NILNOT
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PROPOSAL

Higher labour productivity without capital investment

Engineered System of Production and Work Organisation — lower cost of products, works and services

10–30 %
labour productivity growth reserve across projects

1–3 months
payback period

NILNOT methodology applied since 2007. Results of projects developed and accepted by clients.

ENGINEERED SYSTEM OF PRODUCTION AND WORK ORGANISATION

NILNOT offers the development and implementation of an **Engineered System of Production and Work Organisation** — a set of labour standards, organisation standards and process documents calculated from the client's technology, equipment and production facilities, with every standard traceable to a process operation and recalculated when production conditions change. **Economic effect** — lower labour costs in the unit cost of products (works, services) as labour productivity grows faster than the average wage.

> **System logic:** function → production process → process regulation → standard-setting factors → work regulation → workplace → labour standards (time, output, labour intensity, servicing, headcount) → category and grade → standard number of workplaces and headcount (on-shift, relief, total) → production unit (section, shop) → pay for results → per-shift accounting and payroll → unit cost.

CORE TOOL — ENGINEERED WORK MEASUREMENT

Engineered work measurement (Article 101 of the Labour Code of the Republic of Kazakhstan) is the determination of working time (the measure of labour input) per unit of output, per volume of work or for servicing production equipment under specific organisational and technical conditions; **the only scientifically grounded method to determine the required headcount and number of workplaces and to assess the level of labour productivity and its growth reserves.**

1. **Process regulation:** labour functions to be measured, by production process.
2. **Standard-setting factors:** production facilities, equipment and its repair complexity, work volumes, operating mode and working conditions.
3. **Work regulation:** the most productive work sequence and the standard working-time balance of the shift; for managers and specialists — a function map.
4. **Workplace:** assigned operations and servicing zones.
5. **Labour standards:** time, output, labour intensity, servicing, headcount, span of control.
6. **Category and grade:** per the Unified Tariff and Qualification Handbook (ETKS), Qualification Handbook (KS) and professional standards.
7. **Standard number of workplaces and headcount:** on-shift, relief, total.

Methodology: one end-to-end methodology for all industries. Methods of setting labour standards: analytical research — direct measurement at workplaces based on study of the technology: time study of typical operations or of the production process as a whole — to determine operating time; working-time observation (individual, group, team), of the production process and of equipment use — to determine the structure of shift working time, losses of working time and equipment downtime; analytical calculation — calculation from the technology and standard-setting factors using cross-industry and industry labour norms, taking into account the client's organisational and technical production conditions, process data and equipment specifications.

Principle: labour standards are based on technology.

Work regulation and labour standards are the standard of work performance: the basis for measuring and sustaining improvements in lean production and kaizen.

OTHER TOOLS OF THE SYSTEM

1. **Tariff conditions and an effective pay system** (category and grade, pay for results): a single measure of labour and its pay — minimum tariff rate; tariff grading of workers' jobs per ETKS (tariff grade — level of work complexity and qualification, item 74 of Article 1 of the Labour Code), of managerial and specialist positions per KS and professional standards; tariff scale, tariff rates, salary scheme, piece rates; an effective form of pay for the production conditions — time-based (simple, time-plus-bonus) or piece-rate (piece-plus-bonus, collective); **time-plus-bonus with a standard task** — the shift is paid for completing the standard task: the shift work volume per time (output) standards and servicing standards; existing grades are kept as a layer above tariff grades and position categories.
2. **Technical and process preparation of production** (process regulation, standard-setting factors): grouping of main and auxiliary equipment, repair complexity — labour intensity of maintenance and repairs, the basis of the planned preventive maintenance (PPM) schedule; process regulation → work regulation → process charts and instructions, work organisation charts, work instructions → job descriptions; scheduling of work (calendar duration of operations).
3. **Division and cooperation of labour** (function, workplace, category and grade): technological, functional, occupational and qualification division of labour; cooperation — between shops, within a shop, within a section; individual and team forms of work organisation; occupations, grades and position categories per ETKS, KS and professional standards; job descriptions and work instructions.
4. **Combining occupations (positions), extending servicing zones and increasing the volume of work performed** (workplace, labour standards): based on servicing and time standards — the set volume of work with lower labour input; higher labour productivity and higher employee earnings without increasing the payroll fund.
5. **Rational production structure** (production unit): workplace → section (department) → shop; main, auxiliary and service shops — by process, product or mixed type; production as a distinct block in the overall organisational structure; grouping of production facilities and units; management levels per span-of-control standards; team leader and link leader — working (non-released) workers, not a management level; each facility and employee has one direct supervisor; no duplication or fragmentation of functions.
6. **Rational operating mode and working-time balance** (work regulation): rational and standard working-time balance of the shift — the basis of time standards and the standard task; optimal shift schedules by type of work; night work justified only by process necessity; summarised working-time accounting with a justified accounting period that balances working time without overtime overpayment.
7. **Labour accounting** (per-shift accounting and payroll): per-shift accounting of standard task completion; per-shift calculation of wages based on standard task completion, informing the employee of earnings for the shift and month-to-date; time sheet, per-shift work order (standard task).

RISKS OF THE CURRENT PRODUCTION AND WORK ORGANISATION

Financial

- personnel costs above the standard requirement — higher unit cost of products (works, services); headcount and payroll based on "actuals"
- no separation of standard and above-standard labour costs under International Financial Reporting Standards (IFRS)
- paying both own staff and contractors for the same types of work
- paying a shift for attendance rather than for the volume of work performed

Organisational

- inefficient organisation of the production process and work, irrational staff deployment — loss of working time (unproductive work, unregulated breaks)
- idle running and downtime of equipment for organisational and technical reasons — underuse of production capacity
- uneven workplace load — overtime in peak periods and idle time otherwise
- night work without process necessity — unjustified increased pay

Legal and HR management

- occupation (position) titles and qualification requirements not matching professional standards, ETKS and KS (item 8 of Article 101 of the Labour Code); grades without tariff grades — pay not linked to work complexity and labour standards
- formal job descriptions and work instructions — not tied to the workplace and labour standards: scope of work and responsibility not fixed

- duplicated and fragmented functions, excess management levels, managerial positions without their own object of management — redundant and unproductive workplaces, blurred responsibility
- run-to-failure repairs without a PPM schedule — unplanned downtime, emergency repairs, overtime of maintenance staff

- incomplete workplace profiles (cards) and, as a result, an incomplete list of hazardous and harmful production factors — risk of incorrect certification of production facilities for working conditions and of claims by supervisory authorities
- loss of process knowledge when experienced employees leave — the process is not documented in process charts

THE CLIENT RECEIVES

1. **Labour standards handbooks for each unit and workplace — the main deliverable, in an Excel calculation model, with the methodology for calculating labour standards and headcount:** work regulations (for managers, specialists and office staff — function maps) and labour standards by workplace: time standards for work operations, standard labour intensity, output standards, servicing standards for production facilities (equipment, production areas); **a scientifically and technically grounded number of workplaces and standard headcount** (on-shift, relief, total) by function and unit — based on work regulations and time standards for all personnel categories; for maintenance personnel — also by equipment repair complexity and standard labour intensity of maintenance and repairs; summary and comparative analysis of standard vs. actual headcount — deviations for each workplace and their systemic causes; independent headcount recalculation by the client's specialists when volumes, equipment or structure change.
2. **Labour productivity growth reserve across projects — 10–30 %** through comprehensive implementation of the Engineered System of Production and Work Organisation: engineered work measurement — labour standards handbooks (work regulations, labour standards, standard headcount) by unit and workplace; elimination of unproductive workplaces; a rational production structure with reduction of redundant units, management levels and the number of managers per span-of-control standards; combining occupations and extending servicing zones (including multi-machine servicing); pay for completing the standard task; an optimal operating mode and shift schedule — without capital investment.
3. **Financial results:** lower unit cost; economic effect in tenge per month and per year; standard cost: labour costs — per labour standards, above-standard costs — period expenses (per IFRS); staffing table and payroll based on standard headcount; in-house or contractor (outsourcing) — by labour intensity and economic expediency; redeployment of released headcount and working time to main and auxiliary production — without increasing headcount or the payroll.
4. **Justification of personnel costs:** standard basis for indicators: labour productivity, labour intensity, work scheduling, cost of a standard hour, labour costs in unit cost, including under regulated tariffs; headcount and payroll standards for budgeting and for the tariff estimate under state tariff regulation (item 6 of Article 101 of the Labour Code).
5. **Engineering base:** regulation on equipment classification and grouping — repair complexity; standard basis for the Regulation on planned preventive maintenance and servicing of equipment: standard labour intensity of maintenance and repairs, PPM schedule; based on process and work regulations — process charts by type of work and equipment: composition and sequence of preparatory-final and process operations of repair and servicing, occupational and numerical composition of performers; work organisation charts — together with the client's specialists, the basis for training workers.
6. **Rational operating mode:** regulation on the standard balance of shift working time: preparatory-final and main time, workplace servicing, regulated breaks for rest and personal needs; the meal break is outside working time; optimal shift schedules by type of work; summarised accounting with a justified accounting period; night shifts only where required by the process.
7. **Rational structure:** regulation on the production structure (sections, sub-sections, departments) within the organisational structure; a single structure standard for units and branches: units by function and threshold headcount; span-of-control standards; each function assigned to a single responsible unit; a management level only where it has its own object of management.
8. **Personnel and working conditions:** occupations and positions per ETKS, KS and professional standards (item 8 of Article 101 of the Labour Code); alignment of existing grades with tariff grades and position categories; organisational and technological profile of workplaces (scope of work, equipment serviced, raw materials and supplies, working conditions) — the basis for job descriptions and work instructions detailed per labour standards, a complete list of hazardous and harmful production factors for certification of production facilities for working conditions, and PPE.
9. **Labour accounting:** per-shift work order (standard task); per-shift accounting and wage calculation, informing the employee of earnings for the shift and month-to-date; time sheet.

WORK PROCEDURE

I. Development — at the client's choice: for the company as a whole or in stages — starting with a pilot facility (unit, branch) and then rolling out across the company; for a group of companies — a corporate standard. **Diagnostics — study and analysis of the current production and work organisation:** technology, equipment load, use and loss of working time, overtime; structure, organisation of work and pay; duplicated and fragmented functions, excess management levels → labour standards → standardisation → pay and labour accounting.

Result — local regulatory documents: labour standards handbooks with the calculation methodology and work regulations; production and work organisation standards; process charts and instructions; labour intensity standards for maintenance and repairs — the basis of the PPM Regulation and the PPM schedule; regulations on labour rating, pay, working hours and time accounting, and on organisational units; draft staffing table; standard task and work order forms.

II. Implementation and support: trial of labour standards at workplaces, verification and adjustment — together with the client's specialists; **training in the labour rating methodology during the work** for engineering and technical staff (line managers and specialists) and for labour standards and pay specialists; agreement and approval of standards as established by the Labour Code; communicating the standards to employees; process charts and work organisation charts — together with the client's specialists; detailing of job descriptions and work instructions per labour standards; automation — integration with 1C, SAP or another accounting system together with the client's programmer; monitoring of performance and revision of standards when technology and work organisation change.

Stage-by-stage acceptance with no risk to the client: each next stage begins only after the results of the previous one are formalised: control of scope, quality and deadlines; verification of standards at workplaces; comments within the scope of work are addressed at no extra charge.

SYSTEMS DEVELOPED FOR

Airports and transport — Nursultan Nazarbayev International Airport, Batumi Sea Port, Batumi Oil Terminal; **Mining** — AK Altynalmas, Caravan Resources; **Oil and gas** — Atyrau Refinery, Pavlodar Petrochemical Plant, PetroKazakhstan Oil Products (PKOP), KazMunayGas Onimderi, Gelios; **Industry and construction** — Kazakhstan Pipe Plant, BI Group, AAEngineering Group, SK Eurodor, Petropavlovsk Building Materials Plant; **Agro-industry and food** — Aitas Breeders Almaly, Prima Kus, EUROBAKERY and THOMIS PASTRY; **Energy** — Almaty Heating Networks; **Telecommunications and broadcasting** — Kazteleradio; **Municipal solid waste processing** — Green Recycle, Kaz Waste Green Energy; **Printing and services** — Foliant, Regis-ST Poligraf, Medicus-Centre, Semser. Client testimonials — www.nilnot.kz

Attachment: presentation "Engineered System of Production and Work Organisation". If you are interested, we will prepare a commercial proposal with stages, timelines and cost.

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