1. **Overall status**

It was reported that the forging industry in Australia, in general, is declining as they say they are simply not competitive in the world market due to the Chinese influence. Some companies have closed their plants in Australia and relocated some of their operations to China, while another company has closed its plant in Australia after 50 years of continuous production and set up a strategic alliance with a Thai forging company. The company sold all of its forging equipment to the same Thai company as part of the alliance. They are importing some forgings from China.

The other adverse influence on the Australian forging industry is closure and the shifting of some operations by their automotive companies. They further mention that there is a general trend at a government level to reduce Australia’s manufacturing base in general, and therefore forging specifically, simply because they are no longer prepared to provide the subsidy assistance which was available in the past. They conclude that the government believes that Australia will simply export iron ore, coal, etc., and that if an industry cannot be competitive on the world stage, they simply are not going to provide the support.

![Forging Production of Australia in 2006](image)
2. Outlook for the future

Growth will be seen in the export of primary commodity (mining) items as well as financial services. Manufacturing in general will be diminished further in the next 5 years. For comparison, manufacturing represents just over 25% of GDP, while the services sector represents over 70% of GDP. The balance of 5% is agriculture. In essence, what is happening is that the labor from the closure of the manufacturing sector is being absorbed by the high demand for skilled labor in the primary industry, namely, mining. Mining wages are almost 2 times higher than what the forging industry is able to pay.

So, they conclude, unless there is a major disturbance in China and perhaps in India, they can only see a rapid decline in the manufacturing sector in general as well as a decline in the forging industry specifically.

Ⅱ. Current Situation of the Japanese Forging Industry

1. Overall status

Japanese manufacturers have been accelerating overseas operations by focusing on world-wide optimal division of function in order to cope with severe global competition. This, as a result, is creating a mutual complementary relationship between overseas manufacturing operations and Japanese domestic operations, rather than causing Japanese manufacturing to be hollowed out. Namely, expansion of overseas production and sales has been bringing supply of highly-functional parts and materials from Japan which is contributing to the activation of Japanese domestic economy. However, as for the outlook for the future, it is widely understood that the economy is facing a slowdown.
Under these circumstances, the Japanese forging industry has had record-high production each year in and after 2005. In 2007, production was 2,650,000 tons up by 4.3% from the previous year and sales amounted to a record-high 633.8 billion yen.
The contributing factors for the Japanese high production in the forging industry are as written in this chart.

### The contributing factors

1. **Expansion of exports and increased overseas production in the automobile industry**
2. **Increase in demand due to resources development in the civil engineering and construction machinery industry**
3. **Increase in active demand for plant engineering and power receiving equipment such as that from oil-producing countries**
4. **Increase in demand associated with growth in BRICs and capital investment by other Asian countries**
The automobile industry is the main user of the forging industry and thus the forging industry is greatly influenced by automobile industry trends. The Japanese domestic automobile production had shown a steady growth since 1960, but since 1990 when it hit a peak of 13.48 million units, it has shown a downward trend.

Looking at the Japanese export of four-wheel vehicles, it reached a peak of 6.73 million units in 1985, the year of the Plaza Accord. Since then it continued its decline down to 3.71 million in 1996. In the following year of 1997 it recovered to 4.55 million and has remained at approximately the same level until recently. However, it showed some increase in the last few years probably as a result of supply from Japan to make up for shortages in overseas production.

Japanese overseas production has steadily increased while its domestic production (has been) sluggish, except for 1998 when there was a steep drop due to the Asian currency crisis. Now, overseas production is about to surpass domestic production as you can see from the chart “Japanese production of four-wheel vehicles – Domestic vs. Overseas”. It remains to be seen what influence this will give to Japanese forging companies.
2. Activities by the Japan Forging Association

In 2006, our association outlined a forging vision. This vision sets out the direction for our forging industry to aspire for a higher profit structure toward 2016.

Under this vision, we have formed the following subcommittee sessions in order to set action plans into practice.
0. Self-sustainability of the forging industry as a goal
1. Aggressive management by full use of technology and skills
2. Co-existence and co-prosperity by fair business practices
3. Responding to overseas markets
4. Positive alliances both within the industry and across different industries
5. Providing supply to various product groups
6. Long-term approach to human resource development
7. Attracting public attention to the forging industry

When it comes to the business environment in our industry, while most of the companies have been very busy in operations for the last few years, there are many companies that have not been able to pass on the worldwide sharp increases in costs of materials such as steel, nickel, coke and sub-materials such as steel for die making to the prices of their products. Furthermore, with severe requests for cost reductions coming from their users, many companies cannot secure enough earnings for reinvestment and thus are facing a harsh management environment.

Therefore, it is considered a pressing need for the Japanese forging industry to create a fair business relationship with the user industries by having clearly shared goals of making better products with the spirits of mutual co-existence and co-prosperity in order to contribute to the development of the Japanese industry, thus improving itself so as to make enough profits for reinvestment in technical research and development as well as in equipment.
3. **Human resource development and environmental issues**

Japanese forging companies that are facing retirement of skilled workers and increase of nonpermanent employees have much concern about the loss of expertise and technical skills and the difficulties in recruiting human resources.

To cope with these problems, the Japanese forging industry is working on the following 4 projects for human resource development.

- **Human resource development for those who are considered to be future plant managers and management personnel**
- **Correspondence courses for forging technology**
- **E-learning for forging**
- **Human resource development project for those who are employed by the forging industry for the first time**
4. **Forging technology**

In the course of drafting a forging industry vision entitled “The direction the Japanese forging industry should take” in November, 2006, we dug out our strengths and weaknesses and further exchanged views on this vision at the meetings we held locally. Through these processes, the following keywords were highlighted. Our forging industry has decided to work closely on these keywords from now on.

1. High value adding (high strength, high precision, weight saving, new function, design)
2. Establishment of unique technology
3. Collaboration/interaction (upstream/downstream industries, cross-industrial exchange, horizontal exchange, academic-industrial cooperation)
4. Entering new industries (aircraft industry, robot industry, electric appliance industry)
5. Production line reform (timely, flexible, downsizing)
6. Environmental measures (sound absorption, sound insulation, noise reduction, vibration reduction)
7. Others (building equipment data base, procurement of spare parts on a total industry basis)

In 2006, we started a 3-year state-sponsored project on the “development of a software support system for lengthening forging die life”. This project is aimed at developing a software support system for figuring out and systemizing factors along with their contributing ratios for die breakage by clarifying their correlations by measuring actual die conditions and by using simulations of forging production.

5. **Environmental issues**

In tackling environmental issues, we formulated a voluntary environmental action plan and are conducting surveys of CO2 emissions, energy consumption, waste generation. We also survey energy-saving measures taken by forging companies and are sharing the results or findings with all Forging Association member companies. Further, we are considering a project in which we would collect and provide information or results from research activities regarding specific cases of forging technology motivated by environmental issues, to be applied for weight saving, downsizing and higher performance.
6. **Summary**

Taking this opportunity of this International Forging Congress, we would like to make a suggestion that the following be formulated in the global alliance.

- Making proper pricing criteria for forgings based on the amount of value added
- Establishment of global quality standards