THE GAIN AI EQUATION

Replacement by proof

English version

NEURA KING

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Context
of use

Artificial intelligence is profoundly transforming societal and professional paradigms, but how is it manifesting itself in practice? What realities lie behind the hype, beyond the fears and fantasies?

The AI gain equation is an analytical formula designed to quantify the tangible benefits of artificial intelligence in all the dimensions it touches. It's an invaluable tool for encouraging responsible adoption, raising awareness, and facing up to the brutal reality of what it unveils.

It helps companies, average citizens and decision-makers to navigate the complex AI ecosystem more effectively, maximizing its benefits while considering the potential risks.

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Why ?

this equation

To answer the question “Why use AI?” first of all, because this question has yet to find sufficiently tangible answers, especially outside the digital domain.

Many still don't grasp the importance of AI, or don't feel concerned. Some, focused on the effort required to make the transition rather than on the benefits of the cumulative effects, are putting off their transition until tomorrow, because they don't know how to consider the benefit/effort ratio in its proper proportion. Others, on the other hand, are already relying heavily on AI, observing its benefits empirically, but without fully evaluating them.
The gain equation aims to shed factual light on the extent of AI's impact.

It reveals economic benefits (direct and indirect) on such a scale, thanks in particular to a cumulative effect, that it clearly expresses a reality that is still denied: the programmed and irrevocable destruction of employment, through virtually widespread replacement.
To the economic benefit of employers, to the detriment of employees.This raises both the need for rapid adoption in the name of competitiveness, and the importance of responsible integration, since everyone will have to arbitrate between their own economic survival and the social consequences of the announced replacement.

Without denying the obligation to adopt, without denying the inevitable job losses, particularly in a context that favours cost-cutting, it is by facing up to the reality revealed by the win-win equation that societal upheavals could be better anticipated, including measures to accompany and redesign working models in order to mitigate social impacts.

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Why ?

this equation

A decision-making tool for managers

By quantifying the impact of AI, the gain equation enables decision-makers to objectively assess the benefits of integrating AI into their processes.

This enables them to make informed decisions about necessary investments, potential reorganizations and employee training and support strategies.

An asset for AI professionals

The winning equation is also a valuable asset for professionals looking to position themselves in the AI market. Faced with denial, objections and reluctance from potential customers, this tool enables them to present concrete, quantified arguments demonstrating the extent of AI's benefits.

Using the win equation, AI professionals can highlight the cost savings, productivity gains and competitive advantages their solutions are likely to deliver. In this way, they are better equipped to convince decision-makers and overcome the obstacles associated with unfamiliarity with, or mistrust of, this technology.

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Why ?
this equation

A tool to raise public awareness

For the average citizen, understanding the gain equation means realizing that AI is profoundly transforming many professions and sectors of activity. It also means understanding that, if they don't yet feel concerned, they soon will. The gain equation makes us realize that AI is going to have a lasting and brutal impact on everyone's daily life, whether as a consumer, an employee or a user of public services.

There's a simple reason for this: the savings it will bring are far too great to ignore, and all the more so in an economic climate that is pushing the economy.

This awareness is essential, as it enables us to tackle head-on the societal challenges of AI: changes in skills and professions, transformation of the job market, ethical issues... By better understanding the realities implied by AI, everyone is better equipped to form an informed opinion, and make decisions for their future.

The Winning Equation is therefore of real educational value, because of the brutal and inescapable reality it reveals.

A tool for raising awareness and empowerment

For public authorities and social partners, the AI gain equation is a wake-up call that forces them to face up to the reality of changing work and the need for in-depth reform of training and social protection systems. It confronts them with their responsibility to engage in a genuine societal debate on the political issues linked to AI and to implement courageous public policies to support this transition while preserving social cohesion.

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Indicators

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Segmented time

The advantages of the time factor don't seem to need any further argument... and yet. By systematically segmenting AI integration at task and micro-task level, the cumulative effects at the end of the day prove prodigious. Almost imperceptible during execution, these effects become real exponential levers thanks to their accumulation. (CF: ESP Method)

Energy and calories

AI has been criticized for consuming too much electricity.However, on the scale of each task it accelerates for each employee, each individual, it can, on the contrary, have a downward impact on electricity consumption.What's more, this acceleration has a direct impact on employees' cognitive workload.Drastically lowered and resulting in calorie savings, the latter represents a hitherto overlooked performance lever, but one that has a major impact on productivity and performance.

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CO2 and water

At a time of global warming, all savings in CO_2 and precious resources such as water need to be accounted for.Here again, AI is seen as problematic, even though it does in fact enable savings on a micro scale, all the more so because of the accumulation effect.

Cognitive load

The calorie-saving effects of lowering the cognitive load, accumulated over the course of a day, lead to an increase in the ability to concentrate for longer, with greater acuity.

Everyone is aware that a worker's efficiency differs between Monday morning and the end of the day on Friday. The implications of this are well known.

What happens when the maximum ability to concentrate lasts longer for every task performed, every day, every day?

This has significant consequences for quality, error rates, satisfaction and many other factors that concentration variables consider.

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Operational performance

Considering the multiple benefits that AI brings, whether in terms of speed, purely economic gains, energy and concentration factors, it is advisable to establish global indicators that integrate all these levers, and which can be directly correlated to sales.

Induced quality

Quality is a direct consequence of operational performance gains and cognitive load reduction factors.
Including it as a weighting factor is essential for understanding and measuring incremental effects on both a micro and macro scale within any organization.

RGE and scenarios

The results of the gain equation are generated by multiple weighting steps reflecting actual impacts and their extent. These results are used to extract interpretations and scenarios, ranging from a single task to the repercussions of its optimized deployment over the entire working time of each employee.

This approach makes it possible to measure the gains directly linked to optimization, and to assess their cumulative potential. By analyzing the results of the gain equation, it becomes possible to quantify the benefits of a process improvement, both at the level of an individual task and at the level of the company as a whole.

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Formulas and key variables

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Formulas

and key variables

The time

GTT

Time saved per task

- GTT: (x)minutes / task of (x) min / Employee
- GTTj: (x)minutes / day / Employee
- GTTm: (x)minutes / month / Employee

GFT

Financial gain per job (including employer's contributions)

- GFT: (x)€ / task of (x) min / Employee
- GFTj: (x)€ / day / Employee
- GFTm: (x)€ / month / Employee

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Formulas

and key variables

Energy

EKH

Kwh savings

- EKH: Kwh / task of (x) min / Employee
- EKHj: Kwh / day / Employee
- EKHm: Kwh / month / Employee

EWH

Euros saved on Kwh

- EWH: (x)€ / job of (x) min / Employee
- EWHj: (x)€ / day / Employee
- EWHm: (x)€ / month / Employee

ECDT

Caloric savings over job duration

- ECDT: (x)cal / task of (x) min / Employee
- ECDTj: (x)cal / day / Employee
- ECDTm: (x)cal / month / Employee

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Formulas
and key variables

CO2

EcoCO2

CO_2 savings per KWh reduction

- EcoCO2: Kg / Kwh / task of (x) min / Employee
- EcoCO2j: Kg / Kwh / day / Employee
- EcoCO2m: Kg / Kwh / month / Employee

The water

EcoEau

Liters of water saved per lowering KWh

- EcoEau: Litres of water / task of (x) min / Employee
- EcoEauj: Liters of water / day / Employee
- EcoEaum: Litres of water / month / Employee

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Formulas

and key variables

Concentration

CDCMax

Share of caloric expenditure on ECDT at maximum concentration

- x% of calories available for prolonged maximum concentration
- ECDT * Coef_Max_Concentre

DCMS

Duration of Additional Maximum Concentration (min)

- Duration equivalent to CDCMax
- CDCMax / ref_cal_per_minute

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Formulas
and key variables

Performance

BPGBQ

Quantified Gross Overall Performance Profit

- (x)% performance / Employee

G_CMAX

Concentration Gain on Caloric Expenditure in Max Concentration

- (x)% Concentration Capacity Max

Usage rate

Usage weighting

- (x)% of tasks actually performed by AI

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Formulas
and key variables

Quality

Qa_perf

Quality factor
- (x)% in quality rendered

BPPQ

Quality-weighted performance profit
- (x)% in overall performance

RGE
Result of Gain Equation

- (x)€ / Employee
- **GFTm**: (x)€ / employee / month
- **Weighting BPGBQ**: (x)% of performance
- **Weighting G_CMAX**: (x)% Max concentration capacity
- **Weighting QA_PERF**: (x)% quality rendered
- **BPPQ weighting**: (x)% overall performance weighted by quality
- **Usage rate:** (x)% of tasks actually performed by AI

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Explanations

of variables and indicators

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The time

Explanations

GTT

GTT: time savings per task

GTT, or Gains in Time per Task, refers to the time saved thanks to the speed of execution brought about by the integration of artificial intelligence into a particular process. This gain is determined by comparing the time normally needed to complete a task without AI with the time required when AI is used.

Purpose and benefits of GTT

- Evaluate the effectiveness and influence of AI on employee productivity.
- Provide a clear perspective on the time that can be saved.
- Quantify the time freed up so that employees can concentrate on higher value-added tasks.

Calculations

The GTT is formulated as follows

- Usual Task Time (TPTH): Time needed to complete the task without AI.
- Time per Task with AI (TPTIA*): Time needed to complete the task with AI.
- Time gain per task (GTT): [GTT = TPTH - TPTIA] This calculation determines the gain in minutes per task.

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The time

Explanations

GTTj

GTTj: time savings per day

GTTj, or Gains in Time per Day, is the sum of time savings achieved every day. It enables companies to see how AI integration can optimize their day-to-day operations and support the decision to invest in this technology. Calculating the GTTj is crucial, as it offers a clear perspective on the time savings achieved on a daily basis.

Calculations

GTTj is calculated as follows:

- Task frequency (freqTache) : Number of times a task is performed per day.
- Time savings per task (GTT): Calculated as described above.

Formula: [GTTj = GTT x freqTache]

This determines the total gain in minutes per day.

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The time

Explanations

GTTm

GTTm: time savings per month

GTTm, or Time Savings per Month, provides a global view of monthly time savings, enabling companies to analyze the cumulative effects of AI on their processes over an extended period.

Calculations

GTTm is calculated as follows:

- Time savings per day (GTTj): Calculated as described above.
- Number of working days per month: In general, 20 working days are considered.

Formula: [GTTm = GTTj x 20]

This determines the total gain in minutes per month.

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The time

Explanations

TPTIA

TPTIA, or Time per Task with Artificial Intelligence, shows how long it takes to complete a task using artificial intelligence.

Calculations

TPTIA is calculated by reducing the usual task time (TPTH) according to the percentage of improvement provided by AI (COEFTPTIA**).
The TPTIA is given by the following formula:

- Calculation formula: TPTIA = TPTH - (TPTH * COEFTPTIA)

Variables:

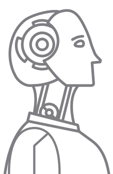
- TPTH: usual task duration
  - This is the usual time needed to complete a task without the help of artificial intelligence. It represents the benchmark against which improvements are measured.
- COEFTPTIA: Coefficient TPTIA
  - This coefficient is derived from the percentage of improvement brought about by AI. It is calculated by converting the percentage improvement into a multiplication factor (for example, if the improvement is 60%, the COEFTPTIA will be 0.60).

Calculation example

If a task took 60 minutes (TPTH) and we had an improvement coefficient of 60% (COEFTPTIA = 0.60), the TPTIA would be calculated as follows:

- TPTIA = 60 minutes - (60 minutes * 0.60)
- TPTIA = 60 minutes - 24 minutes
- TPTIA = 36 minutes

So, with AI, the task would now take 36 minutes instead of 60 minutes, demonstrating a significant time saving thanks to optimization.



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GFT

The Financial Gain per Task (GFT) precisely evaluates the savings achieved for each task performed, taking employer charges into account.

It illustrates the economic benefit derived from integrating artificial intelligence (AI) into a company's operations.

By tangibly demonstrating the economic benefits associated with improved task efficiency, the GFT justifies the investments required for the transition to AI.

It provides an essential metric for companies seeking to assess the ROI of AI integration.

Calculations

The GFT calculation is based on the following elements:

- GTT: Time saved per task in minutes.
- TH: Hourly labor cost, expressed in euros per hour.

The formula is as follows: $GFT = (GTT * (TH / 60)) + (GTT * (TH / 60) * charges\_patronal / 100)$

Explanation of variables :

- GTT: Represents the time saved by automating the task.
- TH: Hourly rate representing the cost of labor per hour.
- charges_patronal: The additional charges to be taken into account to evaluate the real cost of the employee.

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GFTj & GFTm

GFTj: financial gain per task per day

The Financial Gain per Task per Day (GFTj), represents the financial savings achieved on a daily basis for each task optimized by AI, thus facilitating decision-making concerning resource allocation.

Calculations

GFTj is calculated as follows: GFTj = GFT * task frequency per day

GFTm: financial gain per task per month

The Financial Gain per Task per Month (GFTm) represents the financial savings achieved on a monthly basis for each optimized task, providing a clear picture of long-term savings.

Calculations

GFTm is calculated as follows: GFTm = GFTj * (No. of working days per month)

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EKH

EKH (kWh Savings) represents the amount of energy saved by integrating artificial intelligence (AI) into the tasks performed.

EKH evaluates the energy savings achieved, enabling companies to assess the energy impact of their move to AI.

This measure is invaluable, as it highlights the reduction in energy costs and its beneficial effects on the environment.

By reducing their energy consumption, companies can not only save money, but also play an active role in the fight against climate change.

Calculations

EKH is calculated by subtracting energy consumption with IA from energy consumption without IA.

Formula :

EKH = Consumption without IA - Consumption with IA

Explanation of variables :

- Consumption without AI: This is the amount of energy (in kWh) used to perform a task without the assistance of the AI. It is calculated from the power* of the equipment used (in Watts) multiplied by the duration of use of the equipment (in hours) and converted into kWh.
- Consumption with AI: This is the amount of energy (in kWh) used to perform the same task, but with AI support. This calculation also takes into account the power of the equipment used (in Watts) and the duration of equipment use (in hours).

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EKH

Detailed calculation:

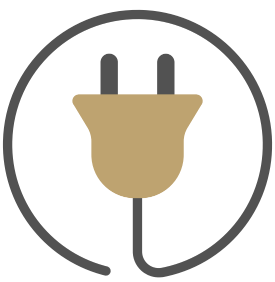
- Consumption without AI (in kWh) = (Equipment power in Watts / 1000) × Operating time without AI (in hours)
- Consumption with AI (in kWh) = (Equipment power in Watts / 1000) × Operating time with AI (in hours)

EKHj & EKHm

Savings per period :

- EKHj (kWh savings per day): Calculated by multiplying the EKH by the frequency of tasks performed per day.
- EKHm (Savings kWh per month): Calculated by multiplying the EKHj by the average number of working days in the month.

* Hardware power refers to the electrical consumption of a computer, expressed in watts. Each task performed by an employee requires the use of a computer, resulting in energy consumption measured in kWh.



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EWH

The EWH quantifies the financial savings obtained on the basis of the EKH.

This enables companies to accurately assess the impact of AI on their energy costs, providing a concrete assessment of efficiency in terms of sustainability and profitability.

Calculations

- EWH (Financial Savings per kWh): EWH is obtained by multiplying EKH by the price per kWh. This converts energy savings into tangible financial savings, providing a clear indicator of the financial benefits associated with using AI.
- EWH = EKH x Price per kWh

Variables involved

- EKH: Kwh savings, representing the difference in energy consumption between performing a task without AI and with AI. This variable is crucial to understanding the impact of AI on energy consumption.
- Price per kWh: Unit cost of electrical energy, which can vary according to contract or supplier. This price is essential for calculating the financial savings, as it determines the monetary value of the energy savings achieved.

In short, EWH integrates the importance of energy efficiency into operating cost management.

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EcoCO2

EcoCO2 is a variable that quantifies the reduction in CO2 emissions achieved by using AI for a given task. This reduction is calculated on the basis of the energy savings achieved by reducing the time needed to perform the task with the help of AI.

EcoCO2 is calculated by multiplying two values:

- Kwh_ECO: which represents the energy savings in kWh achieved thanks to the reduction in the time needed to use hardware for the task, made possible by AI.
- kgCO2ParKWh: a constant representing the quantity of CO2 emitted per kWh of electricity consumed. In France, this value is estimated at around 0.06 kg of CO2 per kWh (source: ADEME).

In this way, EcoCO2 highlights one of the environmental benefits of integrating AI into work processes: by reducing the time needed to complete a task, AI reduces the energy consumption of IT equipment, and therefore the CO2 emissions associated with this consumption.

The variables EcoCO2d, EcoCO2m and EcoCO2m_including_all_employees then enable this calculation to be extended to different time scales (day, month) and organizational scales (individual, entire company), to give a global view of the positive impact of AI in terms of reducing CO2 emissions.

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EcoEau

EcoWater is a variable that represents the amount of water saved in liters for a given task, thanks to the reduction in time needed to complete that task with the help of AI. This water saving is calculated on the basis of the energy savings achieved.

EcoEau is calculated by multiplying two values:

- Kwh_ECO: which represents the energy savings in kWh achieved thanks to the reduced time spent using the hardware for the task, made possible by the AI.
- litresEauParKWh: which is a constant representing the quantity of water required to produce one kWh of electricity. In France, it is estimated that the production of one kWh of electricity requires around 2.5 liters of water (source: ADEME).

In this way, EcoEau makes it possible to quantify another environmental benefit of AI integration: by reducing energy consumption, AI indirectly saves the water needed to produce this energy.

For example, if the use of AI saves 1 kWh of electricity for a given task (Kwh_ECO), this means that 2.5 liters of water have been saved for this task (EcoWater), as this is the amount of water that would have been needed to produce this kWh of electricity.

As with EcoCO2, the variables EcoEauj, EcoEaum and EcoEaum_including_all_employees enable this calculation to be extended to different time scales (day, month) and organizational scales (individual, entire company), to give a global view of the positive impact of AI in terms of water savings.

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Concentration
Explanations

ECDT

ECDT, or Caloric Savings on Task Duration, is a metric that quantifies the reduction in caloric expenditure when performing a task through the use of artificial intelligence (AI).

This indicator is crucial for measuring the impact of AI on employees' cognitive availability when performing specific tasks.

ECDT determines how many calories are saved by using AI compared to performing the task without assistance, which can have significant implications for employee health and operational efficiency.

By reducing the caloric load associated with task execution, employees can improve their concentration and general well-being.

Positive impact on maximum concentration time
Using AI to perform tasks not only saves calories, but also increases employees' maximum duration of concentration.

By reducing calorie consumption per task, individuals are able to maintain a higher level of attention over longer periods (DCMS - below). This translates into tangible benefits for overall team performance.

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Concentration

Explanations

ECDT

Impact on overall performance

Better concentration, induced by calorie savings thanks to AI, can lead to:

- Increased productivity: Employees can complete more tasks in less time, improving overall efficiency.
- Improved quality of work: With greater concentration, the accuracy and quality of tasks performed increases, reducing error rates and the need for rework.
- Employee satisfaction: A less energy-intensive workload and better performance can lead to increased employee satisfaction, fostering a positive working environment.

Calculations

ECDT is calculated by subtracting the caloric expenditure for the duration of the task with AI from the caloric expenditure without AI.

- ECDT = cal_pour_la_duree_tache_sans_ia - cal_pour_la_duree_tache_avec_ia

Where :

- cal_pour_la_duree_tache_sans_ia represents the calories expended to complete the task without AI assistance.
- cal_pour_la_duree_tache_avec_ia represents the calories expended to perform the same task with AI assistance.

This calculation yields a value that indicates how many calories are saved by using AI for a given task, while promoting maximum concentration and improved overall performance.

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DCMS

The DCMS variable (Duration Maximum Extra Concentration) is designed to measure the length of time an individual can maintain a high level of concentration.

In other words, it represents the time during which an employee can concentrate to the maximum on tasks, without being distracted or fatigued. This measure is essential for assessing the impact of AI on cognitive performance.

The benefits of DCMS

DCMS plays a crucial role in several areas:

- **Optimizing cognitive performance:** By determining how long an employee can remain focused at his or her peak, companies can better plan tasks that require sustained attention. This is particularly important for tasks requiring creativity or complex thinking.
- **Prevention of mental fatigue:** By knowing the maximum concentration time, managers can organize strategic breaks to avoid cognitive overload, improving employee well-being and preventing burnout.
- **Effectiveness of AI in processes:** DCMS can be used to assess the extent to which the introduction of AI and automation tools can free up time and improve concentration intensity, by reducing distractions associated with repetitive tasks.

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Concentration

Explanations

DCMS

Calculations

DCMS is calculated as follows:

DCMS = CDCMax / ref_cal_par_minute

Details of the variables involved:

- CDCMax (Calories Available to Expend in Maximum Concentration): This represents the total amount of calories that can be allocated from the Caloric Savings on Task Duration (CSTT). In other words, it's the maximum amount of extra concentration possible over a work period, made possible by the calories saved.
- ref_cal_par_minute (Reference Calories Expended per Minute): This figure reflects the average energy expended by an employee per minute when engaged in a task. It converts the calories saved into extra concentration time.

In short, DCMS is an essential indicator that assesses how much extra time an employee maintains a high level of concentration, thanks to AI.

It enables companies to see how AI can not only boost productivity, but also improve the quality of work by helping employees stay focused for longer.

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BPGBQ

The BPGBQ (Quantified Gross Global Performance Benefit) evaluates the improvement in a company's performance, taking into account all the dimensions affected by the implementation of AI.

The BPGBQ is crucial for several reasons:

- **Investment justification:** By demonstrating the multi-dimensional benefits of AI, the BPGBQ helps justify the efforts and expenditure involved in the transition to AI.
- **Identifying areas for improvement:** By analyzing the components of the BPGBQ, companies can identify areas requiring adjustment or additional investment to maximize benefits.
- **Performance tracking:** The BPGBQ enables performance to be tracked over time, facilitating comparisons between different periods or improvement strategies implemented.
- **Building stakeholder confidence:** By providing tangible evidence of improvements, the BPGBQ can boost the confidence of investors, customers and employees in an AI transition strategy.

Calculations

The BPGBQ is calculated using the following formula:

BPGBQ = (Cost of internal defects before - Cost of internal defects after) + (Cost of warranties before - Cost of warranties after) + Sales increase + Productivity gains - Cost of investment in quality

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Performance

Explanations

BPGBQ

Explanation of the variables involved :

- **Cost of internal defects :**
  - **Before:** This parameter represents the percentage of financial losses due to internal defects in the company's processes prior to the implementation of AI improvements. This includes costs related to errors, product returns, or other inefficiencies.
  - **After:** This parameter represents the adjusted percentage of financial losses resulting from internal defects, after AI implementation.A significant reduction in this cost is a direct indicator of the effectiveness of the improvements.

- **Warranty costs :**
  - **Before:** This percentage represents the expenses incurred by the company due to warranty claims prior to the implementation of AI improvement initiatives.
  - **After:** This metric represents warranty-related expenses after process optimization. A decrease in this cost indicates an improvement in product or service quality.

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BPGBQ

Explanation of the variables involved :

- **Sales increase:** This parameter represents the percentage increase in sales linked to improved customer satisfaction, resulting from process optimization and induced quality improvement.
- **Productivity gains:** This percentage represents the improvement in productivity resulting from changes implemented, such as reduced working hours or increased production.
- **Quality investment costs:** This percentage represents the costs incurred to improve the quality of products or services, including training, the purchase of new equipment or the implementation of new technologies.

Reference rates for BPGBQ variables:

Default reference rates are average values which can be adjusted as required.

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G_CMAX

G_CMAX represents the increase in maximum concentration thanks to the use of artificial intelligence (AI).

It measures the extent to which AI improves employees' ability to remain intensely focused on a task for an extended period.

By extending this period of maximum concentration, employees can complete their tasks more efficiently, which improves overall quality and performance.

Calculations

G_CMAX is calculated using the following variables:

- **CMAXinit**: This is the time during which the intensity of concentration is at its highest without the use of AI.
- **CMAX_IA**: This is the time during which the concentration intensity is at its maximum with the use of AI.
- **G_CMAX**: This result is expressed as a percentage, indicating the increase in concentration capacity at the highest possible intensity thanks to the use of AI.

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Performance

Explanations

G_CMAX

Concentration gain is calculated using the following formula:
G_CMAX = ((CMAXinit - CMAX_IA) / CMAXinit) * 100

In summary, G_CMAX is a key intensity indicator that shows how AI integration can improve employees' concentration intensity, thus contributing to better productivity.

Reference values:
The default standard indicates that, whatever the type of task, maximum concentration is maintained for 60% of the time required to complete it.

Thus, any acceleration in processing time combined with DCMS-induced cognitive performance increases energy availability for high-intensity caloric expenditure.

This in turn improves the ability to maintain maximum concentration for the current task or for other tasks.

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QA_PERF

The QA_PERF indicator represents adjusted performance after taking into account various improvement factors such as concentration gains and caloric savings. It is calculated by applying a total increase factor to the base performance, expressed as a percentage.

QA_PERF provides a precise measure of overall performance improvement, weighted by the effects of induced quality. This enables companies to assess the impact of AI even more accurately.

Calculations

To calculate QA_PERF, follow these steps:

- Convert the quantified gross global performance benefit (QGBP) to decimal.
- Calculate the weighted concentration gain in decimal.
- Calculate weighted caloric savings.
- Add these gains to obtain the total increase factor.
- Apply this factor to BPGBQ_decimal to obtain QA_PERF_decimal.
- Convert QA_PERF_decimal to percentage to obtain QA_PERF.

Each variable used in this calculation has a key role:

- BPGBQ_decimal: Represents basic performance in decimal.
- gain_concentration_decimal: Concentration gain after weighting.
- economies_caloriques_pondere: Caloric savings after weighting.
- total_augmentation: Sum of weighted gains, representing the total increase in performance.

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BPPQ

BPPQ, or Quality-Weighted Performance Profit, is a measure that evaluates the overall improvement in a company's performance, taking into account gains in productivity, quality and focus.

The QPPB provides an overview of the benefits obtained after the implementation of artificial intelligence. This makes it possible to quantify the positive impact on overall performance.

Calculations

BPPQ is calculated by applying the increases due to the concentration gain and QA_PERF quality to the baseline performance (BPGBQ).

- BPGBQ: Represents baseline performance.
- G_CMAX: Max concentration gain in percent, calculated by comparing concentration times with and without AI.
- QA_PERF: Performance after adjustment, taking into account caloric savings and weighted concentration gains.

Formula

- Intermediate calculation: bppqIntermediate = BPGBQ * (1 + G_CMAX / 100)
- Final BPPQ: BPPQ = bppqIntermediate * (1 + QA_PERF / 100)

Each element of the calculation plays its part in providing an accurate assessment of performance improvement, integrating not only financial benefits, but also focus and quality.

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Exponential

factors

ESP METHOD

OCDS FOCUS

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ESP METHOD

Exponential Segmentation Process

Exponential factor due to segmentation effect *with the ESP method*

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What is ESP?

The ESP, or Exponential Segmentation Process, is a task segmentation method that enables work management to be approached from the angle of artificial intelligence (AI). By breaking down tasks into micro-tasks, this approach facilitates finer, more optimized management.

Thanks to ESP, each micro-task can be introduced into a SROC (System of Optimized Context Distribution) process, maximizing the use of resources and improving the quality of results. While ESP focuses on task decomposition, SROC ensures the efficient execution of these micro-tasks thanks to AI.

>Learn more about ESP (Exponential Segmentation Process)

Impact on RGE (Result of Gain Equation)

Ultra-segmentation of tasks into micro-tasks has a direct and powerful impact on every variable in the gain equation, resulting in exponential effects through accumulation.

Influence on time savings (GTT)

By breaking down tasks into micro-tasks, each component of processing time can be optimized. This means that the Time Per Task with AI (TPTIA) can be significantly reduced for each micro-task. The accumulation of these reductions results in a much greater total time saving (GTT), as each second saved at each stage adds up.

Improved financial gain (GFT)

Fine segmentation of tasks increases Financial Gain per Task by reducing errors and associated costs, while optimizing processing time and resource utilization.

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Energy cost reduction (EKH)

Segmentation makes it possible to precisely target energy-intensive and time-consuming steps. By optimizing the use of resources at each micro-task, total energy consumption is reduced. This directly improves Kwh savings (EKH) and the associated financial savings (EWH), since the energy consumed is reduced at each stage.

Greater concentration (G_CMAX)

As each micro-task is shorter and more focused, maximum employee concentration can be maintained more easily. This increases Concentration Gain (G_CMAX), as switching from one task to another is facilitated, reducing cognitive fatigue and increasing efficiency.

Cumulative and exponential effect

The cumulative effect of optimizing each variable is exponential. When each micro-task is optimized, the gains are not simply added up, but multiply, as time, money, energy and concentration gains amplify each other.

In short, ultra-segmentation of tasks into micro-tasks maximizes the effects of the gain equation by optimizing each variable, leading to exponential results through accumulation.

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OCDS
FOCUS

Optimized Context
Distribution System

Invention protégée

Exponential factor due to specialized distribution effect

with OCDS

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The SROC for Système de Répartition Optimisée des Contextes (Optimized Context Distribution System) is a content management system for the systematic, cross-disciplinary and multidimensional integration of generative AI into management applications and integrated software packages. The SROC is based on the categorized and hierarchical management of data, content and contexts dedicated to AI, ensuring optimal distribution to specialized anthropomorphic AI, through an approach that takes into account the intrinsic limits of generative AI.
>Learn more about SROC: Optimized Context Distribution System

Impact on RGE (Result of Gain Equation)

The ability to easily direct micro-task processing towards specialized AI offers significant advantages, amplifying the effects on the variables of the gain equation.

Enhanced relevance

Each specialized AI is designed to excel in a particular domain, ensuring that each micro-task is handled with increased accuracy and relevance. This improves the quality and accuracy of results, reducing errors and increasing overall efficiency. The Error Reduction Rate (ERR) benefits directly from this specialization, reducing correction costs.

Increased performance

By assigning specialized AIs to specific micro-tasks, the performance of each task is optimized through access to immediate relevance. These AIs can execute processes faster and with better adaptation to the specific requirements of each micro-task. This translates into increased time savings (GTT) and financial gains (GFT), as tasks are completed more efficiently.

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Optimizing financial gains

Improving accuracy and speed through specialized AI reduces operational costs. By increasing the efficiency of each micro-task, the financial gain per task (GFT) is maximized. Savings achieved by optimizing human and material resources translate into increased RGE, as every euro invested in automation and segmentation generates a higher return.

Lower energy costs

The optimization of micro-tasks by specialized AIs translates into significant time savings. This in turn reduces equipment uptime, which in turn reduces energy consumption. Indeed, less time spent on a task means less time during which machines consume energy. This reduction in equipment usage time saves Kwh (EKH) and improves the associated financial savings (EWH). Optimizing energy consumption also contributes to the sustainability of operations by reducing the overall carbon footprint.

Cumulative and multiplier effect

The use of specialized AI for each micro-task creates a multiplier effect on gains. The benefits of each optimized micro-task combine to produce exponential improvements in efficiency and savings across the organization. RG reflects this positive impact, as every variable in the gain equation is magnified by specialization.

In short, the segmented distribution of micro-tasks to AIs optimized for their specific functions maximizes relevance, performance and savings, thereby multiplying the effects on the variables in the gain equation.

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List

of variables

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Les variables
Liste

1-20

1. nomTache : Task name.
2. TH : Hourly labor cost rate (in euros per hour).
3. tauxUsage : AI usage rate (in percentage).
4. freqTache : Task frequency per day (in number of tasks per day).
5. TRDH : Error reduction rate (in percentage).
6. TPTH : Usual task duration (in minutes).
7. POA : Improvement percentage via AI (in manual mode).
8. COEFTPTIA : Time coefficient per task with AI (multiplicative factor).
9. TPTIA : Time per task with AI (in minutes).
10. GTT : Time saved per task (in minutes).
11. GTTj : Time saved per day (in minutes).
12. GTTm : Time saved per month (in minutes).
13. nbrEmployee : Number of employees.
14. EcoEau : This variable calculates the amount of water saved per task by multiplying the number of kilowatt-hours saved (Kwh_ECO) by the amount of water saved per kilowatt-hour (litresEauParKWh).
15. EcoEauj : This variable represents the amount of water saved per day. It is calculated by multiplying the amount of water saved per task (EcoEau) by the frequency at which the task is performed (freqTache).
16. EcoEaum : This variable calculates the amount of water saved per month. It is obtained by multiplying the amount of water saved per day (EcoEauj) by 20, which is the number of working days in a month.
17. EcoEaum_incluant_tout_employe : This variable represents the total amount of water saved per month at the level of all employees. It is calculated by multiplying the amount of water saved per month by one employee (EcoEaum) by the total number of employees (nbrEmployee).
18. EcoCO2 : This variable calculates the amount of CO2 saved per task. It is obtained by multiplying the number of kilowatt-hours saved (Kwh_ECO) by the amount of CO2 saved per kilowatt-hour (kgCO2ParKWh).
19. EcoCO2j : This variable represents the amount of CO2 saved per day. It is calculated by multiplying the amount of CO2 saved per task (EcoCO2) by the frequency at which the task is performed (freqTache).
20. EcoCO2m : This variable calculates the amount of CO2 saved per month. It is obtained by multiplying the amount of CO2 saved per day (EcoCO2j) by 20, which is the number of working days in a month.

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Les variables

Liste

21-50

1. EcoCO2m_incluant_tout_employe : This variable represents the total amount of CO2 saved per month at the level of all employees. It is calculated by multiplying the amount of CO2 saved per month by one employee (EcoCO2m) by the total number of employees (nbrEmployee).
2. THE : Hourly rate of an employee (in euros per hour).
3. VHH : Hourly volume of an employee per week (in hours).
4. charges_patronal : Employer charges (in percentage).
5. GFT : Financial gain per task (in euros).
6. GFTj : Financial gain per day (in euros).
7. GFTm : Financial gain per month (in euros).
8. price_per_kWh : Price per kWh (in euros).
9. PCW : Energy consumption in watts.
10. PCKW : Energy consumption in kilowatts.
11. DUH : Duration of use without AI (in hours).
12. CEKWH : Energy consumption without AI (in kWh).
13. CUE : Cost of use without AI (in euros).
14. DUHIA : Duration of use with AI (in hours).
15. CEKWHIA : Energy consumption with AI (in kWh).
16. CUEIA : Cost of use with AI (in euros).
17. Kwh_ECO : Savings in kWh.
18. Kwh_ECO_Jour : Savings in kWh per day.
19. Kwh_ECO_MOIS : Savings in kWh per month.
20. metabolic_equivalent_of_task : Metabolic equivalent of the task.
21. weight_human : Weight of the human (in kg).
22. DC : Caloric expenditure for the task.
23. DC_DUREE : Caloric expenditure for the duration of the task without AI (in minutes).
24. DC_DUREE_IA : Caloric expenditure for the duration of the task with AI (in minutes).
25. TCJ : Conversion rate of calories to joules.
26. ref_cal_jour : Caloric reference per day (in calories).
27. ref_cal_par_heure : Caloric reference per hour (in calories).
28. ref_cal_par_minute : Caloric reference per minute (in calories).
29. ref_joule_jour : Joule reference per day (in joules).
30. ref_joule_heure : Joule reference per hour (in joules).

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Les variables
Liste

51-80

1. ref_joule_par_minute : Joule reference per minute (in joules).
2. CDT : Calories for the duration of the task without AI (in calories).
3. CDTIA : Calories for the duration of the task with AI (in calories).
4. EH_HUMAIN : Human energy for the duration of the task without AI (in joules).
5. EH_AVEC_IA : Human energy for the duration of the task with AI (in joules).
6. ECDT : Caloric savings per task (in calories).
7. ECDT_jour : Caloric savings per day (in calories).
8. ECDT_mois : Caloric savings per month (in calories).
9. EJDT : Joules saved per task (in joules).
10. EJDT_jour : Joules saved per day (in joules).
11. EJDT_mois : Joules saved per month (in joules).
12. Coef_Max_Concentre : Weighted coefficient of energy gain.
13. CMAXinit : Maximum concentration over the initial duration (in minutes).
14. CMAX_IA : Maximum concentration over the duration with AI (in minutes).
15. G_CMAX : Percentage gain in concentration per task (in percentage).
16. CMAXinit_PAR_JOUR : Maximum concentration over the initial duration per day (in minutes).
17. CMAX_IA_PAR_JOUR : Maximum concentration over the duration with AI per day (in minutes).
18. G_CMAX_PAR_JOUR : Percentage gain in concentration per task per day (in percentage).
19. CMAXinit_PAR_MOIS : Maximum concentration over the initial duration per month (in minutes).
20. CMAX_IA_PAR_MOIS : Maximum concentration over the duration with AI per month (in minutes).
21. G_CMAX_PAR_MOIS : Percentage gain in concentration per task per month (in percentage).
22. duree_reel_de_concentration_disponible_min : Actual available concentration duration in minutes (in minutes).
23. CDCMax : Calories available attributable to maximum concentration.
24. DCMS : Additional maximum concentration time in minutes (in minutes).
25. DCMSj : Additional time available per day in minutes (in minutes).
26. DCMSm : Additional time available per month in minutes (in minutes).
27. cout_defauts_internes_avant : Cost of internal defects before improvement (in percentage).
28. cout_defauts_internes_apres : Cost of internal defects after improvement (in percentage).
29. cout_garanties_avant : Cost of warranties before improvement (in percentage).
30. cout_garanties_apres : Cost of warranties after improvement (in percentage).

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Les variables
Liste

81-112

1. augmentation_ventes : Increase in sales/customer satisfaction (in percentage).
2. gains_productivite : Productivity gains before concentration improvement (in percentage).
3. augmentation_concentration : Increase in productivity due to concentration improvement (in percentage).
4. cout_investissement_qualite : Quality investment cost (in percentage).
5. BPGBQ : Quantified Gross Overall Performance Benefit (in percentage).
6. k1 : Weighting coefficient for concentration gain.
7. k2 : Weighting coefficient for caloric savings.
8. gain_concentration_pondere : Weighted concentration gain.
9. economies_caloriques_pondere : Weighted caloric savings.
10. BPGBQ_decimal : BPGBQ in decimal.
11. gain_concentration_decimal : Weighted concentration gain in decimal.
12. total_augmentation : Total increase factor.
13. QA_PERF_decimal : QA_PERF in decimal.
14. QA_PERF : QA performance after adjustment in percentage.
15. bppqIntermediate : Intermediate value for calculating BPPQ.
16. BPPQ : Final percentage.
17. avantageFinancier_gbl : Overall financial advantage.
18. gain_final_ponderation : Final weighted gain.
19. nbrEmployee : Number of employees.
20. VHHm : Human hourly volume per month (in hours).
21. cout_brut_salarie : Gross cost per employee each month (in euros).
22. cout_salarie_inc_charge : Net cost per employee each month (in euros).
23. coeficient_de_remplacement : Replacement coefficient (ratio of gains to costs).
24. gainTemps_heure_par_mois : Time gain in hours per month.
25. gainTemps_heure_par_mois_tous_employes : Time gain in hours per month for all employees.
26. tache_euro_full_day_taxed : Financial gain per task for a full day of work with charges (in euros).
27. tache_euro_full_month_taxed : Financial gain per task for a full month of work with charges (in euros).
28. tache_euro_full_year_taxed : Financial gain per task for a full year of work with charges (in euros).
29. tache_euro_full_day_taxed_all_pax : Financial gain per task for a full day of work for all employees with charges (in euros).
30. tache_euro_full_month_taxed_all_pax : Financial gain per task for a full month of work for all employees with charges (in euros).
31. tache_euro_full_year_taxed_all_pax : Financial gain per task for a full year of work for all employees with charges (in euros).
32. coeficient_de_remplacement_scenario : Replacement coefficient for the scenario (ratio of gains to costs).

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Les variables

Explications

113-126

1. nbrEmployee : Number of employees.
2. VHHm : Human hourly volume per month (in hours).
3. cout_brut_salarie : Gross cost per employee each month (in euros).
4. cout_salarie_inc_charge : Net cost per employee each month (in euros).
5. coeficient_de_remplacement : Replacement coefficient (ratio of gains to costs).
6. gainTemps_heure_par_mois : Time gain in hours per month.
7. gainTemps_heure_par_mois_tous_employes : Time gain in hours per month for all employees.
8. tache_euro_full_day_taxed : Financial gain per task for a full day of work with charges (in euros).
9. tache_euro_full_month_taxed : Financial gain per task for a full month of work with charges (in euros).
10. tache_euro_full_year_taxed : Financial gain per task for a full year of work with charges (in euros).
11. tache_euro_full_day_taxed_all_pax : Financial gain per task for a full day of work for all employees with charges (in euros).
12. tache_euro_full_month_taxed_all_pax : Financial gain per task for a full month of work for all employees with charges (in euros).
13. tache_euro_full_year_taxed_all_pax : Financial gain per task for a full year of work for all employees with charges (in euros).
14. coeficient_de_remplacement_scenario : Replacement coefficient for the scenario (ratio of gains to costs).

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Calculate

your RGE

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