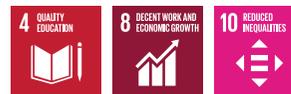


Harmonious Workplace



“ An Attractive Employer for Professional Talents

Employees are the key to innovation, operation, and sustainable development goals. By strengthening our core values and management ideals of integrity and accountability, efficiency and innovation, and sustainable management, we hope to unite our employees and build a business that is a source of pride.

67.4%

Internal employee substitution rate for job openings reached 67.4%

72%

Employee Engagement Survey average approval rate increased by 4% compared with the previous year

0%

Disabling injuries frequency rate and disabling injuries severity rate

110 / Employee Diversity

114 / Talent Retention and Employee Care

122 / Human Rights

126 / Talent Development

136 / Occupational Safety and Health



Strategy and Achievement

○ Unachieved ✓ Achieved ★ Surpassed

Material Issues	Strategies	2020 Goals	2019 Targets	2019 Achievements
Talent development	<ul style="list-style-type: none"> • Improvement of professional skills: Establish annual training development plans based on the Company's strategy • Key talent: Strengthen key talent development and enhance the retention rate of key talent • Individual development: Pay attention to employees' individual development and enhance internal employee substitution rate for job openings 	<ul style="list-style-type: none"> • Annual planned course completion rate $\geq 100\%$ • Retention rate of key talent $\geq 90\%$ • Internal employee substitution rate for Job openings $\geq 60\%$ • Gold Medal Certification in the Talent Quality-management System (TTQS) 	Annual planned course completion rate $\geq 96\%$	★ 110.2%
			Internal employee substitution rate for job openings $\geq 50\%$	★ 67.4%
			Employees' average annual participation: 12 times	★ 31.7 times
Talent retention and employee care	<ul style="list-style-type: none"> • Manpower stabilization: Implement talent retention plans to stabilize outstanding talent • Excellent compensation: Provide competitive compensation • Enterprise approval rate: Reinforce core values and galvanize solidarity 	<ul style="list-style-type: none"> • Retention rate of outstanding employees $\geq 97\%$ • Voluntary turnover rate $< 6\%$ • Employee Engagement Survey average approval rate $\geq 72\%^{**}$ 	Retention rate of outstanding employees $\geq 95\%$ or higher	★ 98.48%
			Voluntary turnover rate $< 8.4\%$	★ 5.92%
			Employee Engagement Survey average approval rate $\geq 70\%$	★ 72%
Human rights	<ul style="list-style-type: none"> • Compliance with laws and regulations: Comply with international human rights guidelines and implement related policies and standards • Protection for equal rights: Establish risk management and preventive measures, design diverse communication channels, and create an equal workplace 	<ul style="list-style-type: none"> • Completion rate of training on prevention of hazardous behaviors in the workplace: 100% • Completion rate of training on labor and code of ethics: 100% • No major deficiencies found in external audits or labor inspections 	New goals set for 2020	
Occupational Safety and Health	<ul style="list-style-type: none"> • Early diagnosis and early improvement: Continuous PDCA improvements for the occupational health and safety system • Safety culture: Build employees' safety awareness and establish a high-quality safety culture • Cross-inspection: Cross-inspection by internal and external institutions to strengthen independent inspections 	<ul style="list-style-type: none"> • Disabling injuries frequency rate < 0.23 *** • Disabling injuries severity rate < 7.6 **** • Independent inspection rate $> 93\%$ ***** • Number of safety and health proposals > 1800 proposals 	Disabling frequency rate < 0.25	★ 0
			Disabling severity rate < 8	★ 0
			Independent inspection rate $> 92\%$	★ 99.3%
<p>*Owing to the industry's characteristics, the margin of market variation is large and difficult to control. Thus, this was not included in the annual goals, but would be tracked continuously.</p> <p>**The survey is based on a ten-point system, and approval rate refers scores of higher than 7</p> <p>***Disabling injuries frequency rate (FR) = (total employees with disabling injuries × 106)/total work hours</p> <p>****Disabling injuries severity rate (SR) = (total days lost to disabling injuries × 106)/total work hours</p> <p>*****Independent inspection rate = (Number of cases reported by departments/number of discrepancies reported by safety and health units) *100%</p>				



Employee Diversity

Employees are the most important asset to NTC, as they are the key to supporting sustainable operations and innovative R&D within the Company. We strive to create a humane and comfortable working environment where new employees are subjected to systematic training courses and have access to diverse learning resources to help them quickly accumulate professional knowledge and skills regarding the semiconductor industry, and receive reasonable compensations in return. The Company also has an Employee Welfare Committee that organizes exciting and interesting recreation activities on a yearly basis to improve employees' work-life balance on both the physical and mental level, creating a LOHAS-style (Lifestyles of Health and Sustainability) workplace. We believe a competitive and stable workforce to be essential for improving the Company's productivity and competitive advantage. We strive to become the best employer by designing and providing an environment where talent may thrive to cultivate talent.

Stable Workforce

NTC's workforce structure is quite stable. In 2019, the Company hired a total of 3,307 permanent employees in Taiwan and in overseas subsidiaries (3,204 in Taiwan and 103 in overseas subsidiaries), and 42 non-permanent employees^{Note 1}. Male employees totaled 2,377 whereas female employees totaled 930, representing a gender ratio of 2.55 (male):1 (female). Average age of the Company's employees was calculated at 36.6. The 30-49 age group was the most dominant of all, representing 69.13% of the total employees. 100% of permanent and non-permanent employees are hired directly by the Company. The Company hired no part-time staff in 2019 and 100% of its employees worked on a full-time basis.

In 2019, NTC had 111 female junior-level managers, which accounted for 43.36% of total junior-level managers; there were also 3 female mid-level managers, which accounted for 6.82% of total mid-level managers; the Company currently has no female in the executive-level positions. Due to the special characteristics of the semiconductor industry and realities concerning talent supply, males still dominated the management roles. As for production line management roles such as team leader and shift leader, females accounted for as high as 93.62% and had significant influence on the productivity of NTC. There were a total of 17 female managers of section chief-grade and above in revenue-generating departments, which accounted for 14.17% of total managers.

Note 1: Non-permanent employees include contracted consultants, fixed-term contract staff and part-time employees.

◆ Number and percentage of female managers in the last 3 years

Count/Percentage	2017		2018		2019	
	Number of females	Percentage of females	Number of females	Percentage of females	Number of females	Percentage of females
Total employees	879	29.46%	925	28.74%	930	28.12%
Management levels (junior +middle + senior management)	111	37.76%	115	36.74%	114	36.31%
Junior management *	108	46.35%	112	43.92%	111	43.36%
Middle management (plant/division head)	3	6.00%	3	6.82%	3	6.82%
Senior management (Assistant Vice President and above)	0	0.00%	0	0	0	0.00%
Head of production line operations	87	94.57%	89	93.68%	88	93.62%
Head of revenue-generating department (section head and above)**	17	11.33%	18	15.00%	17	14.17%

* Junior management positions include section and department head and head of production line operations
 **Revenue-generating department refers to any department other than planning, administration, operational support, quality assurance, legal affairs and safety & health.



The semiconductor industry is both capital and technology intensive. In addition to the multi-billion dollar plants and manufacturing equipment, NTC requires a substantial amount of outstanding talent from an engineering background to join its production team. As of December 31, 2019, the Company had 3,307 permanent employees on its payroll, and 81.91% of whom were specialists^{Note 2}. Overall, the Company has a competitive, healthy and growing talent base to support development of innovative manufacturing process technologies and new products. With respect to age distribution, the 30-49 age group accounted for the most of our employees, and regarding the education background, the majority of our employees held a bachelor's or master's degrees.

Note 2: "Specialist" refers to offline production personnel

◆ Age group of permanent employees

Division	Classification	Taiwan				Overseas subsidiaries				Total			
		▲	Percentage of total females in Taiwan operations	▼	Percentage of total males in Taiwan operations	▲	Percentage of total females in overseas operations	▼	Percentage of total males in overseas operations	▲	Percentage of total female employees	▼	Percentage of total male employees
Age group	Age 29 and under	122	13.36%	633	27.63%	2	11.76%	19	22.10%	124	13.33%	652	27.43%
	Age 30-39	375	41.07%	897	39.15%	8	47.06%	16	18.60%	383	41.18%	913	38.41%
	Age 40-49	374	40.97%	599	26.15%	1	5.88%	16	18.60%	375	40.32%	615	25.87%
	Age 50-59	40	4.38%	152	6.63%	6	35.30%	27	31.40%	46	4.95%	179	7.53%
	Age 60 and above	2	0.22%	10	0.44%	0	0.00%	8	9.30%	2	0.22%	18	0.76%



Top Talents Attraction

The Company comply with Taiwan's labor regulations and its own ethical employment principles when recruiting and hiring staff. The Company strives to provide equal employment opportunities and environment, and recruit talent solely based on individual professional capabilities and experiences without discrimination owing to age, ethnicity, gender, sexual preference, religion, political association, place of birth, marital status, appearance or disability. Employees' promotion, performance evaluation, training, reward and discipline after hiring have been explicitly formulated, so everyone has an equal opportunity for employment and training.

In 2019, a total of 182 engineers were hired to support organizational transformation and transition into advanced manufacturing process. The Company recruits entry-level engineering talent through factory sites and campus recruitment programs. The Company approaches renowned local colleges each year to recruit engineering graduates at all professional levels and matches them to open positions on-site. In 2019, the Company held 18 campus recruitment events at renowned colleges nationwide, and engaged young students in a series of interaction, communication and discussion based on the theme - "Infinite Future." It is our hope to encourage all willing students to pursue a dream career in the high-tech industry and contribute to semiconductor development in Taiwan. Recruitment of entry-level production line operators is carried out with the help of local employment service stations near the Company's plants. On-site interviews are held from time to time, and local residents are hired as a priority to promote local employment. Management positions of Taiwan operations consist entirely of Taiwanese nationals for 100% localized hiring.

◆ Campus recruitment



To promote the semiconductor development and the Company's operations, NTC actively recruits new members to join in its team and work collaboratively down the road. New recruits accounted for approximately 7.2% of the Company's total employees in 2019. Gender distribution of new recruits was approximately 4.95 (male):1 (female).

* Percentage of total new female recruits

** Percentage of total new male recruits

*** Percentage of total new recruits

**** New recruits refer to: Personnel hired and remained employed in 2019 (excluding those who resigned during the year)

◆ New recruits of Taiwan and overseas operations, by age

Division	▲		▼		Total	
	Number of people	Percentage*	Number of people	Percentage**	Number of people	Percentage***
Age 29 and under	26	65.00%	169	85.35%	195	81.93%
Age 30-39	11	27.50%	22	11.11%	33	13.87%
Age 40-49	3	7.50%	7	3.54%	10	4.20%
Age 50-59	0	0.00%	0	0.00%	0	0.00%
Age 60 and above	0	0.00%	0	0.00%	0	0.00%
Total new recruits	40		198		238	
Percentage of total employees	1.21%		5.99%		7.20%	

Diversified Recruitment Policy

NTC have domestic and overseas operating locations. Therefore, in addition to Taiwanese, we have hired employees of diverse nationalities including Chinese, French, German, Italian, Japanese, Korean, British, American, Turkish and Singaporean (total 10 nationalities) within the last 3 years. Non-Taiwan national employees totals 98, accounting for 2.96% of total employees, forming an international and diverse workplace.

NTC also supports the government's policies of hiring people with disability as part of its workplace diversity initiative. As of December 2019, Taiwan operations hired a total of 26 employees with disability, which represented 0.81% of total employees. Due to the work nature involved and inconvenient traffic access, hiring people with disability has been rather difficult. The Company will continue to hire the required number of people with disability and provide suitable job openings for them so as to increase employment opportunities for those with disability and create a friendly workplace.

	2017	2018	2019
Number of nationalities	9	10	11
Nationality category	Taiwanese, Chinese, German, Italian, Japanese, Korean, British, USA, French	Taiwanese, Chinese, German, Italian, Japanese, Korean, British, USA, French, Turkish	Taiwanese, Chinese, German, Italian, Japanese, Korean, British, USA, French, Turkish, Singaporean
Number of employees with disability	25 people	27 people	26 people



Talent Retention and Employee Care

NTC not only offers salary packages that are competitive for the semiconductor industry, but also introduces a full range of welfare measures and training systems that address employees' needs on all aspects from work, life to health. It is the goal of the Company to create a work environment where employees may realize their full potentials with a peace of mind, and for which we have implemented an employee assistance program as part of our corporate social responsibilities.

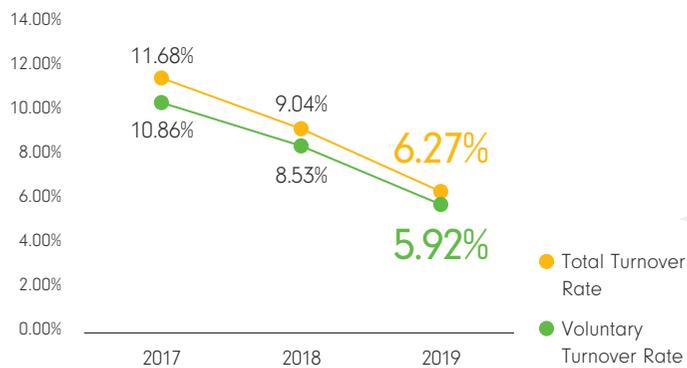
Job Security

The Company continues to promote fair and reasonable operations and priorities the protection of employees' right. Under the human resources integration system of the Formosa Plastics Group, employees are transferred first before they are made redundant. Transfer and redundancy of employees are announced and notified in advance in accordance with the Labor Standards Act and relevant regulations, whereas department managers would also communicate fully with the employees in question and execute decisions in accordance with the regulations. The Company uses quarterly bonus as a retention incentive, a profit-sharing measure, to encourage employees to actively accomplish operational goals.

NTC wins the trust and recognition of its employees by offering a favorable work environment and livelihood security. These are the reasons why the Company has relatively stable employee turnover rate compared to peers. The voluntary turnover rate lowered from 8.53% in 2018 to 5.92% in 2019. (Gender distribution of employee turnover was approximately 2.8 (male): 1 (female)). We implemented various talent retention plans and incentive measures in 2019, including the issuance of "employee stock option certificates" and implementation of "adjustable salary package for new recruits."

The Company uses remuneration and incentive bonuses to control employee turnover risks and retain talent.

◆ Turnover rate analysis for the last 3 years - Taiwan & Overseas



2,559 people

- Total employees receiving employee stock option certificates
- First wave of eligible employees went on board before 2016/3/31 + number of people issued: 2394 people
- Second wave of eligible employees went on board before 2016/7/31 + number of people issued: 165 people

187 people

New recruits subject to salary adjustment



Note:

1. Turnover rate = (employee turnover number in January/total number of people employed at the end of January) x 100% + (employee turnover number in February/total number of people employed at the end of February) x 100% + ... +(employee turnover number in December/total number of people employed at the end of December) x 100%
2. Voluntary turnover refers to resignation initiated by the employee. The Company calculates turnover rate mainly based on voluntary turnover. Total turnover rate includes voluntary (including retirement) and involuntary turnover (including dismissal, redundancy, death, etc.)
3. Until 2018, the data had only showed the turnover rate in Taiwan. Starting 2019, overseas data was also included in the calculation of turnover rate.
4. Starting 2019, turnover rate calculation excluded the number of direct interns.

◆ Employee turnover and retirement by age - Taiwan

Division	▲		▼		Total		
	Number of people	Percentage of entire division	Number of people	Percentage of entire division	Number of people	Percentage of entire division	
Employee turnover and retirement	Age 29 and under	16	30.77%	74	51.75%	90	46.15%
	Age 30-39	26	50.00%	49	34.27%	75	38.46%
	Age 40-49	9	17.31%	16	11.19%	25	12.82%
	Age 50-59	1	1.92%	3	2.10%	4	2.05%
	Age 60 and above	0	0.00%	1	0.70%	1	0.51%
Total number of employee turnover and retirement		52		143		195	
Percentage of total employees*		1.62%		4.46%		6.09%	



*Percentage of total employees: Refers to the number of resigned/retired females, males and employees as a percentage of total employees in Taiwan as of December 2019.

Employee Engagement Survey

In 2019, the Company conducted an organization-wide Employee Engagement Survey to evaluate employees' approval rate of the Company. This survey used 28 questions to collect employees' opinions on six aspects, and achieved a response rate of 91%. The results showed an average approval rate of 72%, which was slightly higher than the rate of 68% last year. This meant that the Company's efforts to strengthen employees' esprit de corps through employee activity promotion, compensation, and bonuses had achieved results. The Company started to conduct the Employee Engagement Survey in 2017. We reviewed the results each year and made adjustments to various measures step by step. We hope that the survey would have more beneficial effects on our development of a happiness enterprise.

Aspects	2017		2018		2019	
	▲	▼	▲	▼	▲	▼
Individual work performance	65%	69%	60%	66%	60%	71%
Engagement with line manager	68%	73%	66%	73%	60%	73%
Understanding of corporate vision/culture	66%	70%	64%	72%	65%	75%
Performance of the managed team	67%	70%	63%	74%	63%	75%
Relationship with peers	77%	79%	75%	81%	71%	81%
Satisfaction with promotion/compensation	64%	65%	58%	65%	56%	65%
Average approval rate	70%		68%		72%	
Response rate	44%		85%		91%	

2019 improvement plans

- **Introduction of professional psychological counseling services:** Combine psychological counseling services with the existing new recruits counseling mechanism to help new employees get acquainted with their work environment faster
- **Mid-level management communication training camp:** Plan mid-level management communication camps to help mid-level managers to strengthen their leadership and communication skills
- **Plan a Women Empowerment Plan:** In view of female employees' low approval rate on satisfaction with promotion/compensation, we have considered planning a Women Empowerment Plan, hoping that the opportunities for females in terms of work and life would be enhanced so as to increase diversity at workplace.

Note: 1. This survey is based on a ten-point system.
2. The above approval rate refers scores of higher than 7

A union was established by NTC's employees in April 2012. Although the Company has not signed a collective bargaining agreement with the union, it still actively maintains communication channels and harmonies with the union. The Company holds a standing meeting each month with the union, so the frequency of meetings is higher than that required by the regulations. This allows the union to fully function and express opinions, which enhances labor-management harmonious relations and welfare.

◆ Union members in the last 3 years - Taiwan

	2017	2018	2019
Number of union members	64 people	71 people	81 people
Percentage of employees with union membership	2.22%	2.27%	2.53%

Competitive Compensation Program

NTC's salary packages for new recruits are determined based on individual education and experiences, peer level, local economics, and supply/demand of the local labor market, and outlined in employment contracts. Employees of similar job content, education, and experiences are remunerated with equivalent salaries and benefits without gender difference of any kind. Adjustments to employees' salaries and benefits are evaluated primarily based on work performance.

The Company's compensation and welfare systems have been developed through local salary surveys and discussions with regional salary associations, after taking into account factors, such as industry competitiveness, macroeconomics, corporate culture, and business sustainability. This process ensures the competitiveness of our overall salary package. Monthly salary includes base salary, meal/travel/location allowance and operational allowance, as well as efficiency bonus. We also offer additional bonuses and variable compensations based on employees' individual performance and accomplishment of organizational goals (or profitability), and in doing so, we reward employees for their excellent performance and share with them the profits we make as a group, regardless of their gender. After taking into account quarterly incentive bonuses and year-end remuneration, employees received more than 4 months' worth of salary in bonus on average in 2019. In addition, the average annual compensation of full-time employees in non-executive positions in 2019 totaled NTD 1,400,000, reducing by 21.9%^{Note 1} compared with 2018, while the median annual compensation of such employees totaled NTD 1,163,000.

NOTE1 Compared with 2018, a decline in average compensation in 2019 mainly resulted from an increase in the number of people hired in 2019, a decline in profit before tax, and the competent authority's adjustments to the calculation base.

◆ Full-time employees in non-executive positions

	2018	2019	Difference to the previous year
Number of people	2,769	3,133	Increased by 13.1%
Average compensation (thousand NTD)	1,793	1,400	Reduced by 21.9%*
Median compensation (thousand NTD)	-	1,163	-

* Compared with 2018, a decline in average compensation in 2019 mainly resulted from an increase in the number of people hired in 2019, a decline in profit before tax, and the competent authority's adjustments to the calculation base.



Characteristics of NTC's compensation:

- NTC is included in the Taiwan High Compensation 100 Index, showing that the Company's compensation is very competitive
- Year-end bonus, festive bonus, Dragon Boat Festival/Mid-Autumn Festival diligence bonus, and grade bonus
- Long-term incentives: Include employee remuneration, employee stock option certificates, incentive bonus, and annual salary adjustments

Item	Details	Target
Remuneration for employees	Amount allocated to employees from previous year's earnings, subject to resolution of the board of directors and shareholders	All permanent employees
Employee stock option certificates	Employees' rights to subscribe a certain quantity of the Company's shares at the specified price within the effective duration in the future	Employees granted with warrants
Incentive bonus	Bonus is allocated based on quarterly target accomplishment, individual performance, and percentage of days on the job	All permanent employees
Annual salary adjustment	Salary is adjusted in line with increased price level, peer standards, and competitive margin over peers	All permanent employees

Male and female employees in Taiwan have the same starting salary and terms of compensation. Female managers received slightly lower compensation on average than males in 2019. In terms of total salary package, females received 92.35% that of males on average; in terms of remuneration, females received 93.24% that of males on average. This difference was mainly attributed to the higher average years of service among males, which entitled them higher compensation and remuneration compared to females. In 2019, female employees of non-managerial role received total salary package at 109.02% that of male counterparts on average, and remuneration at 113.15% that of male counterparts on average. Females received higher compensation and remuneration than males in this respect mainly because of their higher average years of service. Overall, the Company offers competitive compensation along with full benefits and facilities that enable employees to enjoy job security and quality of life.

1.81%

Increment of starting salary for entry-level production line operators over the minimum wage

NT\$23,520 UP

Starting salary for entry-level production line operators

65.02%

Increment of starting salary for employees with bachelor's degree in engineering over the minimum wage

NT\$38,120 UP

Starting salary for employees with bachelor's degree in engineering

◆ Comparison Ratio of Male and Female Employees - Taiwan

Average compensation ratio	2017	2018	2019
Female-to-male salary ratio - executive level	-	-	-
Female-to-male salary ratio - management level	86.77%	88.64%	92.35%
Female-to-male remuneration ratio - management level	89.43%	92.07%	93.24%
Female-to-male salary ratio - non-management level	110.35%	109.11%	109.02%
Female-to-male remuneration ratio - non-management level	116.37%	115.31%	113.15%

Note:

1. "Salary" refers to the annual average of regular earnings (including take-home base salary, efficiency bonus, meal/location/travel allowance, operational/professional bonus and other payable items) + grade bonus.
2. "Remuneration" refers to the annual average of regular earnings + grade bonus + incentive bonus + employee remuneration + festive bonus + Mid-Autumn Festival and Dragon Boat Festival diligence bonus + year-end bonus.
3. "Executive level" refers to assistant vice president grade and above, and the Company had 0 female senior manager in the last 3 years.
4. "Management level" refers to section chief + department head + division head.

The Company offers employees in Taiwan unpaid parental leaves. Employees are free to apply for the unpaid parental leave to balance their lives between work and family. Thus, employees are able to take care of children at ease, which helps with the stability of family and the society. In 2019, a total of 356 employees (112 females and 244 males) were entitled to take unpaid parental leave, and a total of 23 people (19 females and 4 males) had actually applied.

◆ Application of unpaid parental leave and reinstatement rate - Taiwan

Item	2017			2018			2019		
	▲	▼	Total	▲	▼	Total	▲	▼	Total
Number of employees eligible for unpaid parental leave	103	176	279	86	219	305	112	244	356
Number of employees applying for unpaid parental leave	37	2	39	24	3	27	19	4	23
Number of employees due for reinstatement in the current year (A)	19	1	20	15	1	16	10	2	12
Number of employees applying for reinstatement in the current year (B)	12	1	13	10	1	11	5	1	6
Number of employees still on the job 12 months after reinstatement	10	-	10	9	1	10	9	1	10
Reinstatement rate % (B/A)	63.16%	-	65.00%	66.67%	100.00%	68.75%	50.00%	50.00%	50.00%
Retention rate %	90.91%	-	90.91%	75.00%	100.00%	76.92%	90.00%	100.00%	90.91%

Note:1. "Number of employees due for reinstatement in the current year": does not include employees who applied to extend their unpaid leave during the year.

2. "Number of employees applying for reinstatement in the current year": includes employees who applied for reinstatement in the current year before the end of their leave.

3. "Retention rate" refers to the percentage of employees reinstated from unpaid parental leave who continued to work for one year and above.

4. Owing to statistical errors, the values of 2017 and 2018 were adjusted.

- **Leave:** We offer employees different types of leave in accordance with laws and regulations. In addition, payment of salary in the event of employees' absence during sick leave and typhoon days is more favorable than what the labor regulations require.
- **Insurance:** In addition to the Labor Insurance and the National Health Insurance, the Company's Employee Welfare Committee also purchases group insurance for employees.
- **Wedding/funeral/child care:** The Company offers congratulatory or condolence money for occasions such as wedding or funeral involving the employee or employee's spouse, parents or child, and subsidizes line managers for giving congratulatory/condolence money in their personal capacity. The Company also offers child care leave that eligible employees may take and adjust work hours accordingly for child care.
- **Retirement benefits:** For those choosing the pension fund system based on the Labor Standards Act, the Company has deposit 2% monthly salary to a special retirement account of Bank of Taiwan. The size of pension fund under the system accumulated to NTD 516,000,694 in 2019, and had been fully contributed. For those choosing the pension fund system based on the Labor Pension Act, the Company contributes 6% monthly salary to employee's individual retirement account. Employees are eligible to contribute more amounts voluntarily, and the amount will also be deposited into his retirement account.
- **Healthcare services:** As a member of Formosa Plastics Group, the Company has the support of Chang Gung Memorial Hospitals as well as access to medical center-grade treatment and healthcare services. Employees of NTC and their dependents are subsidized when seeking treatment at Chang Gung Memorial Hospitals, and are entitled to discounts on health checkups and various deductibles not covered by the National Health Insurance Scheme.

Friendly Environment Benefits

The Company offers a wide range of benefits from dining, accommodation, shuttle bus to parking to improve the friendliness and convenience of the work environment for employees. The Employee Welfare Committee also arranges diverse benefits and activities for employees. The Employee Welfare Committee comprises 9 members, 1 of whom is appointed by the Company whereas the other 8 are elected by employees from different departments. The Employee Welfare Committee received approximately NTD 37 million in funding in 2019; the majority of which was spent on incentive trips, festive gifts, birthday vouchers, children's scholarship, group insurance, entertainment, and childbirth and hospitalization subsidies.

Main welfare measures

Employees are entitled to apply for single dormitory at discount rates.

Canteens have been established at all plant sites to serve healthy and hygienic meals to employees, whereas convenience stores, coffee/fruit shops etc are also available to satisfy employees' needs for diversity. Special meals are prepared during festive occasions and Chinese New Year periods as recognition for the sacrifice of those on shift.

Car/motorcycle parking lots and shuttle bus services have been made available as more convenient commuting options for employees.



2019 year-end party



2019 film carnival



2019 baseball day



2019 family day - advance to the happiness and play the world



Coffee/fruit shops



Convenience store



Clean single dormitory

Sports-friendly Workplace

The Company organizes sports and entertainment activities from time to time to advocate work-life balance. By encouraging the creation of sports clubs and exercise space, we aim to promote sports habits and employees' physical as well as mental health. Some of the actions taken are as follows:

● Full-fledged sports/fitness center

The Company has a multi-purpose sports and recreation center with facilities including air track, basketball court, badminton court, KTV, pool table, aerobics room, massage chair and fitness equipment that employees may use to maintain health amidst their busy schedules.



12,077 people

Number of people using the sports and recreation centers in 2019

46,429 visits

Number of visits to the sports and recreation centers in 2019



● Promotion of sports habits

The Company promotes sports habits through activities, encouraging employees to exercise amidst their busy schedules to achieve work-life balance. As the Company has a five-star sports center and a recreation center, and sports clubs of diverse themes, including jogging, basketball, table tennis, badminton, and slow pitch softball, we organized a Sports Festival activity in 2019 to promote these clubs and strengthen relationships within departments. The Sports Festival activity encouraged departments or clubs to propose creative sports plans regarding the use of facilities in the recreation center, hoping to stimulate the sports atmosphere in the Company and encourage employees to make good use of sports facilities in the recreation center amidst their busy schedules so as to promote sports habits and strengthen interactions and understanding among employees. The number of people using the sports center had increased and the Company was awarded the 2019 Taiwan iSports Certification, which showed that the Company's sports habits were enhanced and received external recognition.



NTC received the 2019 Taiwan iSports Certification



A total of 20 departments and over 1,500 employees participated in the 2019 Sports Festival activity



Newly opened recreation center was the best place for employees who love exercise after work

● Diverse club activities

The Company has 24 clubs of diverse themes, including parenting, jogging, basketball, table tennis, badminton, slow pitch softball, hiking, and camping. More than 1,145 employees had participated in the above club activities in 2019. Clubs are encouraged to recruit participants on a yearly basis to enhance exposure.



Volleyball club



Basketball club wins awards in the corporate sports meet each year



Employee trip



Basketball club - 3 on 3 tournament

Healthy and Caring Environment

For the convenience of female employees, the Company offers priority parking lots for pregnant employees and has nursery rooms in place to support gender equality. The health center also conducts maternal hazard assessments for women who are pregnant and breastfeeding. The Company complies with We the Occupational Safety and Health Act, and as an employer, it undertakes hazard evaluation, control and classification measures for work activities that are hazardous to maternal health. For female workers who are pregnant or have given birth less than a year ago, the Company adopts health protection measures and adjusts work details as recommended by physicians, and keeps relevant details on record. The Company disseminates health-related information and organizes women's health seminars on a regular basis. There are professional nurses stationed at plant sites to offer counsel on infant care for pregnant women. Nursery rooms fully equipped with lockers, refrigerators and water heaters have been deployed at all plant sites for the peace and comfort of all breastfeeding employees.



Priority parking lots for pregnant employees



Lactation room



Human Rights

Human Rights Policy

NTC places great emphasis on employees' rights. The Company has labor and ethics policies Labor and ethics policies, and complies with related international human rights regulations, including behavioral guidelines of Responsible Business Alliance (RBA), SA8000 Social Accountability Standard, International Labour Organization (ILO), The Universal Declaration of Human Rights, The UN Guiding Principles on Business and Human Rights, General Data Protection Regulation (GDPR) and local government's regulations. By implementing human rights risk assessment and management, the Company hopes to create an inclusive and friendly workplace.

All the hiring in 2019 did not violate the principle of non-discrimination. The Company pledges not to hire child labor under the age of 16 and has never employed child labor. For the protection of employer's and employees' rights, all employees are given an employment notice prior to the work commencement date. The Company signs employment commitment in writing with all new recruits on the work commencement date, and 100% of employees have signed the commitment, meaning that all employees of the Company are fully protected by the terms of the employment contract. All employees have been hired with employment terms established under the free will, consent and consensus of both parties; no employee was forced or coerced to perform work activities unwillingly. In 2019, the Company organized training courses in human rights policies or procedures, including occupational safety and health, labor laws and regulations, labor and ethics, personal data protection, and occupational health protection. The training courses had 12,087 participants and accumulated 13,242 hours in total training participation.

◆ 2019 training hours and percentage of courses in human rights policies or procedures

Category	Human rights issues	Number of participants	Percentage of employees attending training (number of participants/number of employees)	Hours in total training participation
Occupational safety and health	Occupational injury and illness	4,637	140.2%	10,265
Labor laws and regulations	Excessive overtime work hours and employment disputes	138	4.2%	276
Labor and ethics	Excessive overtime work hours, sexual harassment, child labor, and forced labor	6,832	206.6%	2,015
Personal information protection	Personal information protection	38	1.1%	47
Occupational health protection	Maternity protection, occupational health protection, and abnormal workload	442	13.4%	639
Total		12,087	-	13,242

Human Rights Risk Assessment

NTC assesses human rights risks using RBA and workplace health principles. The Company has an internal audit system in place to regularly assess employees' risk exposure and devise mitigation measures accordingly. We constantly identify human rights issues, susceptible parties and departments, and perform human rights risk assessments on a regular basis. Risk values are calculated to reflect the percentage of people at risk relative to total employees; based on the assessment results, the Company is able to devise annual improvements and set mitigation targets for human rights risks in the future.

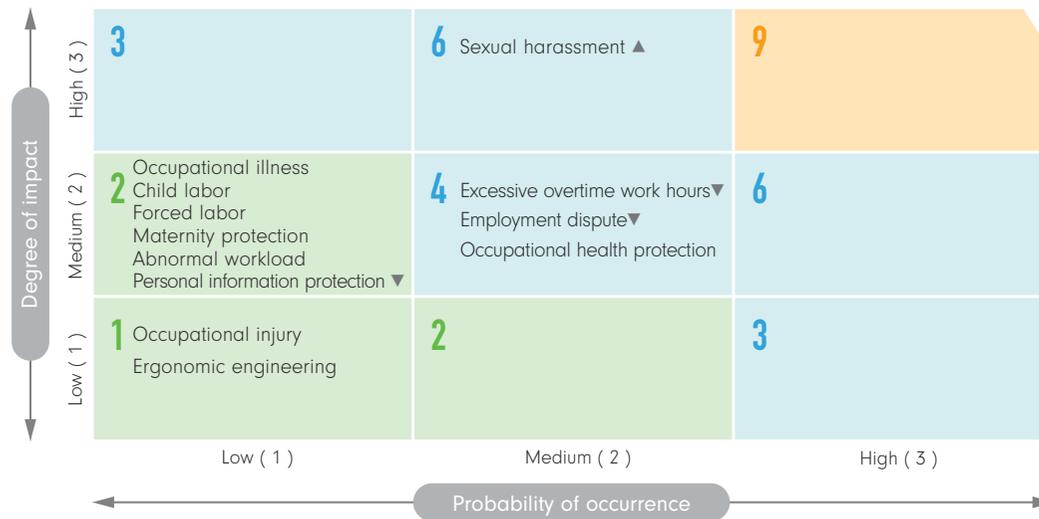
NTC has incorporated the four main tasks of the Occupational Safety and Health Act and GDPR into our human rights risk assessment framework, defined the high-risk group in the scope of human rights issues, and calculated risk values based on the percentage of people at high risk. The 2019 risk value was 10.4%, reducing by 2.9% compared with 2018. Excessive overtime work hours, employment disputes, sexual harassment, and occupational health protection were human rights issues identified as medium risk, which were subject to exposure risks. Thus, we implemented mitigation measures and provided compensations for these risk factors.

◆ Human rights risks of NTC

Human rights issues	Parties susceptible to influence	Assessment tools	2018 risk	2018 risk value	2019 risk	2019 risk value
Excessive overtime work hours	Production engineer/technician/R&D personnel	Attendance system	Medium		Medium	
Occupational injury	Production/new recruit	Occupational injury report	Low		Low	
Employment dispute	All employees	Government correspondence on employment disputes	Medium		Medium	
Occupational illness	All employees	Special health checkup	Low		Low	
Sexual harassment	Female	Grievance investigation	Medium		Medium	
Child labor	Employees aged 18 and below	Identity proof	Low		Low	
Forced labor	All employees	RBA internal audit	Low		Low	
Personal information protection	All employees (European employees)	In violation of GDPR	Medium	13.3%	Low	10.4%
Maternity protection	Females in pregnancy or within 1 year of labor	Females in pregnancy or within 1 year of labor are subjected to regular tracking	Low		Low	
Occupational health protection	People with blood pressure > 140/90mmHg or metabolic syndrome	People with blood pressure >140/90mmHg or metabolic syndrome are subjected to regular tracking	Medium		Medium	
Abnormal workload	Overtime working exceeding 37 hours a month for 6 consecutive months	People who work overtime more than 37 hours a month for 6 consecutive months are subjected to regular tracking	Low		Low	
Ergonomic engineering	People with ergonomic engineering risk grade>2	People with ergonomic engineering risk grade >2 are subjected to regular tracking	Low		Low	



◆ Human rights risk matrix



Description:
 High risk (score: 9),
 Medium risk (score: 3~6)
 Low risk (score: 1~2)
 ▲ indicates the risk score is higher than that in 2018
 ▼ indicates the risk score is lower than that in 2018

◆ Mitigation measures and compensations proposed for issues identified as medium risk in 2019

Human rights issues	2019 risk	Mitigation measures	Compensations
Sexual harassment	Medium	Enhancing training and communication. Physical training for managerial personnel (9 sessions; 466 participants). Online training courses for all employees (3217 people completed the training).	<ul style="list-style-type: none"> • Completing investigations and penalties; announcing the disciplinary results on the plant sites • Segregating victim from the accused, and arranging other appropriate work positions.
Excessive overtime work hours	Medium	<ul style="list-style-type: none"> • Units that exhibit excessive overtime work hours were instructed to analyze the underlying cause and propose improvements • Employees' overtime working was monitored on a monthly basis, and line managers were notified to make improvements 	Internal policies have been adjusted to prohibit employees from working overtime in excess of statutory limits. Company dealt with such matters in accordance with regulations and reached an agreement with employees.
Employment dispute	Medium	<ul style="list-style-type: none"> • The Company has always responded to employment disputes through open and rational communication, as we strive to resolve difference in opinions and develop consensus among the workforce. • Actively collecting information on labor laws and regulations, planning corresponding strategies in advance, and making timely adjustments to related management systems to reduce the possibility of employment dispute. 	<ul style="list-style-type: none"> • The union raised objections to information security policies and performance evaluation system. The Company and the union communicated very hard to resolve their disagreements and reached a consensus in the end. • Some employees violated the Work Rules and employment contract. The Company dealt with such matters in accordance with regulations and reached an agreement with employees.
Occupational health protection	Medium	<ul style="list-style-type: none"> • The Company conducted investigations on areas including maternal health, health checkup of high risk groups, ergonomic engineering, and abnormal workload. • Employees who had been subjected to regular tracking were offered health-related counsel and recommendation 	<ul style="list-style-type: none"> • Providing health-related counsel and recommendation • Employees might discuss with line managers to have overtime reduced if they were physically or mentally unable to cope. • Regular follow-up diagnosis and treatment.

Preventive Measures against Workplace Violence

NTC formulated the Ban on Workplace Violence Written Statement, which was signed and announced by the supreme leader, showing our resolve regarding zero-tolerance towards workplace violence. Before the release of the Guidelines for Workplace Violence, the Company had established the Workplace Sexual Harassment Prevention, Grievance and Disciplinary Policy and the NTC Guidelines for Handling Employee Complaints. Thus, we have planned related prevention and subsequent investigation measures for employees who experience improper treatment. In 2019, we combined the aforementioned two regulations into the NTC Employee Protection and Grievance Regulations for further complete management.

Starting 2020, the Company plans to conduct employee protection and prevention hazard identification and risk assessment in each department, and manage potential risk groups to prevent and mitigate risks in advance. In addition, we plan to educate division, department, and section heads about the regulations, ask them to make commitments, and use management self-review checklist to ensure that workplace violence is precluded. The Company has psychological counseling rooms. In cooperation with the Teacher Chang Foundation, counseling psychologists provide counseling services twice each month in the workplace, so employees have access to unload and counsel their worries. In addition, we regularly organize seminars on workplace mental health promotion to allow employees to relieve pressure.

<p>72 cases Number of feedbacks and opinions raised in 2019</p>	<p>Within 5 days Average time of reply per case</p>	<p>The top 3 issues</p> <ul style="list-style-type: none"> Plant environment issues - 26 cases (36%) Parking issues - 18 cases (25%) Catering service and information security issues - 8 cases each (11%)
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Regular convention of employee meetings



Interactive opinion section

Grievance Channels

The following grievance channels have been implemented according to the NTC Employee Protection and Grievance Guidelines, the Workplace Sexual Harassment Prevention, Grievance and Disciplinary Policy, and NTC Whistle-blower Policy: The Human Resource Department is responsible for handling improper or unfair work requests, workplace harassment and other work-related issues. Illegal, non-compliant and improper conducts involving the Company can be reported to the President's Office through mail or phone.

Labor-Management Relations and Communication

The Company has diverse, open and transparent communication channels in place to maintain harmonious employment relation, facilitate labor-management collaboration and improve workers' benefits. These communication channels allow the Company to take initiative in learning employees' thoughts and address problems in a timely manner, so the Company has positive labor-management communication. The Company also has complaint mailbox, whistle-blower hotline and sexual harassment prevention hotline available for reporting unlawful matters, and any opinions concerning corporate policies may be raised using the Management System Improvement Opinion Form. Employees are entitled to communicate openly and thoroughly with the management about work-related or personal affairs, terms of employment, salary, benefits and personal opinions through the following channels:

 <p>Communication Meetings</p> <ul style="list-style-type: none"> Regular convention of employee meetings Seminars with administrative personnel Production line workers' quarterly meetings Irregular department meetings 	 <p>Two-way communication platform</p> <ul style="list-style-type: none"> Life Space Feedbacks and opinions 	 <p>Electronic survey</p> <ul style="list-style-type: none"> Satisfaction with catering service Satisfaction with activities Employee Engagement Survey
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Talent Development ○

Talent Development System

◆ Talent development guidelines

Ideology	NTC is people-oriented and sustainability, and advocates lifelong learning while assisting employees with their career development. It is the Company's goal to create a competitive training system that is suitable for the semiconductor industry.
Policy	To improve talent quality and support employees' ongoing education and career development. To optimize the training system and offer diverse, systematic training solutions needed for employees to develop proper skills, knowledge and attitude, and thereby accomplish the Company's annual strategic objectives.
Objective	<ul style="list-style-type: none"> • 2020 Goals: Encourage employees in individual development and on-the-job training, and internal employee substitution rate for job openings reaches 60% or above. • 2025 Goals: Encourage employees in individual development and on-the-job training, and internal employee substitution rate for job openings reaches 65% or above.
System	Training procedures, education/training implementation rules, structured on-the-job training policy, on-job training management policy, internal instructors training rules, middle management and executive cultivation rules, and training materials management policy.
Implementation	Annual employee training plans are devised and executed according to corporate strategies. The Company monitors training and development indicators on a monthly basis, whereas the Employees Training & Development Committee members and senior executives conducts quarterly reviews on execution of the plans and training and development results.

Talent Development System and Management

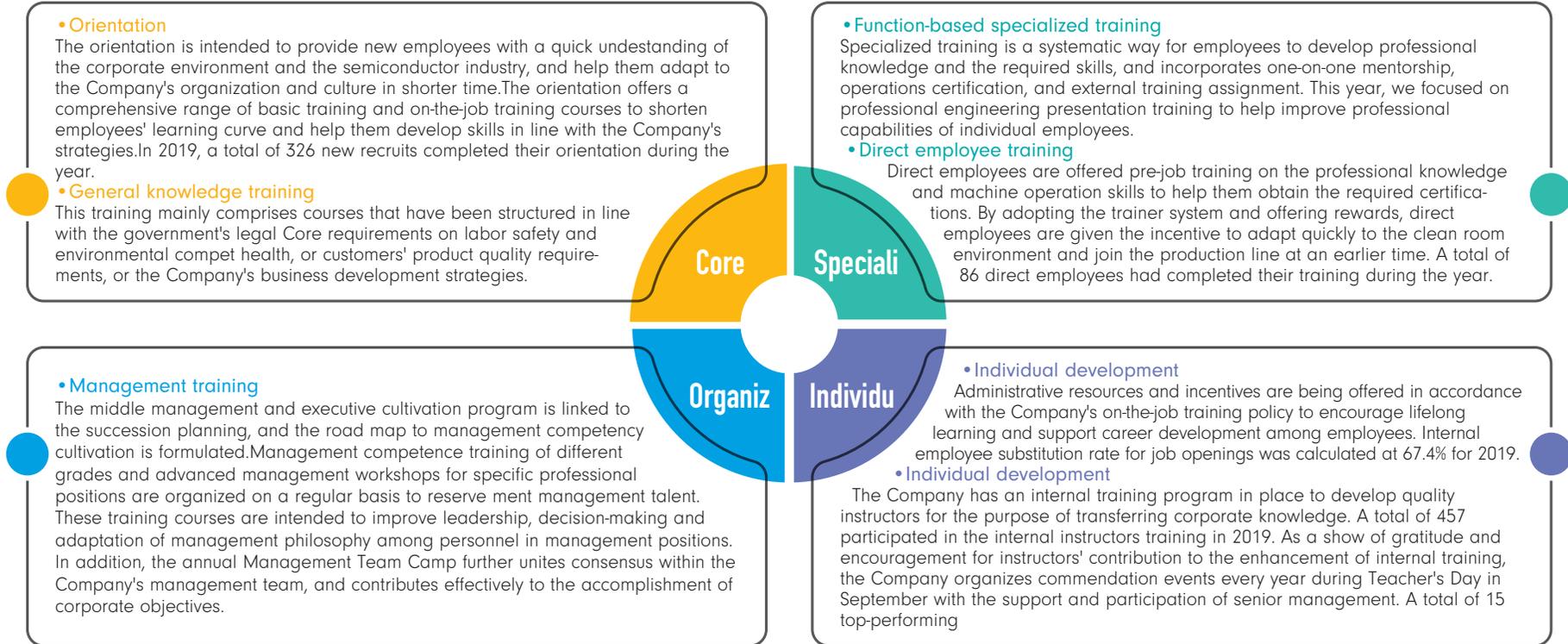
NTC's talent development system is composed of four major frames, i.e., core competencies, professional training, organization management, and individual development. The Company constantly improves its entire talent development system to offer employees better and efficient talent development system. With the aim of strengthening individual development, in 2019, we planned key talent (elite development program), employee self-learning program (linking up individual development plan, on-the-job training, and internal employee substitution rate for job openings), middle management and executive cultivation program to encourage employees to take on-the-job training courses, rotate different positions, and receive project assignment as well as expand learning tools and methods of employees' areas of expertise.



Innovative models and self-learning: (2020 self-learning development program coverage \geq 50%)

Entice employees' self-aware, initiate, and active learning attitudes, and enthusiasm for continuous and active learning; offer diverse learning resources and methods, including internal training sharing, customized professional courses, and learning through activities, such as competitions or workshops. Use education, sharing, customization, competition, and rewards to create a learning organization and transform "required to learn" into "want to learn." The training plans coverage of the 2019 self-learning development program reached 39.7%, driving the learning atmosphere of the entire organization.

The talent development management system executes classroom and e-learning courses of various themes including: orientation, general knowledge, specialist training, managerial skills, internal instructors, direct employees, and individual career development.



Department heads in Management Team Building



Award ceremony for outstanding lecturers



Talent Development Results

The Company organized 1,873 training sessions and delivered 5,982 hours of training in 2019. These courses received 103,301 enrollments and accumulated 106,886 hours in total training participation. The average training hours per person were 32.3 hours and the total training expense reached NTD 8,405,894. The significant increase in training sessions and hours in training participation in 2019 was mainly attributed to the self-learning incentives offered to various departments and the course feedback system established during the year.

◆ Employee training and average training hours

Item	▲			▼			Total		
	2017	2018	2019	2017	2018	2019	2017	2018	2019
Total main-hours of training (hours)	14,870	21,128	30,251	41,446	51,946	76,635	56,316	73,074	106,886
Total number of employees (persons)	879	925	930	2,105	2,294	2,377	2,984	3,219	3,307
Average training hours per person (hours)	16.9	22.8	32.5	19.7	22.6	32.2	18.9	22.7	32.3

◆ Average training hours by category

Unit: hours

Category	▲			▼			Total hours		
	2017	2018	2019	2017	2018	2019	2017	2018	2019
Managerial role	12.2	13.2	22.8	13.2	13.7	22.8	3,908	4,446	7,577
Professional technology	21.0	23.5	30.6	22.5	24.3	31.7	34,981	40,821	55,213
Administrative support	21.8	26.5	57.5	16.7	25.7	55.9	10,891	16,021	35,315
Direct employees	12.4	20.2	14.8	12.4	19.9	14.5	6,536	11,786	8,781

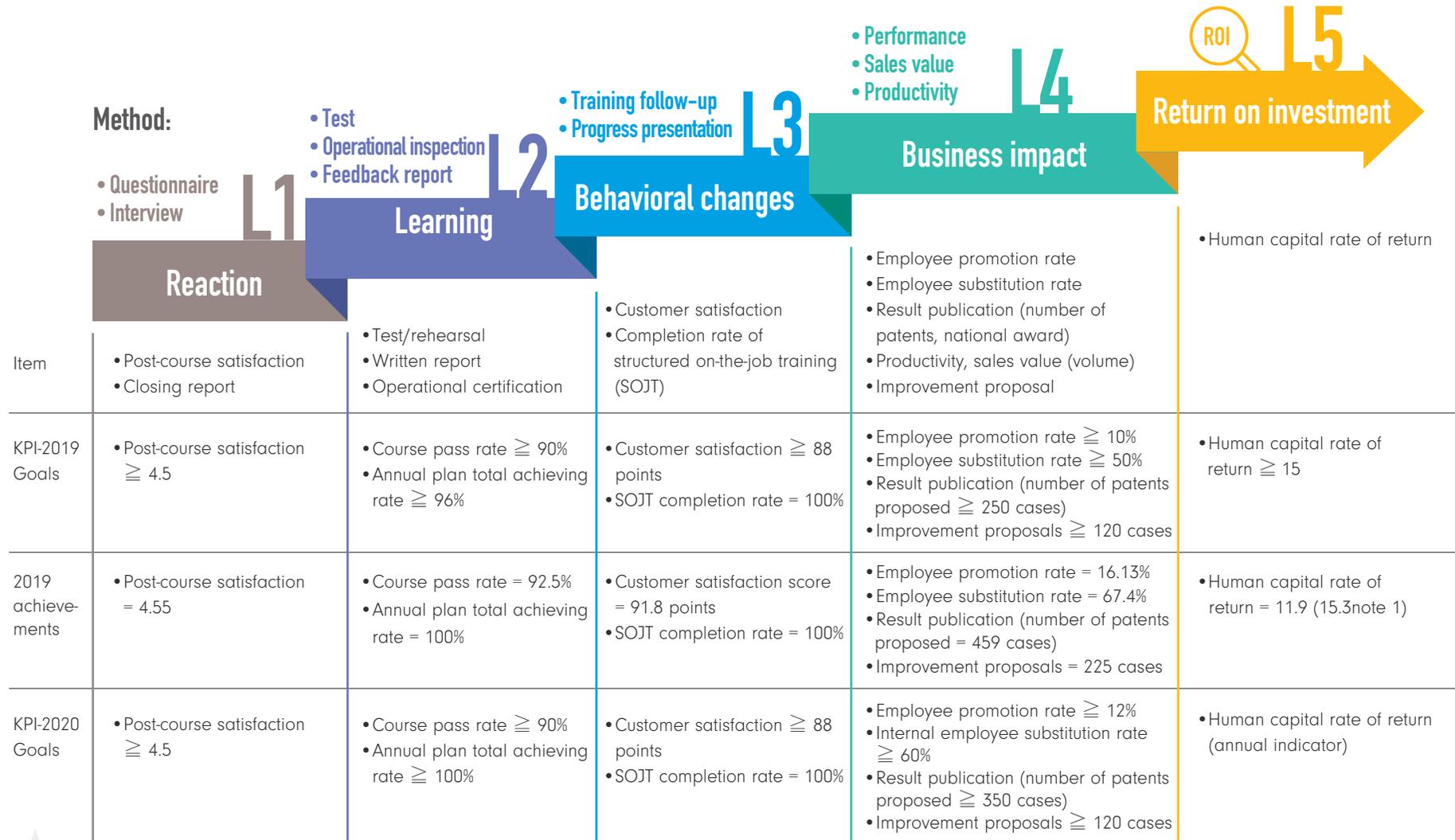
Note:

1. Employee training hours do not include training under mentorship
2. Managerial role refers to assistant vice president grade and above, plant/division head, department/section head, and production line chiefs



Training management indicator	2017	2018	2019
Total number of course sessions	981	1,786	1,873
Total number of training hours	2,524	5,689	5,982
Total enrollments for courses	22,018	38,218	103,301
Hours in total training participation	56,316	73,074	106,886
Average training hours per person	18.9	22.7	32.3
Training expense (NTD)	7,537,561	5,142,302	8,405,894
Average training expense per person (NTD)	2,526	1,597	2,542
Employee substitution rate (%)	43.0	47.4	67.4

To improve the effectiveness of implementation of training to meet the demand of the Company's strategic goals, we have adopted the Kirkpatrick model and evaluated the training courses on several levels (L1~L5). We set up KPIs for each level to evaluate the learning results after classes to ensure the diversity and completeness of the training results evaluation. Employee substitution rate (%) = number of internal opening substitution for the year/total number of internal job openings for the year*100%



Note 1: The normalization value calculated on the average market price for the human capital rate of return is 15.3

Grade	Item	2017	2018	2019	2019 Goals	Score (10 scales)
Level 5 Return on investment (ROI)	Human capital rate of return	15.3	20.8	11.9	15	8
	Productivity per employee (NT\$ K)	18,404	26,319	15,642	-	-
	Profit contribution rate of human cost (%)	201	263	171	-	-
	Return on personnel training investment (%)	485	799	313	-	-
Level 4 Result	Employee promotion rate (%)	16.08	16.12	16.13	16	10
	Promotion rate of employees with < 3 years service (%)	2.07	3.67	4.35	-	-
	Promotion rate of employees with \geq 3 years service (%)	14.02	12.45	11.77	-	-
	Turnover rate of total employees (%)	11.68	9.04	5.92	8.4	10
	Turnover rate of outstanding employees (%)	4.46	1.41	1.52	5	10
	Employee substitution rate (%)	43.0	47.4	67.4	50	10
	Number of patents (cases)	471	502	459	250	10
	Improvement proposals (cases)	47	51	225	120	10
Level 3 Behavior	Customer satisfaction (score)	88.7	90.6	91.8	88	10
	Completion rate of structured on-the-job training (SOJT) (%)	100	100	100	100	10
Level 2 Learning	Course pass rate (%)	90.6	94.1	92.5	90	10
	Annual plan total achieving rate (%)	90.8	98	100	96	10
Level 1 Reaction	Satisfaction (5-point scale)	4.51	4.72	4.55	4.5	10

Note: The decrease in ROI at Level 5 in 2019 mainly resulted from the decline in revenue caused by poor market conditions. The normalization value calculated on the average market price for the human capital rate of return was 15.3.

Experience sharing

NTC appreciates the organizer and review committee members for awarding us the 2019 NTDA for Large Enterprise. We will continue to improve our talent development system, focus on employee cultivation and development, and actively promote the ideals of talent development. A summary of key points for this award is as follows:

01. Problem analysis and key points

- Understanding the NTDA operation procedures (application information about evaluation, mechanism, timing, documents, etc.)
- Using the experience of implementing TTQS to improve evaluation items which are substandard
- Referencing and understanding the practices and experiences of award-winning enterprises
- Adopting and executing projects for the goal of winning the award

02. Issues, knowledge and tips

- Establishing control over the 11 review indicators in three aspects of the NTDA
- Preparing self-assessment sheet of the 11 review indicators in three aspects and presenting it to the review committee members
- Providing details on the Company's adoption of talent development, ongoing improvement items, and completion progress
- Preparing complete file on training programs, policies, documents and records for review
- Engaging the President to enhance senior managers' attention toward training
- Presenting professional teamwork; rehearsing at early, middle and late stages of the review process

03. Solutions and recommendations

- Acquiring first the TTQC qualifications and operating them under the NDTA framework
- Clearly displaying the requirements of the 11 review indicators in three aspects of the NTDA
- Providing talent development operation, performance, and innovative measures as well as the spread of benefits
- Showing the improvement measures and concrete performance of talent development towards target customers
- Talent development innovative action plans worth being learned by peers

04. Preparation for the review

- **Establish control over the 11 review indicators in three aspects of the NTDA**
Gather documents and proofs relating to the indicators; prepare self-assessment sheet of the review indicators and present to the review committee
- **Prepare proof of Talent development completed in previous years**
The review includes an authenticity check, and therefore requires preparation of training and development plan, policies, documents and records on file
- **Professional involvement from the senior management**
Engage the President to present professional teamwork

NTC participated in the Talent Quality-management System (TTQS) certification program promoted by the Ministry of Labor in 2018. The TTQS reviewed the training plan, design, do, review and outcome, and the Company won the TTQS Gold Medal in the Large Enterprise category. We also participated in the National Talent Development Awards (NTDA), a prestigious award in the national human resources field in 2019. The Company stood out among the many participants and received the 2019 NTDA for Large Enterprise, which again recognized our efforts to reinforce talent development.



National Talent Development Awards

Talent & Development Projects

NTC constantly improves its growth and competitiveness, and enhances its capabilities to independently research, develop, innovate the DRAM technology, the Company's core technology. We have implemented artificial intelligence to strengthen the manufacturing of our products to satisfy diverse demands of customers and markets. Based on the Company's operational strategy, we have planned technology projects and training and development programs. We would explain the main projects and training and development programs in the last 3 years and their results.

Year	Project	Training topic	Importance of the project to corporate operations	Assessment of training results and operational benefits (NT\$)	Kirkpatrick (L1~L5)	Employee participation rate (%; as a percentage of all employees)
2019	Artificial intelligence and smart manufacturing training program	<ul style="list-style-type: none"> • Work with specialist in the field, information experts, and statisticians to jointly develop AI applications • Form a technology research team, and establish basic/advanced technology practices and research projects • Train and expand the applications and development of practical projects • Set up an AI community and file related knowledge and documents 	Establish high- efficacy production lines with AI-assistance; improve the efficiency of wafer testing and yield analysis; enhance manufacturing process control, predictions about best conditions, and productivity; improve the efficiency of machinery and identify main application scenarios for machine prognostic and health management system; achieve a key milestone in smart manufacturing.	Employee response: Post-course satisfaction = 4.65	L1 Satisfaction	71%
				Employee learning: Training Course pass rate = 99.25%	L2 Course pass rate	
				Employee behavior: SOJT completion rate = 100%	L3 Structured on- the-job training (SOJT)	
				Employee performance: Technology project: Completion of basic theory learning, including 22 items in machine learning algorithm, and 11 items in deep learning algorithm; completion of 7 research projects.	L4 Technology project	
				Efficiency improvement: 1.Completion of 38 AI projects in smart manufacturing technology improvements: 21 items using deep learning models, 10 items using machine learning models, and 7 items using mathematical rules 2.Benefits: • Labor costs: 27.7 (person/day) (equivalent to NTD 14 million) • Revenue contribution: NTD 176 million (Including costs of maintenance and consumables, increases in production capacity, and benefits of yield improvement) • Potential benefits of productivity: NTD 50 million	L4 Productivity	
			Finance value: NT\$ 240,000,000 (ROI: 56%)	L5 Return on investment		
2019	R&D in 10nm process and development and expansion in 20nm non-standard product	<ul style="list-style-type: none"> • Development of 10nm DRAM new type memory cell technology • Key memory technologies, such as memory array and core circuit • Standardization of mask manufacturing technology • Expansion of non-standard product servers and low-power and automobile/industrial products 	Breakthroughs in key technologies and establishing a company with capabilities of independent R&D, innovation and technologies; breakthroughs in production capacity and technologies and increasing in sales profits and value of our products; laying the foundations for sustainable operations.	Employee response: Post-course satisfaction = 4.52	L1 Post-course satisfaction	82%
				Employee learning: Training Course pass rate = 92.20%	L2 Course pass rate	
				Employee behavior: SOJT completion rate = 100%	L3 Structured on- the-job training (SOJT)	
				Efficiency improvement: Completion of 91 product R&D and validation tasks, 137 productivity proposals, and 225 improvement proposals Output volume: Sales of non-standard products > 44M (piece)	L4 Productivity	
				Result publication: A total of 459 patents	L4 Result publication	
			Finance value: NT\$ 2,401,854,240 (ROI: 573%)	L5 Return on investment		

Year	Project	Training topic	Importance of the project to corporate operations	Assessment of training results and operational benefits (NT\$)	Kirkpatrick (L1~L5)	Employee participation rate (%; as a percentage of all employees)
2018	Training program for advanced procedure/ niche DRAM development	<ul style="list-style-type: none"> • Training on advanced procedures/new procedures/niche products • Conference skill training for project managers • Managerial skill training for managers • Training for them- improvement of training program 	As the Company progresses into the next-generation production procedure (20nm), new marketing and product strategies are required to support development of this advanced procedure as well as demand for niche DRAM products. This training program has the potential to improve the Company's product competitiveness and stabilize product margins.	Employee: SOJT completion rate = 100%	L3 Structured on- the-job training (SOJT)	85%
				Efficiency improvement: A total of 239 product R&D/validation enhancement/advanced procedure adoption/productivity improvement tasks were completed, and 51 improvement proposals were raised	L4 Productivity	
				Output volume: > 950M	L4 Productivity	
				Finance value: NT\$ 2,045,604,729 (ROI: 783%)	L5 Return on investment	
2018	Talent development system enhancement program	<ul style="list-style-type: none"> • Market planning and sales competitiveness enhancement course • TTQS evaluation • Professional skill enhancement on all management levels 	Given the Company's talent and technology- intensive nature, it is important to implement an effective and technology-focused training program that not only aligns with the Company's strategic goals, but also improves employees' professional skills, know-how and increases sale of next-generation products.	Result publication:	L4 Result publication	82%
				1. A total of 502 patents 2. Won Ministry of Labor's TTQS evaluation - Gold		
				Finance value: NT\$ 649,451,446 (ROI: 855%)	L5 Return on investment	
2017	Advanced DRAM procedures and product development training program	<ul style="list-style-type: none"> • Training for new procedures and product conversion • Project management and execution training • Training for the improvement of training program 	This program has enabled the company to successfully adopt next-generation production procedures (20nm) and develop proprietary R&D capabilities for a number of benefits including reduced product cost, increased production capacity, enhanced product competitiveness, and sustainable operations.	Employee: SOJT completion rate = 100%	L3 Structured on- the-job training (SOJT)	86%
				Efficiency improvement: Implementation of new procedures and products and productivity. A total of 717 production enhancement tasks were completed, and 47 improvement proposals were raised	L4 Productivity	
				Result publication: A total of 471 patents	L4 Result publication	
				Finance value: NT\$ 3,602,699,075 (ROI: 530%)	L5 Return on investment	

Diverse Development and Learning Paths

NTC provides employees a variety of on-the-job training and learning methods to promote lifelong learning, and assist employees with career development. Thus, we have planned diverse learning channels so as to expand their scope of learning.

Online learning video center

To provide a more flexible method and environment for learning we established a video center to offer employees digital learning environment.



Language learning subsidies

- The Company's "language learning subsidy program" subsidizes employees for taking internal English courses. In addition, the Company collaborates with external language training institutions to offer training opportunities.
- A "TOEIC Exam Simulation System" was set up within the Company for employees to practice, and the Company also organizes simulation exams to prepare employees for the real event. In addition, the Company sets targets for TOEIC scores.

On-the-job diploma

Subsidies and incentives are being offered in accordance with the Company's on-the-job training policy to encourage employees to participate in on-the-job training courses outside work hours and help them in individual development and attaining new degrees.

Participation in external courses

We encourage employees to obtain certifications relevant to their works through participation in external training courses, as this is likely to enhance employees' capabilities in product development and innovation, which continues to increase product value.

	2017	2018	2019
Total online class hours (hours)	10,958	14,408	25,987
Language learning subsidies(NTD)	194,660	447,466	403,070
Accumulated number of employees taking on-the-job diploma courses (person)	696	699	708
Number of participants in external training courses (person)	113	171	279

In addition to the diverse learning platform and classroom courses, the Company regular holds interdepartmental knowledge sharing conferences each year, including: I share and share love, TED TALK, i-change, and i-future activities, so as to offer diverse learning paths and strengthen learning results.



i-future sharing activity

Diverse on-the-job training and learning channels

Digital platform
Online training
Streamed video

Outsourced training
Practical learning
External training assignment

Course
Seminar
Workshop

Talent reserve
Employee development
Elite program

On-the-job training
Counseling for new recruits
Mentorship

Knowledge management
Online think tank
Social media sharing

Maximizing Employee Performance

The purpose of NTC's performance management system is to maximize employees' potentials. In addition to providing good learning environment and implementing sound performance management systems, the Company also emphasizes productive interaction between line managers and their subordinates. Apart from annual performance evaluation, line managers are also required to engage subordinates in quarterly performance reviews. Through interaction and communication, employees are given the care and assistance they need to improve and accomplish individual as well as organizational goals.

The review process begins with the line manager breaking down organizational goals and setting individual work objectives for subordinates face-to-face, and is followed by feedbacks on the execution of work objectives and performance review at the end of the period. Between 2015 and 2019, 100% of employees were subjected to objective management and performance ranking. Performance management tools used by the Company in 2019 included: annual performance evaluation for all employees, and 180- & 360-degree performance evaluation for managers. Using different talent development tools, the Company offers suitable work performance improvement opinions to employees of all grades.

180-degree performance evaluation is intended for section managers and above, and involves review from 4~6 colleagues or managers that the subject has business dealing with, as chosen by the line manager. 360-degree performance evaluation is intended for plant and division managers and above, and involves feedbacks from subordinates on the subject's managerial skills. Details of the 180-degree performance evaluation (involving colleagues) and the 360-degree performance evaluation (involving subordinates) are shown in the table below. In 2019, 10% of the Company's employees were subjected to multi-dimensional performance evaluation. Employees who exhibit good performance are rewarded; for those who exhibit poor performance, the system actively reminds their line managers to direct attention and provide assistance until there is significant improvement in performance. This treatment is not differentiated by gender in any way.

◆ Assessment criteria of the 180- and 360-degree performance evaluation

Category	180-degree performance evaluation by peers	360-degree feedback by subordinates
Assessment item	Work attitude	Excellence
	Teamwork	Decision-making skills
	Communication skills	Innovativeness
	Execution skills	Leadership
		Communication



Occupational Safety and Health

ISO 45001 Occupational Safety and Health Management System

With the joint efforts of senior executives and all employees, NTC passed the system conversion certification of ISO 45001:2018 in August 2019. The President also signed the occupational safety and health policy, promising that NTC would offer its employees a safe, healthy, and good working environment. Meanwhile, an occupational safety and health management manual was formulated to allow all employees to have abilities to prevent hazards when conducting business activities to prevent occupational accidents. The Company reviews updates on local laws and regulations and its compliance on a monthly basis, and conducts regulatory and hazard identification and risk assessment each year. If process change management process occurs, the identification and assessment will also be conducted. In addition, the Company conducts risk assessment on regular and irregular high risk operations to control, monitor, and minimize risks. The Company continues to arrange special health checkups for high-risk employees, including those exposed to noise, chemical substances (arsenic/mercury/indium) and ionizing radiation, and classifies employees based on check-up results for health management.

◆ 2019 execution of occupational safety and health management



◆ Items of Execution and Results

Item	Execution	2019 results
Safety and health regulations	Formulating safety and health regulations and executed accordingly	Completed updates on regulation documents in response to ISO 45001 system conversion
Regulatory identification	Reviewing updates on local laws and regulations and the Company's compliance on a monthly basis, and auditing each unit with a regulatory identification checklist each year	Completed modifications for 8 updates on regulations (guidelines) and audited each unit with a regulatory identification checklist of six major regulations
Hazard identification	Conducting regular and irregular hazard identification of operations and environment	Finished 7,034 items
Occupational accident prevention	Forming an occupational accident prevention investigation group to investigate causes when an accident occurs, and making ongoing improvements	No occupational accident occurred
Training and education on health and safety	In addition to arranging training courses for certifications required by regulations, special hazardous operations, and emergency response team (ERT) personnel for new employees, senior employees, and supervisors, the Company holds seminars on health and safety issues and professional defensive driving course, and places education posters regarding health and safety at workplace on a monthly basis.	A total of 270 training hours with 4,637 participants; A total of 60 participated in the defensive driving course at the plant taught by the Banqiao Motor Vehicles Office
Emergency response	Planning emergency response plans and conducting emergency response drills for moderate and high risk items specified in hazard identification	Completed 47 emergency response drills
Operating environment monitoring	Planning sampling strategy and conducting operating environment monitoring once every half-year, analyzing results and reporting	A total of 314 items were monitored and reported, and the testing values of chemicals were all below the allowable concentration.
Chemical management	Providing a chemical safety data sheet (SDS); classifying and managing chemicals	A SDS was placed on site and a checklist of chemical classification and management was completed.
Change management	Holding regular equipment safety meetings to review change management items	Finished improving the suggested items
Contractor management	Contractor review system, pre-work safety notice, contractor in-plant training, work permit application, daily toolbox meetings, high risk operations (such as confined space), and job safety analysis	A total of 2,662 people passed the contractor in-plant safety and health training. 100% of contractors had passed the training to date.
Job safety analysis	Holding regular and irregular job safety analysis meetings	Finished improving the suggested items
Observation and interviews for job safety	The Safety and Health Department arranges observation and interviews for job safety with on-site employees of each unit on a monthly basis, and arranges team leader and above of each unit to receive observation and interviews with their subordinates on site on a quarterly basis.	The Safety and Health Department arranged 36 topics and raised 28 improvement proposals.
Health management and improvement	Conforming with the Health Center under the Human Resources Division to plan and implement four major health management programs	Performance of the four major health management programs was reviewed monthly by the Occupational Safety and Health Committee
Audit plans	Planning internal audit plans and auditing the compliance of systems accordingly	100% improvement completion rate of audit defects
Ongoing improvement measures	Each unit makes safety and health improvements and raised proposals	A total of 29 ongoing improvement proposals were raised by all units.

◆ Safety and Health Improvement Proposals and Measures

	2017	2018	2019
Number of improvement proposals	25	27	29
Improvement of moderate-high risk issues (number of cases/details)	16	17	13
Item	Installation of ventilation equipment for laboratory, work isle improvement, emergency response drill, installation of forklift sensor, and installation of supply truck safety harness for reducing operational risks	Installation of water absorption device, ladders and maintenance platforms for elevated operations, and improved ventilation for reducing operational risks	Installation of oxygen concentration detector, area lighting improvement, improved the efficiency of local ventilation equipment in clean rooms and laboratories, and installation of anti-fall fences for reducing operational risks
Corrective measures (number of cases/details)	5	3	5
Item	Traffic safety improvement, valve fluid leakage prevention	Office air conditioning improvement, pipeline support enhancement and repiping	Installation of electrical copper bar insulation protection, valve fluid leakage prevention, and traffic safety of scooter-riding
Project improvements (number of cases/details)	4	7	11
Item	Job safety analysis (JSA) project	Traffic safety project	Earthquake hazard prevention project

Safety and Health Organizations and Performance Indicators

NTC attaches great importance on occupational safety and health, and convenes Occupational Safety and Health Committee meetings on a monthly basis, which is better than the regulated frequency. The meetings are presided over by the Executive Vice President, and attended by senior executives, department heads, and committee members, of which 34% are labor representatives. They jointly review the attainment of safety and health management goals, and the performance of safety and health projects. The Company's tireless efforts to improve safety and health was recognized by receiving the 8th Industrial Safety and Health Award - Excellent Unit - Outstanding Practice from the New Taipei City government for the first time in June 2019.



Industrial Safety and Health Award - New Taipei City Mayor Hou Yu-ih and the Executive Vice President of NTC

Disabling injuries frequency rate (No. of disabling injuries/million work hours) and disabling injuries severity rate (No. of work days lost/million work hours) were both 0 in 2019, meaning that the Company had achieved zero disabling injury. The Company will strive to maintain zero disabling injury in the future.

◆ Employee absence rate, occupational illness, and number of resigned employees owing to occupational accidents

	2017		2018		2019	
Disabling injuries frequency rate (FR)	0		0		0	
 	0	0	0	0	0	0
Disabling injuries severity rate (SR)	0		0		0	
 	0	0	0	0	0	0
Frequency-severity indicator	0		0		0	
 	0	0	0	0	0	0
Absentee rate (AR)	0.34%		0.45%		0.44%	
 	0.10%	0.24%	0.19%	0.26%	0.20%	0.24%
Number of occupational illnesses certified by physicians	0		0		0	
 	0	0	0	0	0	0

Note:
 1. Disabling injuries frequency rate (FR) and disabling injuries severity rate (SR) are based on occupational hazard data reported by the Company, and do not include contractors, traffic accidents outside production facilities, or minor injuries (that can be treated via first-aid on site).
 2. Absence rate (AR) = total hours absent (including inpatient leave + outpatient leave + occupational injury leave + menstrual leave)/total work hours*100%.

◆ Employee total work hours, number of injury cases, and number of work days lost

	2017	2018	2019
Total work hours (hours)	5,278,224	5,974,816	6,398,888
Number of injury cases	0	0	0
Work days lost	0	0	0



Contractor Management

NTC has formulated contractor safety management regulations, including contractor review system, pre-work safety notice, contractor in-plant training, pre-work job safety analysis, work permit application, high risk operation control (such as open fires, confined space, ladders, hoist, live electrical connection, chemicals, etc.), daily toolbox meetings, and contractor checklist of before/during/after work, to provide all workers a safe working environment and achieve the goal of contractor's zero occupational accident.

Selection of Quality Contractors

In order to strengthen and optimize safety measures, we have implemented a grading system for all contractors that undertake construction works outsourced from the Company. The system exists not only to control contractors' quality and safety standards, but also to protect their employees from occupational injury.

By investigating contractors' professional background, factory location, equipment, work site safety management capabilities and track records, the Company rates its contractors by competency and assigns one of three grades: A, B or C. Contractors that meet grade requirements are eligible to issue quotations for construction projects of appropriate specialization and size, whereas those that do not meet the grade requirements may apply for upgrade review. The Company convenes regular supplier conferences and assists suppliers with upgrades by reviewing improvements in areas such as specialization, work safety personnel, professional technicians, key technical personnel, business partners, work equipment, and track records.

Contractor Work Safety Review System

NTC values contractors' employees as our own, so contractors' safety has always been a key safety and health management concern for us. To facilitate construction projects, the Company devotes attention not only to work quality and progress, but to safety and environmental management as well. In addition to existing systems on outsourcing management, contractor work safety review and work safety training, the Company introduced pre-work health check and training courses this year to ensure workers' compliance with safety requirements and safety conducts. Through these measures, we hope to accomplish our goals toward zero hazard and zero accident.

NTC has formulated contractor management policies and systems, and imposes the same safety and health standards for contractors' employees as do its own. The Company ensures construction quality at the source, and uses computerized control from design, budgeting, outsourcing to the work stage. Only the top-performing contractors are selected for plant expansion or maintenance. A certification-based training system has been adopted as means to improve contractors' work skills and safety awareness, and reduce the probability of occupational hazard.



Daily Toolbox Meetings

To ensure that the contractors do take safety measures to prevent accidents and eliminate occupational hazards during work activities, the Company explicitly informs contractors of the work environment they are presented with as well as the safety and health measures they are expected to take during the tender stage. Once the work has been assigned, the winning contractor will be strictly required to follow applicable rules, including the convention of daily toolbox meetings to announce work site rules and confirmation of work site safety before commencing work each day. All uses of temporary facility, safety/health facility and pollution control measure and disposal of waste and soil by contractors during the work period are bound to comply with relevant laws and corporate policies. Any occurrence of work safety incident due to non-compliance will result in work suspension or termination of further business dealings.

Employee Healthcare

The Company collaborates with professional medical team from Chang Gung Hospital to provide annual health check service for employees. A total of 1420 employees had completed their health checks in 2019, for which the Company incurred total expenses of NTD 1,699,405. Employees who exhibit abnormal health check results are tracked on an ongoing basis and subjected to health management. All of our factories have a medical room with a physician stationed on site to provide employees with professional medical and consultation services. Seminars on spirituality and health and healthcare courses are arranged each quarter to meet employees' need for knowledge on physical and mental health.

Enforcement of Health Promotion

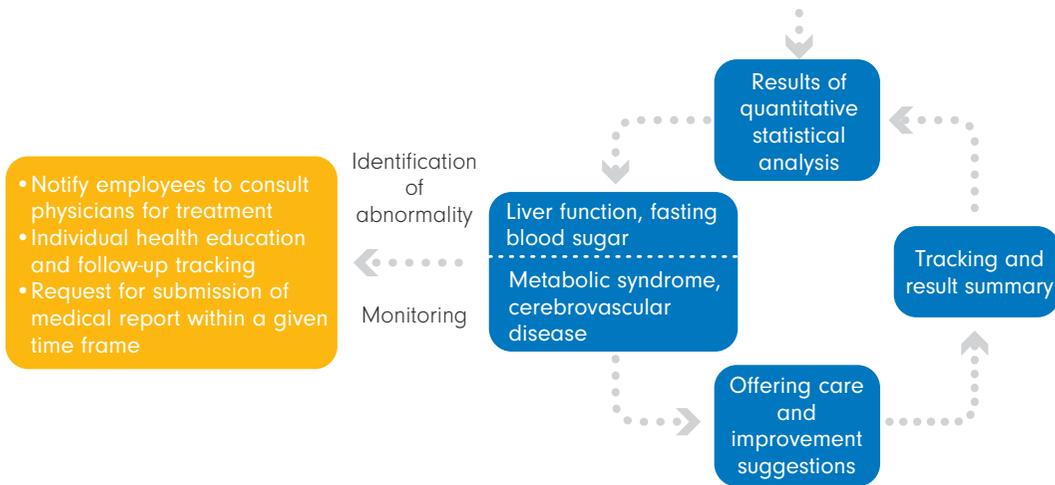
The Company offers regular employee health check services that are more favorable than what the laws require, and the health checkup also includes cancer screenings for α -Fetoprotein, carcinoembryonic antigen and oral cancer and waistline monitoring. Based on the health check results, the Company identifies employees who exhibit abnormal health conditions (such as liver function, blood sugar level, metabolic syndrome, cerebrovascular disease, etc.) and provides them with healthcare information, suggestions and follow-up tracking.

	Abnormal blood pressure	Abnormal liver function	Abnormal blood sugar level	Metabolic syndrome	Low risk	Moderate risk	High risk	Total employees completing health checks for the year
2016	11.56%	5.17%	1.35%	22.14%	83.76%	16.24%	0	813
2017	9.79%	5.37%	1.37%	18.95%	85.79%	14.21%	0	950
2018	8.55%	7.08%	1.18%	16.91%	90.26%	7.77%	1.97%	1,017
2019	3.87%	4.58%	1.76%	11.48%	86.90%	10.62%	2.48%	1,420
							Total	4,200

Number of contractor injury cases, and number of work days lost

Year	2017	2018	2019
Number of injury cases	0	0	0
Work days lost	0	0	0



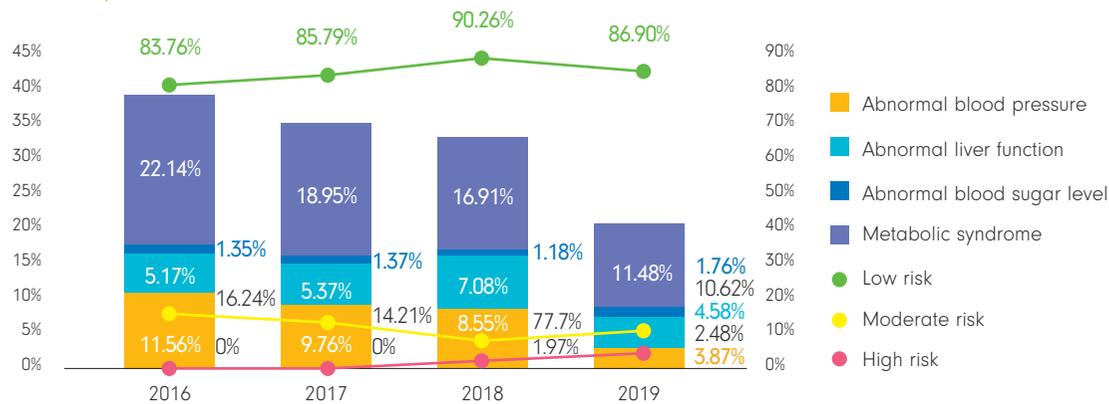


In addition to arranging health check for employees, the Company also has a Health Center available to provide services such as preliminary treatment of injuries, preventive healthcare, weight management, and smoking cessation consultation. Furthermore, the Health Center organizes health seminars, blood donations, stress relief workshops and technology-based fitness programs to promote preventive healthcare and reduce risks of illness. These events receive at least 300 enrollments on a yearly basis.

Response to Epidemic Disease

The Company has assembled an Epidemic Response Team based on recommended practices for SARS and avian influenza to facilitate quick response in the outbreak of epidemic disease, such as influenza virus. Response measures are being devised and conveyed to employees on an ongoing basis. At the end of 2019, when few COVID-19 was confirmed, the Company immediately set up the Epidemic Response Team to prepare and drill for possible outbreak of the disease.

Health promotion



Note: Risk identification is calculated based on the figures of health checks (age, cholesterol, HDL-C, blood pressure, diabetes, and duration of smoking) to estimate the probability of occurrence of ischemic heart disease in ten years.

Epidemic prevention promotion

- Influenza virus response measures are announced internally.
- Large posters are placed throughout plant premise to convey the importance of epidemic prevention.
- Distribution of self-health management notice

Epidemic prevention measures

- Reporting, containment and epidemic prevention leave.
- Epidemic prevention for contractors and visitors





Good Muscle Strength Enhances Workplace Vitality



AED+ CPR



Weight-loss activities



Blood donation activities



2019 health checkup



Pap test

