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2015

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ABSTRACT

Authors concern the perception of ancient Japanese security culture model, created by the noble class of warriors – Samurai. Their security culture code was a constant model, composed from several Far Eastern philosophic and religious systems, and practiced for ages during the period of isolationism as well as in the modernization era of Meiji (19th century). Its modern version was used by the management of Toyota concern to create an unique and highly-effective model of production. This model, based on fourteen rules, is an universal one, used by companies form different sectors with great benefits.

ARTICLE INFO

I. Social and philosophical-religious genesis of the Japanese concept of security management

It can be noticed that both in Japan and worldwide currently exists a group of people applying, as a result of a conscious choice, to the ideals of the Samurai code of honor *bushido*, because Far Eastern practices, combining stability and change[1], have both utilitarian and timelessness dimension. Constant

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[1] M. Aluchna, P. Płoszajski, *Zarządzanie japońskie. Ciągłość i zmiana*, Szkoła Główna Handlowa, Warszawa 2008.

fidelity to ideas, combined with adaptability, recommended by Confucius (having contribution to the concept of *bushido*), has been confirmed as an appropriate strategy for *security* of human existence and effectively stimulated human development. Such an attitude also gives a lot of opportunities for building a coherent and dynamic security culture[2] in each social body – family, professional group or society creating a nation. National security culture allows to improve the phisycal dimension of self-defence and functions in several different dimensions[3]. Probably for this reason, during the Meiji modernization reforms period (19th century), Japanese Emperor Mutsuhito with the elites of samurai origin, officially renewed his allegiance to the *bushido*[4] and his virtues, which include:

1. integrity – *gi* and based on it wisdom – *chi*,
2. courage – *yusha*, necessary for all who rise their commitment to the level of combat (also the hardest, no-armed combat),
3. kindness – *jin*, that strengthens social support and leads to trust,
4. respect, courtesy – *rei* and honor – *meiyo*, that civilizes customs and builds trust,
5. loyalty – *chūgi*, hardening trust and building a strong social bonds,
6. honesty, fairness – *makoto*, *shin*, the roots of responsibility,
7. family pietism – *ko*, transferred to the society, allows to take full advantage of the experience of the elderly,

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[2] The first pillar of security culture is, according to Marian Cieślarczyk, the mental pillar, including in its construction the spiritual, values, rules, knowledge elements and the moral standards. The concept erects also the second pillar, containing the elements of organizational and legal culture (legal regulations, organizational structures, procedures, innovations etc.) and the third pillar composed of elements of material culture (infrastructure, technical and scientific equipment, weapons, places of work etc.); M. Cieślarczyk, *Fenomen bezpieczeństwa i zjawisko kryzysów postrzegane w perspektywie kulturowej*, [in:] *Jedność i różnorodność. Kultura vs. kultury*, E. Rekłajtis, R. Wiśniewski, J. Zdanowski (ed.), ASPRA-JR, Warszawa 2010, p. 96; comp. M. Cieślarczyk, *Kultura bezpieczeństwa i obronności*, Akademia Podlaska, Siedlce 2011.

[3] T. Ambroży, *Samoobrona. Podręcznik metodyczny dla instuktorów rekreacji*, ZG TKKF, Warszawa 2001; comp. T. Ambroży, J. Piwowarski, *Współczesność, tradycja i bezpieczeństwo jako znamienne aspekty wszechstronności all style karate*, „IDO – Ruch dla kultury", 2008, nr 8, p. 86–95.

[4] *Reskrypt Cesarski do Żołnierzy i Żeglarzy*, [in:] A. Ślósarczyk, *Samuraje (japoński duch bojowy)*, TWW, Warszawa 1939.

8. self-control – *kokki*[5], that allows individual and social progress, well defending against chaos and sloth of development.

These dispositions probably have universal dimension and their functioning does not have to be limited to *acting–in–security persons* from the Japanese cultural circle. They are also an essential part of the first pillar of a security culture.

Security culture[6] is the whole material and nonmaterial elements of embedded legacy of people in military and nonmilitary spheres – that is, the widely understood autonomous defence of active persons or entities. This phenomenon is a trichotomy, that create three overlapping dimensions:

- mental and spiritual (individual dimension),
- legal and organizational (social dimension),
- material.

"Interesting for the people of the West can be the fact that Christian Japanese coming from Samurai families played a crucial role in promoting Bushido philosophy for contemporaneity (*Modern Bushido*). They included Uchimura Kanzo (1861–1930) born in Edo (further Tokyo), Nitobe Inazo (1862–1933) and Miyabe Kingo (1860–1951). They composed *Bushido* to an *Old Covenant*, acting in favour of the Far Eastern New Covenant which is a synthesis of both Bushido and Christianity"[7].

Whatever is your choice of spiritual master, the most important element, characteristic for Far Eastern systems, part of which is the code of *bushido*, is participating support of the Way of the Warrior, adopting the shapes of philosophy of action[8] and philosophy of security[9]. We should add that "philosophy" becomes here an expression of a systematic strategy of training skills and obligation to use common sense in making choices and decisions.

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[5] Por. J. Piwowarski, *Siedem cnót Bushido*, „Zeszyt Problemowy. Nauka – Praktyka – Refleksje", Apeiron WSBPI, 2011, no 5, p. 9–19.

[6] J. Piwowarski, *Ochrona VIP-a a czworokąt bushido. Studium japońskiej kultury bezpieczeństwa*, [in:] *Bezpieczeństwo osób podlegających ustawowo ochronie wobec zagrożeń XXI wieku*, P. Bogdalski, J. Cymerski, K. Jałoszyński (ed.), Wyższa Szkoła Policji w Szczytnie, Szczytno 2014.

[7] W. Czajkowski, J. Piwowarski, *Administracja z ludzką twarzą. Modern Bushido*, „Zeszyt Naukowy Apeiron", WSBPI Apeiron, no 2, 2010.

[8] Comp. S. Brzozowski, *Filozofia czynu, Monistyczne pojmowanie dziejów i filozofia krytyczna*, [in:] *Brzozowski*, W. Mackiewicz (ed.), Wiedza Powszechna, Warszawa 1983.

[9] J. Piwowarski, L.F. Korzeniowski, *Przydatność dalekowschodnich koncepcji filozofii i kultury bezpieczeństwa dla polskich służb mundurowych*, [in:] *Nauka o bezpieczeństwie. Istota, przedmiot badań i kierunki rozwoju*, L. Grochowski, A. Letkiewicz, A. Misiuk (ed.), Wyższa Szkoła Policji w Szczytnie, Szczytno 2011.

It is why the tradition of *bushido*, due to its military pedigree, is a philosophy of security identical to daily practice, connected with ethics of virtue[10].

However, it should be noted that the application of rules of building *security culture* based on the rules of *bushido* code is possible only when the internalisation of Samurai principles takes place in accordance with the practice of *budo*.

In Japan, this concept is named "learning with the whole body" (*karada de oboeru*)[11], which means that the beneficiary of so implemented security philosophy may just be the one who trains every day, the body and the mind at the same time – and is not a theorist, even a best one. For the descendants of the Samurai this means contact with the martial art and the launch of the transfer[12], in order to improve its action in areas other than fight. Let us for a moment turn to the characteristics of the phenomenon known as the *martial art*.

According to Juliusz Piwowarski, **martial art is a sphere of security culture** associated with fighting systems described by a detailed codification, based often on Far Eastern inspirations, influencing the techniques, methods and customs, associated with the socio-philosophically-religious, as well as utilitarian prerequisites.

Martial art results in protection and raising the level of security of individuals and groups through exercises, resulting in **multi-faceted development** of the following components:

1. possibility of **effective countering the threats** from humans and other civilization-based – military and civil, nature or sports competition,
2. the possibility to maintain, save **and improve the quality of life**, including health security and moral and aesthetic values, mutually interpenetrating and strengthening in the individual and social dimensions,
3. possibility to rely during **entire life** on, involving mind and body, perfectionistic method of self-improvement,

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[10] N. Szutta, *Status współczesnej etyki cnót*, „Diamestros" no 1, 2004, p. 70–84.

[11] B. L. de Mente, *Samuraje a współczesny biznes*, Bellona, Warszawa 2006.

[12] *Transfer* – in psychology transfer of skills includes also the transfer of habits and reflexes acquired in the framework of learning one of the areas on a completely different area. For example, it may be a watchmaker's habit of order and perfection used in precise plan of rescuing the hostages.

4. the level of **combat skills** enabling capabilities and determining to take the **fight against internal and external adversities of acting-in-security persons**, such as negative intentions and emotions[13].

Part of the process of self-improvement carried out on the basis of martial art (*budo*) is the practice of meditation. It is a factor, omission of which would most likely preclude the fullness of self-realization, and which at the same time is responsible for the manufacturing of intellectually enhanced mechanism of action[14]. Apart from the possibility of achieving the highest state of mind, known as the enlightenment, meditation allows to significantly improve the functioning of the body acting-in-security persons or entities – physical health as a component of *human capital*, the psyche and psychophysical self-control. Let us recall that human capital is a "resource of knowledge, skills, health and vital energy contained in a given society (nation). Human capital is a resource that can be the source of future satisfaction or, generally speaking, services of given value"[15]. Meditation can also be used to achieve greater efficiency in your daily endeavors. This corresponds to the *bushido* concept derived from *teiogaku* – education for being an emperor, which probably has a strong effect on these contemporary attitudes, that are the desired elements in shaping the organization's leadership and management, as in business, as well as in other fields – politics, crisis management, the military or education. Security management of human existence is a task for the objective that is the realization of a need to give a sense of a daily existence of man. This requires a deep reflection and should lead to adoption of what is identified as the rules to obey. Selection of a specific way to achieve this aim is determined by specific rules – hence comes the "human security administration" phrase[16]. *The meaning of life* can be found with the help of an old, functioning in the humanistic theory of *budo* that is

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[13] Por. J. Piwowarski, *Samodoskonalenie i bezpieczeństwo w samurajskim kodeksie Bushido*, Colegium Collumbinum, Kraków 2011, p. 122–123.

[14] *Action – social actions* theory of Max Weber has been developed by Talcott Parsons. *Actions* according to Weber, is a human behavior that are marked by a sense of. Parsons, in turn, put more importance to activities and interaction related to the social roles. Weber stood out the following types of actions: 1. *rational actions* (also known as value-rational actions); 2. *rational-affective actions* (emotional) performed for socially recognised values; 3. *Traditional* based on habits from existing cultural patterns.

[15] S. R. Domański, *Kapitał ludzki. Stan i perspektywy*, [in:] *Raport Rady Strategii Społeczno-Gospodarczej przy Radzie Ministrów*, Warszawa 1998, no 27, p. 67.

[16] G. Michałowska, *Bezpieczeństwo ludzkie*, [in:] *Świat wobec współczesnych wyzwań i zagrożeń*, Scholar, Warszawa 2010, p. 43–60.

identical with the concepts of worldwide known code of honor (*bushido*)[17]. Alfred Adler (1870–1937) underlines that the meaning of life of an individual is not only as a personal thing, because it is also imperative for acting for other members of society[18]. For finding and protecting of the *meaning of life* helpful can be the religious systems[19], philosophical concepts[20], praxeology experts[21] and psychologists[22].

To understand the source of the efficacy of *Japanese management* and its organizational culture, you need to know the socio-philosophical and religious origins of the Japanese mentality, but also keep in mind that over time the Japanese acquis became available throughout the globalized world. However it began in antiquity, and long remained unknown due to the former "hermetic" of Islanders.

Interpenetration of Japanese own beliefs with Buddhism coming from India, and Confucianism from China, containing elements of Taoism, created in Japan, together with the local shinto cults, specific, beneficial for security management, *social cohesion*[23], referred to as "unity of four religions"[24]. During the Tokugawa era, which had a lot of meaning for

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[17] W. J. Cynarski, *Słownik pojęć*, „Ido. Ruch dla Kultury", 2010, no 2, p. 92.

[18] Considerations of this chapter partially coincide with issues touched by J. Piwowarski, *Etyka funkcjonariusza policji. Źródła, motywacje, realizacja*, Wyższa Szkoła Bezpieczeństwa Publicznego i Indywidualnego „Apeiron" w Krakowie, Kraków 2012.

[19] XIV Dalailama Tenzin Gjatso, *Sens życia z buddyjskiej perspektywy*, Wydawnictwo A, Kraków 2007.

[20] See J. M. Bocheński, *Sens życia i inne eseje*, Philed, Kraków 1993.

[21] *Praxeology* – theory of efficient acting. One of the well-known representatives was Pole, Tadeusz Kotarbiński (1886–1981), author of: *Medytacje o życiu godziwym*, Wiedza Powszechna, Warszawa 1986; *Żyć zacnie*, Nasza Księgarnia, Warszawa 1989. Comp. L. Drabik, E. Sobol (ed.), *op. cit.*, vol. 2, p. 125.

[22] Comp. A. Adler, *Sens życia*, PWN, Warszawa 1986; V. Frankl, *Człowiek w poszukiwaniu sensu*, Czarna Owca, Warszawa 2009; T. Kotarbiński, *Medytacje o życiu godziwym*, Seta Enterprises, Warszawa 1994, p. 18–23.

[23] The level of cohension of the social group is determined by degree of involvement of its members, which is of great importance for the quality of the management processes in the social environment – comp. H. J. Grubb, *Social Cohesion as Determined by the Levels and Types of Involvement*, „Social Behavior and Personality", 15 (1), 1987, p. 87–89.

[24] Comp. H. Nakamura, *Systemy myślenia ludów Wschodu. Indie–Chiny–Tybet–Japonia*, Uniwersytet Jagielloński, Kraków 2005, p. 282, 283, 288–290, 342–343, 362, 380–382, 394, 459, 471. It is about unity of four religions: Buddhism, Taoism, Confucianism, Shinto, making with exclusion of some parts of hindu-origin elements, the concept of Neoconfucianism.

the modern shape of so called Japanese methods of management, including security management, concepts of Confucianists were, most probably, the most stabilizing factor in social relations on the Japanese Islands, including the creation of honesty and loyalty. For example we can consider the impact of the *Doctrine of the Mean* treaty (*Zhongyong*), written by the grandson of Confucius, Zisi, who lived in the 5th century BC. Zhuxi (1130–1200), another Chinese thinker, included *Doctrine of the Mean* to the Four Books obligatory studied by the Japanese knights – Samurai. They have transferred to the society of Japan strongly internationalised knowledge form the Four Books, that in the society are functioning "five under heaven all-purpose roads (…), between the ruler and the Government official, between father and son, between husband and wife, between an older and younger brother, and between friends (…)[25].

Along with these five model social relations, the following virtues rise, affecting the evolution of compatibles, precious and socially useful and attitudes having an impact on the management style:

1. justice (ruler – official),
2. love (father – son),
3. respect (husband – wife), order (elder and younger brothers),
4. loyalty (friend – friend).

Authors assume that the person who decided to improve systematically, as the lord of own existence, by activities and self-management, creates a character of a *ruler* acting on own benefit, their loved ones and their surroundings, and even for the benefit of humanity. This idea is reflected in the aforementioned concept of *teiogaku – education for emperor*. Confucius taught that "love for learning approaches to knowledge. Deep training approaches to the virtues of humanitarity, and grasp a shame is to come close to courage. Who knew those three, knew how to create himself"[26]. Knowing them, he knows how to rule the Empire. Management under the guidance of Confucius represents nine of the following canons:

1. own-shaping,
2. respecting the values,
3. family piety,
4. identification with corps of officials,

[25] Zisi, *Doktryna Środka* (*Zhongyong*), [in:] *Filozofia Wschodu*, red. M. Kudelska (ed.), Uniwersytet Jagielloński, Kraków 2001, art. XX, p. 343.

[26] *Ibidem*, p. 343.

5. treating the nation (subjects) as own children,

6. encouraging the craftsmen, by everyday control and verification,

7. indulgence for foreigners,

8. showing courtesy of feudal princes"[27].

Regardless of the role of Confucianism in the socio-political system of Japan, the mentality of all social strata of the country strongly relate to moral guidance of Siakjamuni.

"The apprentices of Buddha show reverence to six directions of the Truth: (…) East means the relationship between parents and children, South means relation teacher – apprentice, West is the relationship between husband and wife, North – a person's relationship to his friends, down – means the relationship between Master and servant, up – relationships between Buddha's apprentices"[28]. The analogy between Confucianism and Buddhism goes very far: "six directions of the Truth" refers to the Buddhist picture of six proper kinds of social relations, which almost overlap with Confucianist understanding of social obligations that are fundaments of *II pillar of security culture* and based on it security management, and management *in general*.

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[27] *Ibidem*, p. 343–344; (…) [1] Lent, cleaning and solicitude for attire (tidiness) as well as no-offensive to morality (…) – that is the formation of one's own. [2] The destination of slander and not giving in to beauty [understood as luxury] in connection with the appreciation of virtue (de) – that is respect for values. [3] Honor towards relatives, treating them with attention, taking active part in their joys and sorrows – that is – a family intimacy. [4] Permission to care for the entrusted tasks – that is showing respect to official dignitaries. [5] Instigation of honesty (xin), not to violate their dignity and affluent salary – that is the identification of clerical corpus. [6] Employment only in the proper time and appropriate salary – that is the support for ordinary people and one's own children. [7] Regular control, month verification, reward according to work – that is the support for all craftsmen. [8] Welcome of those who came and accompanying of those who go away [because things should have their beginning and end], bestowing them and showing them compassion for their lack of abilities [in reference to local customs] – that is showing tolerance to those from a far countries. [9] The restoration of families, which succession line was broken so as to revitalize the principality that was destroyed by war, ordering it in the time of disarray, to support them in times of danger (…) that is courtesy showed to feudal princes". *Ibidem*, p. 344–345.

[28] *Digha Nikāya* 31, *Singālovāda-sutta*; after: *Nauka Buddy. Wybór sutr*, Wydawnictwo „A", Kraków 2006. For comprehensive overview of Buddhist six social relations see *Nauki Buddy…*, p. 224–228.

An organismic model of security management is a holistic paradigm running at the same time on individual and collective levels (*I* and *II pillar of security culture*). According to Mencius (371–289 BC) – people say: "Empire – Principality – Family. The roots of the empire are in the principality. The roots of the principality are in the family. The roots of a family are in the person"[29].

II. Fundamental principles of the "Toyota Way" as the effect of application of the East Asian canons of security culture

Some of the Far East canons of security culture depicted above can be found in the modern management of companies, regardless of their size and the country in which they operate. The appropriate example here is the powerful concern, a leader in automotive production – Toyota. Jeffrey K. Liker in his publication of *The Toyota Way*[30] presents how the Japanese concern, today global, creates *security environment* for existence of processes for implementation of tools and techniques specific for so-called Japanese management – *lean production*[31]. Let us remind, relying on the definition of General Stanisław Koziej, that the *security environment* of a particular *acting-in-security person or entity* is "the external and internal, military and non-military expenditure (civilian) conditions (the conditions for the implementation of the acting person's or entity's interests in the field of security and the achievement of the objectives it set out in this respect), characterized by four basic categories, what are the chances, challenges, risks and dangers"[32]. In Toyota concern the *security environment* favourable to achieve optimum management of this organization, is carried out by placing emphasis on the following elements:

    a) creating an atmosphere of continuous improvement and learning,
    b) meeting customer needs while eliminating wastages,
    c) achieving high-quality production without amendments,
    d) teaching all employees to develop problems-solving skills,

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[29] Mencjusz, *Księga Mencjusza – Mengzi*, [in:] *Filozofia Wschodu…*, p. 352.

[30] J.K. Liker, *The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer*, McGraw-Hill, New York 2004; comp. J. K. Liker, G. L. Convis, *The Toyota Way to Lean Leadership: Achieving and Sustaining Excellence Through Leadership Development*, McGraw-Hill, New York 2011.

[31] J. Lichtarski, *Podstawy nauki o przedsiębiorstwie*, WAE, Wrocław 1997.

[32] *Ibidem*, p. 248.

e) the development of the company, together with its partners and suppliers for the benefit to all of them,

f) bringing up own leaders.

For the first time Toyota was noted as the cars producing company in the 1980s. Japanese vehicles were in good condition and withstand longer than American, and require much less repairs. Branch experts have noted that Toyota is something special, even compared with other Japanese car manufacturers[33]. This particular phenomenon was the consistency of the process and the product. Thanks to this, Toyota cars were produced quicker and were reliable at a competitive cost, with high workers' wages. An important, distinguishing from other car manufacturers, feature of Toyota was that when Toyota reveals a clear weakness and it seemed that it is exposed to the blows from competitors, in a miraculous way addressed the problem and thus strengthen itself[34]. The Toyota way is more than a management method, it is "(…) a fundamental, adopted in this company, way of perceiving the world and pursuit of business"[35]. The Toyota Way is based on two pillars: "continuous improvement" – *kaizen*[36] and the "respect for people". *Kaizen* method bases on five pillars:

1. *Seiri* – tidiness, or organizing tools, instructions, unnecessary in the workplace from the necessary and removing these unnecessary.
2. *Seiton* – systematics, the marking of parts and tools, and giving them the permanent places. The most frequently used items should be located in the close range.
3. *Seiso* – cleaning, laying, removing dirt, waste, including renewal of the workplace and its surroundings.
4. *Seiketsu* – neatness, including standardisation, which is a continuity in maintaining order, cleanliness in the workplace and in its environment.
5. *Shitsuke* – self-control – perpetuating habits principles of *kaizen* and taking care to be followed by members of the team, and all collaborators.

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[33] J.P. Womack, D.T. Jones, D. Roos, *The Machine That Changed the World: The Story of Lean Production*, Harper Perennial, New York 1991.

[34] J.K. Liker, *Droga Toyoty…*, p. 30.

[35] *Ibidem*, p. 11.

[36] *Kaizen* (jap.) – means improving, enhancing, changing for the better – Y. Kazuo, *The New Crown Japanese-English Dictionary*, Sanseido Co. Ltd, Tokyo 1972, p. 411; comp. I. Masaaki, *Kaizen: The Key to Japan's Competitive Success*, Random House, New York 1986.

Kaizen method affirms also the ten rules of conduct:
1. Note that the emerging problems create new opportunities.
2. Ask 5 times "why?" – reaching the root causes of emerging problems.
3. Mind and implement good, already proven ideas from everyone.
4. Think on solutions possible to implement.
5. Get on and reject the usual schemas.
6. Excuses that "something cannot be done", are an unnecessary ballast.
7. Choose simple solutions, without unnecessary waiting for these, that would be great.
8. Use, wherever possible, intelligence and mind in place of the running cost.
9. Mistakes adjust on the fly, without postponing these activities over time.
10. Remember that upgrading is a constant process.

Production system presented by Toyota is, therefore, an unique Japanese cultural canons transposed to modern-day management of the company. It therefore adapts Old-Japanese cultural patterns, rules of conduct, the perception of the world to the modern realities of doing business. It introduces a lot of new concepts, principles and techniques with a view to the elimination of the following elements:
  a) strain injuries and difficulties – *muri*,
  b) irregularities – *mura*,
  c) wastage – *muda*.

The first pillar of *kazein* is used for verification. With its help, the management and staff are able to identify areas in need for improvement, both in the short as well as long periods of time. This pillar also uses Deming's PDCA cycle (Plan-Do-Check-Act)[37], in order to interest the company employees of improvement of quality of manufactured products, as well as improving safety and the reduction of costs in all possible areas. The priorities in the Toyota production system along with the principles of lean management are:
  a) shortening the production cycle by easing the input flow throughout the manufacturing process,
  b) to maximize productivity by creating more products with less consumption of time, materials, surfaces, human, capital and other resources,
  c) design of the production process capable of delivering the required results in a smooth and flexible way,

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[37] A. Hamrol, W. Mantura, *Zarządzanie jakością – teoria i praktyka*, Wydawnictwo Naukowe PWN, Warszawa 2002, p. 93.

d) elimination of waste, leading to losses that have an impact on future long term business effects[38].

Taiichi Ohno, who greatly influenced the development of concept and production structure of Toyota's system, has identified the following risks – possible losses occurring in production processes:

1) overproduction,
2) unnecessary waiting (downtime which sometimes can be used for other tasks),
3) transport unnecessarily carried out,
4) exaggerated or incorrect processing,
5) excessive stocks,
6) superfluous manual operations,
7) defects, production of technically defective parts or their repairing,
8) unused perception and creativity of these employees, who are closest to the specific activities[39].

The creators of the Toyota management system were Sakichi Toyoda, his son Kiichiro Toyoda, and production engineer Taiichi Ohno. The Toyota's founder, Toyoda Sakichi, ran production in the textile industry. He was the inventor of the motor-powered looms that were used in the Toyota Group. In 1902 he invented a mechanism for automatically stopping the loom in case of ripping the thread, which later became one of the pillars of the Toyota production system, named *jidoka* (automation of the human face). The invention started the automatization of work. One worker could handle a few looms at the same time. This invention introduced revolutionary changes comparing to the manufacturing system implemented so far. They consisted:

1) reduction of faults arising from staff errors,
2) increase of productivity.

The use of production facilities operating with the probe for detection of errors, has become a strategic part of the Toyota production system, which is a modern non-military fight of Samurai for better quality of human existence. Similarly was understood the need for automation of reflexes – *butsukar* – in Samurai's combat training, indispensable for the

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[38] M. Lisiński, B. Ostrowski, *Lean Management restrukturyzacji przedsiębiorstwa*, ANTYKWA, Kraków–Kluczbork 2006, p. 50.

[39] K. Suzaki, *The new manufacturing challenge. Techniques for continuous improvement*, "The Free Press", New York 1987, p. 12–18.

effective and rapid action on the battlefield. In 1929 Kiichiro Toyoda went to the United States to see the production of automotive industry, which at the beginning of the 20th century was experiencing a huge development. He was especially impressed by the production system used in the factories of Henry Ford. This system worked on a conveyor belt. After these experiences, Kiichiro Toyoda decided to try to make the system for Japanese automotive market. In 1930 a change in the profile of production in the Toyota Group has been made. The existing production profile changed into automotive industry. The production system adopted from Ford marked in Japan the beginning of the series production process. It stared the so-called synchronization of production, when production and transport were made at the same time.

In the 1950s, Kiichiro Toyoda was the first to apply in the *Just In Time*[40] Toyota manufacturing process concept. Direct creator of this method was Taiichi Ohno. This method led to changes in organization of production process in such way that raw materials and semi-finished products were distributed from the links of the process without storage, which has helped to minimize the stock ("just-in-time"). The purpose of creation of this method was to obtain the following effects:

- highest quality,
- minimal costs,
- removal of all types of waste in the delivery processes[41].

The idea of this method was to produce the quantity of products that would be used in the following process, which allowed to reduce overproduction.

Basing on twenty-years in-depth research of the Toyota's system Jeffrey K. Liker. identified and systematized a typology consisting of fourteen fundamental principles of management[42], on which is based the system:

1. Base your management decisions on a long-term philosophy.
2. Create continuous process flow to bring problems to the surface.
3. Use "pull" systems to avoid overproduction.
4. Level out the workload (*heijunka*).

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[40] J. Morris, B. Wilkinson, *The transfer of Japanese management to alien institutional environments*, "Journal of Management Studies", November 6/1995, Blackwell Publishing, Oxford, 1995, p. 722.

[41] J. Witkowski, *Logistyka firm japońskich*, Wydawnictwo Akademii Ekonomicznej we Wrocławiu, Wrocław 1998, p. 49.

[42] J. K. Liker, *Droga Toyoty…*, p. 125–399.

5. Build a culture of stopping to fix problems, to get quality right the first time.
6. Standardized tasks are the foundation for continuous improvement and employee empowerment.
7. Use visual control so no problems are hidden.
8. Use only reliable, thoroughly tested technology that serves.
9. Grow leaders who thoroughly understand the work, live the philosophy, and teach it to others.
10. Develop exceptional people and teams who follow your company's philosophy.
11. Respect your extended network of partners and suppliers by challenging them and helping them improve.
12. Go and see for yourself to thoroughly understand the situation (*genchi genbutsu*).
13. Make decisions slowly by consensus, thoroughly considering all options; implement rapidly.
14. Become a learning organization[43] through relentless reflection (*hansei*) and continuous improvement (*kaizen*)[44].

Summary

The Japanese Toyota company management system began in many branches of production and services and went through total revolution. The so-called Toyota Way explains the evolution of the production system of the company, as the new algorithm of excellence in manufacturing products and – what should be underlined – is a non-military security management model based on the centuries-old experience of the Japanese nobility. This management system is a result of "exploiting" the legacy of

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[43] J. Piwowarski, J. A. Piwowarski, *Koncepcja organizacji uczącej się jako strategia administracji i zarządzania dla bezpiecznego rozwoju firmy*, "Zeszyt Naukowy Apeiron", Apeiron WSBPI, 2010, no 4, p. 136–144.

[44] M. Imai, *Kaizen: The Key To Japan's Competitive Success*, McGraw-Hill Education, New York 1986; Idem, *Gemba Kaizen: A Commonsense Approach to a Continuous Improvement Strategy*, McGraw-Hill Education, New York 2012; J. Miller, M. Wroblewski, J. Villafuerte, *Creating a Kaizen Culture: Align the Organization, Achieve Breakthrough Results, and Sustain the Gains*, McGraw-Hill Education, New York 2013; R. Maurer, *One Small Step Can Change Your Life: The Kaizen Way*, Workman Publishing Company, New York 2014; E. Coimbra, *Kaizen in Logistics and Supply Chains*, McGraw-Hill Education, New York 2013.

Far East, *security culture* created by Japanese military elite. In the literature you can find descriptions of the companies in industries such as construction, healthcare, heavy industry or pharmaceutical, which apply in practice the above fourteen principles, achieving a spectacular improvement in their results. In conclusion, it should also be recalled that the avant-garde of Japanese business, which started its activity in the 16th century, also included the representatives of deserving and experienced in a number of battles military families, called *buke*. The foundation of Japanese organizational culture is a very strong emotional involvement in the construction of *I, mental–spiritual and II social (legal and organizational) pillars of the security culture*[45].

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[45] M. Cieślarczyk, *Kultura bezpieczeństwa i obronności*, Siedlce 2011, p. 11; S. Jarmoszko, *Nowe wzory kultury bezpieczeństwa a procesy deterioracji więzi społecznej*, [in:] *Jedność i różnorodność. Kultura vs, kultury*, E. Rekłajtis, R. Wiśniewski, J. Zdanowski (ed.), ASPRA-JR, Warszawa 2010, p. 110; J. Piwowarski, *Słowo wstępne. Trzy składowe kultury bezpieczeństwa*, „Kultura Bezpieczeństwa. Nauka – Praktyka – Refleksje", 2012, Nr 9.

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