

# Business intelligence

## Unit 1b – Key Performance Indicators

- A lot of words for Indicator, but mainly:
- KPIs represent a set of measures focusing on those aspects of organizational performance that are the most critical for the current and future success of the organization (Parmenter)
- Lets see this in detail

- KGIs, **Goal Indicators**, are defined, as concrete goals, based on abstract objectives such as increasing sales, improving customer satisfaction, raising availability, and raising employees' skill level.
- CSFs, **Critical Success Factor**, which are the key factors to achieve KGI, are extracted. By extracting CSFs, factors that must be focused on the most are clarified.
  - “These are the key areas in which favorable results are absolutely necessary for a particular manager to achieve his goals”.
- KPIs to grasp the current status of achievement of business process related to CSFs are defined. Usually a % or rate.

- Example:
  - KGI: 10% increase in sales
  - CSF: Increase net sales per customer
  - KPI: the customers of accessories of more than \$ 10 >30%
- Example:
  - KGI: Increase 10% customer satisfaction
  - CSF: Provide positive customer experience
  - KPI: Call Abandon rate
  - KPI: Call Waiting rate
  - KPI: Service Desk availability
  - ...

- Once KPIs are defined, proceed to the definition of desired targets, decision about concrete actions, and so on.
- Critical success factor: get new customers
- Indicator
  - New sells
  - Type: Outcome
  - Target: 5 per month
  - Action: Follow-up
- Indicator
  - New offers and proposals
  - Type: Driver
  - Target: 60 per month
  - Action: Publish in social-media

- Indicator vs Measure: indicators are obtained from measures composed of metrics. It often aggregates or combines multiple measures.
- [Kaplan&Norton] There are two fundamental types of KPIs: outcomes and drivers:
  - Outcome KPIs—sometimes known as lagging indicators—measure the output of past activity.
  - Driver KPIs—sometimes known as leading indicators or value drivers—measure activities that have a significant impact on outcome KPIs.
    - These KPIs measure activity in its current state (number of sales meetings today) or a future state (number of sales meetings scheduled for the next two weeks).
    - The latter is more powerful, since it gives individuals and their managers more time to adjust behavior to influence a desired outcome.

- Objective. Arrive at a meeting at 12.00.
- I'm in the car, what do I want to know? Which of the answers to these questions help me to act in order to fulfill the objective?
  - Will I be late if I continue at the current speed?
  - How many kilometers do I have left to reach the destination?
  - How much time do I have left to reach the destination?
  - How many kilometers have I traveled?
  - How long have I been traveling?
  - What is the current fuel consumption?
  - How many liters are left in the tank?
  - How many kilometers can I travel without refueling?
- What if there are more goals? For example: Lower cost.
  - Can I throw the bags so that the car weighs less and spend less fuel to reduce cost while maintaining speed?
  - Can I bribe the cops so they don't fine me if I get up the speed?

- More examples:
  - Mortality:
    - Action is possible?
    - Can I “correct” it?
    - If not, It is a KRI not a KPI.
  - Length of stay:
    - Action is possible?
    - Can I just discharge the patients early to improve this?
    - It is possible, but other KRI such as readmissions will increase.



- **RESULT indicators (RIs)** – are summary indicators, both financial and non financial that tell staff what they have done.
  - these can be measured daily, weekly, monthly, or quarterly.
- **PERFORMANCE indicators (PIs)** – are non financial measures tell staff and management what to do.
  - These are more focused in smaller targeted areas than KRI's, but less powerful than KPI's
  - These are measured daily, weekly, or monthly and are not as important as the KPIs.
  - **Number: 30-50 PIs and Ris.**
- **KEY RESULTS result indicators (KRIs)** – both financial and non financial measures that give an overview on past performance and are ideal for the owner/Board as they communicate how management have done in a critical success factor or balanced scorecard perspective.
  - Typically these are measured **monthly** or quarterly.
  - Number: 6-10.
- **KEY PERFORMANCE indicators (KPIs)** –are non financial measures that tell staff and management what to do to increase performance dramatically.
  - These are measured either 24/7, **daily**, or weekly.
  - **Number: 6-10.**
  - KPIs are the result of one action that directly contributes to a strategic objective and are measured over very short time periods: hours, days, weeks and months.

- KPIs characteristics [Parmenter]
  - Non financial measures (not expressed in \$s, Yen, Pds, Euro etc)
  - Measured frequently e.g. 24 by 7, daily or weekly
  - Acted upon by the CEO and senior management team
  - All staff understand the measure and what corrective action is required
  - Responsibility can be tied down to a team
  - Significant impact e.g. it impacts on more than one of top CSFs and more than one balanced scorecard perspective
  - They encourage appropriate action (e.g., have been tested to ensure they have a positive impact on performance whereas poorly thought through measures can lead to dysfunctional behaviour)
- It is imperative that the importance and impact of these measures are well understood by all, and the corrective action required if the performance is not reaching targets.

- Responsibility can be tied down to a team
  - “Within 12 months, every employee will be able to check their email, calendar and their personal top 10 KPIs at the breakfast table using their smartphone or tablet.”
  - Performance management needs to become personal, simple and directly effective. We need to put business metrics in the hands of the people who do the work and drive performance and make sure that KPIs leave the ivory tower called the boardroom.

- Other classification depending on what you are measuring
  - Risk Indicators show the risk to exceed the defined risk appetite in the future and should be able to accurately predict losses.
    - EJEMPLO: KPI de reducir un % costes medido como número de catéteres usados incrementa el KRI de tendencia reducida en número de infecciones de bacteriemia. Una tendencia sube y la otra baja, es una mirada al futuro.
  - Control Indicators, set the desired internal control effectiveness of an organization and
  - Lead Indicators are being increasingly used to measure the achievement of strategy goals (for instance, in terms of customer satisfaction).
  - DI: Diagnostic indicators ...
- There is no difference ... just the use

- Qualitative vs Quantitative.
- Quantitative data measures activity by counting, adding, or averaging numbers.
  - E.g.: inventory, purchasing, orders, accounting, employee injuries, number of training classes, ...
  - Quantitative data forms the backbone of most KPIs.
- The most common ones qualitative ones gather customer or employee satisfaction through surveys.
  - While the survey data itself is quantitative, the measures are based on a subjective interpretation of a customer's or employee's opinion on various issues.
  - These opinions can help explain why performance is dropping when all other indicators seem fine.

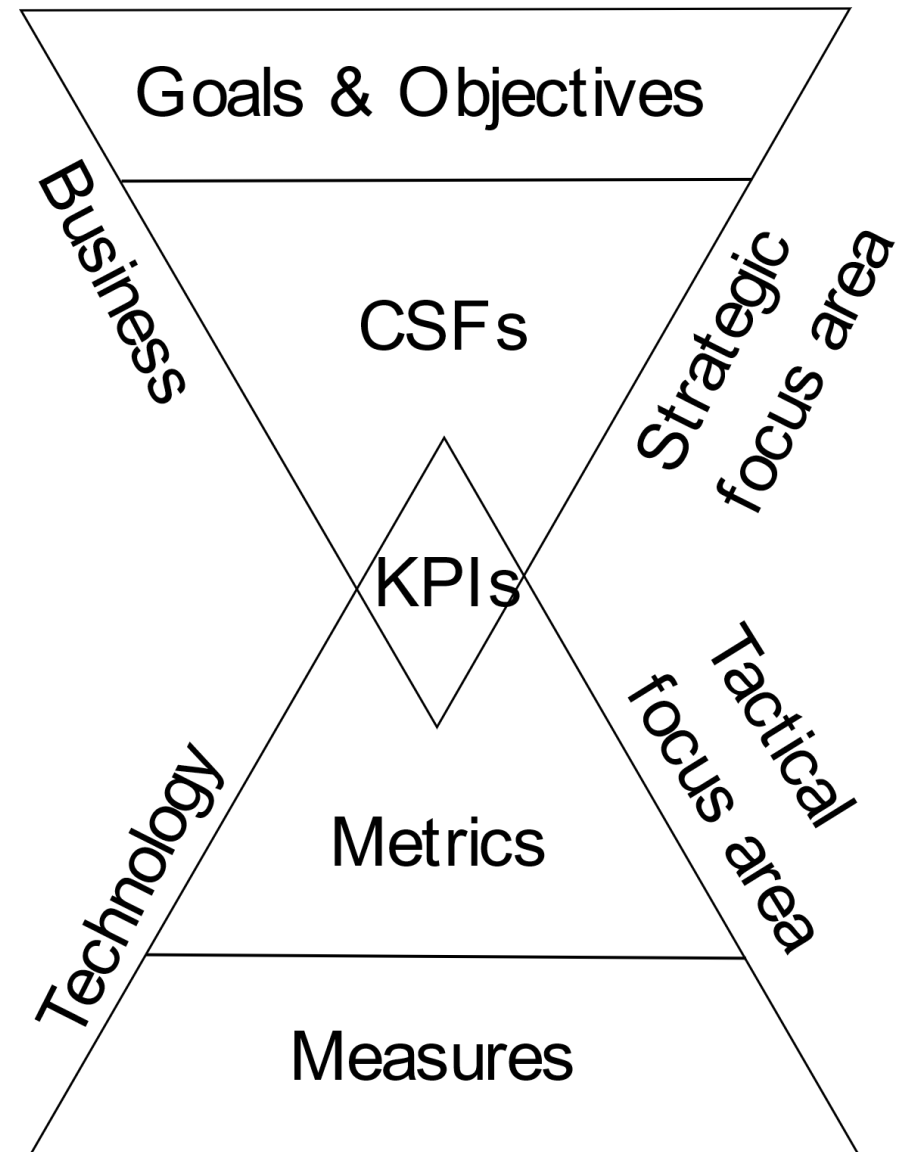
- Significant: Have a significant impact
  - Just a few KPI are important enough
  - Measure success, not only financial measures
  - What is important for the company?
  - Specific: strategic goals and specific area.
- Measurable: Must be quantifiable
  - They are indicators of status
  - Popularity? Organizational level? Known-how? Are measured with surveys (quantifiable) but based on subjectivity

- Assignable: specify who will do it.
  - Are acted on by the CEO and senior management team
  - Applicable through the company or service
  - Are measures that tie responsibility down to a team
- Realistic, and easy to use and understand
  - State what results can realistically be achieved, given available resources
  - Clearly indicate what action is required by staff
  - Encourage appropriate action, are in control of what we measure?
- Time-related – specify when the result(s) can be achieved
  - Measured each week? Time scale suitable.
  - And stable during in time. Shall we measure increase of benefits or money units?

- Others
  - Comparable
    - Used to compare different organization and data available
  - Verifiable
    - For an effective data collection
    - Process repeatable with robust data
  - Cost-effective
    - The cost of measuring and collecting information must be balanced with benefits



- Evaluate status/progress
- Identify changes
- Show if we are meeting our strategic business objectives
- Drivers of improvement
- Save time and increase efficiency
- Improve decision making



- KPI in HealthCare
  - Exitus rate
  - Admission and readmission rates
    - ICU without walls
  - Patient Wait Time: before check-in. In E.R.
  - Patient Satisfaction
- What others?
  - For next week: You have to search for national/local KPI for healthcare system or other problem.
  - Eg. Vaccination rate.

- KPI for SDG



- Example: SDG#6-Water and Sanitation

- Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

- Indicators:

- 6.5.1- Degree of integrated water resources management implementation (0-100)
      - 6.5.2- Proportion of transboundary basin area with an operational arrangement for water cooperation

- SDG#1- No Poverty

- Target 1.2: By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
  - Ind 1.2.1- Proportion of population living below the national poverty line, by sex and age
    - Ind 1.2.2- Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions