Ferrous metallurgy remains a basic structural industry of the world economy in the 21st century. According to expert estimates, steel will remain the principal construction material in the near future [1-4]. This is confirmed by the dynamics of its world application (Fig. 1). In developed countries, however, the growth rate of steel consumption has declined noticeably over the recent years [2]. It is especially characteristic of the USA, Canada, Japan, and EU countries where the market has reached its natural saturation point. At the same time, some countries (Brazil, India, Russia, China etc.) are characterized by persistently low per capita metal consumption, which suggests a potential rise in general steel consumption in these countries (Fig. 2).

The decline in the growth rate of metal consumption in some countries under increasing productive capacity of metal output, rapid enhancement in production efficiency, and development of the international steel trade was gradually leading to disparity between production capacity and consumption and, naturally, resulted in, first, emerging excess plant capacity; and, second, wear and tear and obsolescence, which became especially evident at the turn of the 20th century [2, 5-7].

Production facilities of some countries, primarily in the CIS (including Russia) are largely obsolescent and inefficient [4, 8]. This appraisal applies to most production facilities at metallurgical enterprises of West Siberian region, including West Siberian integrated iron-and-steel works (ZSMK).

In our study, we relied on our experience in generating industry and enterprise development scenarios and programs [9, 10]. Three possible forecast development scenarios are suggested as well as a ten-year program of ZSMK restructuring and technical retooling according to one of those scenarios. Before describing them, let us characterize the possible forecast situations in the market of ZSMK metal production and consider the strategic goals common for all the three scenarios.

Should favorable investment climate emerge in Russia for industrial, road, and civil construction, it can lead to an upturn in demand for reinforcement steel [11, 12]. In the nearest future, however, it is hardly probable that the ZSMK share of the domestic market of building bars will expand because of the low growth rate in the construction industry and the recent trend of locating building bars production close to their application (the first contract for a miniplant near Voronezh based on the scheme: electric furnace – continuous casting machine (CC machine) – rolling mill).

As far as the external market is concerned, the position here is worse than unstable and fraught with serious problems for ZSMK in the nearest future [2, 4, 13]. ZSMK will have to address the issue of the output imbalance, in particular, due to shrinking sales of square blooms in the Chinese market. The finished blooms will have to be rolled down into finished steel.

In addition, a protectionist policy towards metallurgy characterized by restrictions of Russian steel import, which has been pursued by developed countries of Europe and USA in recent years, was taken up by China in January of 2004.

As regards rod iron and reinforced steel, it can be expected that the demand for this product will somewhat increase in Central Asia and the Middle East after cessation of hostilities and beginning of economic recovery, and also due to entering new markets. In addition, taking into account the current underutilization of production facilities of some countries, primarily in the CIS (including Russia) are largely obsolescent and inefficient [4, 8]. This appraisal applies to most production facilities at metallurgical enterprises of West Siberian region, including West Siberian integrated iron-and-steel works (ZSMK).
Russian metalware plants (with reserve of 48-69% capacity), we can predict growing in demand for rod iron, especially premium brands [6, 11, 14].

During the last decade, the output of rolled iron and steel products has been increasing very slowly, the extensive growth period in ferrous metallurgy is practically over, but serious changes have taken place in product quality and in technologies geared to cost reduction for rolled metal products. The technologies enjoying popularity now are direct-steel processing and a hybrid foundry/rolling process.

Our analysis of domestic and foreign markets of ferrous metals and forecast trends in domestic and world metallurgy enables us to conclude that the key objective of ZSMK strategic development will be the production of premium-quality metalwork, which is now in great demand, at minimum production cost. Therefore, the main thrust of ZSMK strategic development will be modernization of technology and facilities [9, 10, 15]. It is evident, however, that the effective implementation of this strategic development goal is impossible without effective management and professional staff. Therefore, two other strategic development directions for the iron-and-steel works are management and staff improvement. These development directions prove the basis for development scenarios of ZSMK suggested in the present work.

**Management improvement** implies the implementation of advanced management information systems. It should be noted that the existing management system at ZSMK (as well as the management systems at other Russian metallurgical enterprises) do not fully meet modern requirements. The existing management systems lack timely intelligence, e.g. on current costs of production, and this hampers the top management effective day-to-day operation. For such a giant company as ZSMK, to obtain such information systematically is only possible on the basis of state-of-art informational technologies. A management information system (ERP-system) suggested for ZSMK is based on the integrated enterprises management system SAP R/3.

With all scenarios, the management information system for ZSMK must include the following components (Fig. 3).

**Personnel improvement** for all the forecast scenarios must be based on a new HR management policy pursued by ZSMK. This policy must be anchored in a comprehensive and objectively feasible strategy of personnel management combining various forms, methods, and models of HR management and aimed at the development of close-knit, responsible and highly productive collective capable of prompt adjustment to variable market requirements.

Human resources management must be based on the following principles:

—allowing for the interests of proprietors, top managers, employees, and society, their mutual responsibility;

—priority of development needs of the iron-and-steel works;

—primary reliance on the company’s own labor resources;

—business partnership relations between employers and employees; and

—executive staff is the key element of the staff potential at the iron-and-steel works.

The implementation mechanism of the suggested HR policy within the framework of the Company’s strategic goals includes:

—transfer to preventive and active components in personnel management;

—equal partnership of major Company’s divisions with the HR department staff; and

—organizational integration via involvement of all management levels in personnel management work.

We believe the component functional units of the HR policy at ZSMK should be as follows:

—analysis and development of the external labor market, staff planning;

—search, selection, and recruiting, HR accounting and reporting, reduction in personnel workload;

—professional training and recurrent training of the staff;

—personnel management work, personnel performance appraisal, personnel costs management;

—securing social partnership including work with public organizations (women’s, youth, veterans’ trade union);

—development of corporate culture;

—labor protection and occupational safety systems based on providing proper social conditions for employees, their life and labor activity.

Let us describe the forecast scenarios of ZSMK development, which are a gradual expansion of the investment activity at the Company. On passing from one scenario to another, the reconstruction scale of technologically associated productions is increased.

**First scenario of ZSMK development** is based on the measures aimed at technology and facilities modernization. The main idea of this scenario: technology