The squad was charged with analyzing existing operations and developing proposals for "busting" all unnecessary and counterproductive processes within one month.

Inspired by Toyota's concept of mura – inefficiency – (Isao, 2015), the squad proceeded to unveil and analyze the necessity of legacy and recent operations, with special focus on data collection, key performance indicators

(KPIs), decision making processes, security and compliance. After a series of design thinking workshops and agile practice reiterations on incumbent KPIs and data collection initiatives, the squad determined that a long list of KPIs and data collection initiatives were not even connected to any relevant business or key decision-making process. Rather, these KPIs and data collection initiatives were having a pure administrative role, conferring an illusional sense of authority to middle management and keeping employees busy at work.

The squad began analyzing data collection processes and they determined alternative, more business relevant motives for collecting data. Instead of collecting and storing information about how long each employee was spending in the office, from the "walk-in" time – i.e. had their individual time card punched and stamped by a machine, indicating the exact time they walked in to a physical office or checked-in for work on-line – until the "walk-out" time, low long they were in each office room or seated on a chair in front of their computer, the squad recommending analyzing data related to what specifically they were doing while seated on those chairs, in order to determine working preferences, learning habits, collaboration tendencies and other information relevant to organizational development and talent engagement. The squad also recommended that all employees be informed that data was being collected, with clear indications of what specific data was collected, to what intent and how it would later be utilized for their own benefit. The employees agreed to allow the business to collect individual behavioral data, with the understanding that this information would be utilized to improve individual learning experience and, ultimately, the work environment.

At the end of April 2020, the squad proposed to managing executives to abolish a long list of unnecessary operational processes and data collection initiatives, including data related to actions which were not obviously connected to key business decision processes, productivity and profitability. Although the previous squad generated corporate attention around the opportunities of increasing business visibility and making better decisions utilizing "big" data, the "Rule Busters" demonstrated that there was great business value in taking a more strategic approach towards data collection and utilization, by collecting primarily data which would be needed for improving business productivity, meaningful value creation and organizational agility. Collected data would further need to be curated by expert analysts in order to determine business relevance and to extract insights conducive to agile, timely and appropriate decision making.The "Rule Busters" were dismissed at the end of April 2020 and the team members returned to their home divisions, missioned to promote data literacy and to help their colleagues develop a collaborative mindset with enhanced consideration to data minimization and security.

### Creating a Hybrid Work Environment

As the Covid-19 pandemic was impacting the way business was conducted all around the world, in April 2020 Intec Inc. decided to allow all employees to work remotely, either from home or from other safe location of their choice. Remote working was a relatively new concept for the organization. With the rare exception of a few contracted digital nomads working internationally for in-house technology development units, working in an office from 09:00 to 17:00 was the common practice for most of the employees.

The idea of working remotely was received with both joy and concern. The obvious benefits of significantly reducing commute and being able to spend more time together with family and friends were counteracted by the lack of space to work at home, as many family members in Japan do not have their individually assigned rooms in the house or any constantly quiet space specifically designed for working from home. Confidentiality concerns were also becoming rampant, as working from home would automatically allow for business information with confidentiality aspects to be heard by anyone living, visiting or otherwise working also in the same house.

A third round of squads were assembled at the end of April 2020, this time inviting not only members from HR, Communications, Technology and Business Development, but also from Compliance and Corporate Governance. As soon as the Golden Week was over, the squad connected on-line to test collaborative technology and to develop a recommendation for a videoconferencing platform to be commonly used throughout the organization. With the experience of having worked together previously on similar short-term missions, the squad analyzed and tested existing videoconferencing platforms and collaborative technology and develop a recommendation in the record time frame of three working days.

## CONCLUSIONS

1. Adopting chatbots and digital workers to access generally available information enhances "perceived productivity" and work efficiency by reducing administrative tasks and repeated operations in manufacturing organizations.

2. "Transformation squad" teams working on re-engineering business processes contribute to enhancing organizational agility as long as their mission, authority, terms and periods of action are clearly defined and all business units share a common understanding of the expected business outcome. Data minimization, rather than extensive and unnecessary data collection, helps organizations make better informed decisions based on facts which are directly connected to decision making and which have an obvious

businessimpact. Good data governance, transparent privacy policies and safe digital collaborations lead to healthy talent engagement and psychological safety in a cognitive enterprise environment.

3. The Covid-19 pandemic period in Japan conferred businesses with an opportunity to review and revamp legacy processes, technology and regulations and to update their working styles, governance and organizational structures.

4. New corporate ethics concerns have emerged as a result of remote working and the utilization of data and cognitive technologies. Businesses need to update their governance practices to stay market relevant and legally operational.

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