CARDS – Computer Assisted Regulatory Decision Support
- jumping to greater effectiveness -

CARDS, what is it?
CARDS (in Dutch CATS, hence the CATS-emblem) is a combination of a method, a model and software to arrive at optimal effectiveness of oversight. Two work sheets containing various information and assessments suffice to get CARDS started to arrive a longitudinal (4-years), goal-directed strategy, combining various preventive and repressive methods to various subpopulations, e.g. an economic sector. CARDS uses transparent, plausible steps to specify the strategy, that will yield measurable output and outcome.

How does it work?
For CARDS to be able to formulate a strategy it needs information from internal data sources and input from expersts in the field. To specify the main element of the CARDS-model (see circles):
1. the size of subpopulations and the degree of (non)compliance.
2. assessment by domain experts of causes of non-compliance;
3. an indicator of priorities.

In addition CARDS asks experts to judge all available and potential preventive and repressive methods (circle, step 4). See table on the right.

Using these inputs CARDS calculates a varied preventive-repressive strategy specified for a number of years, usually 4 years, to allow supervisory bodies to achieve substantial impact.
On this basis CARDS operationalizes the strategy outlined by defining a set of specific tasks, outlining the hours available and the qualities needed to execute the tasks well. Some of these tasks can be executed autonomously, others require cooperation with other, internal or external, parties. These specific tasks can be matched by the professional personnel and units that are best equipped and motivated to execute them.

CARDS as a method

CARDS is a content model and it is software, but above all CARDS is a method to help supervisory agencies to a better, more effective job, to see the options available, to weight them adequately, to explain the strategy arrived at to others. To do so, CARDS uses a number of key indicators or performance measures ('kengetallen'), some of which are conventional (such as control density), others are new (e.g. contact density) and some can be considered revolutionary (.e.g preventive impact value).

Kengetallen CATS	feit. (was)	gewenst (wordt)	verander index	toelichting
tijd per bedrijf (uren)	2,3	2,3	100	geen extra capaciteit
algemeen controle percentage	52%	42%	81	duidelijk gedaald, ambivalent
algemeen controle percentage vermoedelijke nalevers	41%	25%	60	sterk gedaald; gunstige ontwikkeling
algemeen controle percentage vermoedelijke overtreders	11%	17%	162	sterk gestegen; gunstige ontwikkeling
algemeen contact percentage	94%	142%	150	sterk gestegen, sterk positief
overall contact percentage; som van controle en contact	147%	184%	126	duidelijk gestegen, positief
basisverhouding repressie-preventie-ontwikkeling gewenst	90/10/0	65/20/15	350%	sterk verschoven richting preventie
ontwikkel-percentage	0	15		enorm sterk gestegen vanaf niets
verwachte effectiviteitswaarde repressie	149	153	103	ondanks minder tijd niet gedaald
verwachte effectiviteitswaarde preventie	40	60	150	duidelijk gestegen
verwachte totale effectiviteitwaarde toezicht	189	213	113	gestegen
overtredingspercentage	49	46	106	zal naar verwachting licht dalen

CARDS will even yield a prediction of the change in compliance based on the new strategy.

In effect CARDS is a logical evolution from its methodological foundation, a problem-solution cycle of management and operations, that follows a few basic steps; integrative analysis, flexible strategy, constructive execution and creative evaluation. This cycle will help supervisors to learn and to achieve better results each time by innovation, experiment, cooperation and comparison. CARDS gives new meaning and new tools to the concept of 'progressive insight'.

CARDS in the implementation stages

CARDS is well suited to formulate supervisory strategies, but its functionality does not stop here. We have distinguished various contexts, in which CARDS can be helpful, also in the implementation stages.

1. CARDS can be used as an **evaluation framework** to assess new and existing plans.
2. CARDS uses a number of essential variables and measures that help to arrive at better assesment and achievement of performance. These parameters allow for a rational calculation and preview of the effectiveness that is to be expected by implementing the strategy devised. Hence the use of new performance indcators such as contact intensity and preventive/repressive 'effectiveness value'. This means that CARDS is a new and **operational method** for optimizing effectiveness, in planning, execution and evaluation. Improvement and need for improvement will be signaled by these parameters and indicators.
3. Comparing these parameters and indicators between units and agencies helps to learn and cooperate between supervisors. Discussing and elaborating differences will yield numerous directions and clues for improvement and may lead to ambitions and cooperation to make progress a collaborative effort.
4. CARDS is a **expert model,** a model integrating experience, expertise and expectations, that can be put to test by practice and that can revised/adapted under the influence of practice, observation and results.
5. CARDS may therefore help to evaluate plans, report evaluations and readjust plans for subsequent us; without CARDS

Overall, CARDS helps supervisors to do their job in a more reflective, flexible and effective manner.

Components and examples

CARDS consists of a number of components. Below examples are given for each of the type of components used.

Components	Examples
facts, data	omvang subgroepen, omvang overtredingen
assumptions	interventions should be proportional to the negative consequences of non compliance and the attribution of causes; supervisory agencies allocate or create space (time and money) for innovation and development of new methods and strategies and to improve their data for analysis and evaluation
estimates	T11-causal cluster analysis, (relative) seriousness of non compliance
calculations	seriousness related to subpopulation, non compliance; proportion of accidental or purposeful non compliance
performance indicators	'classic indicators' such as control frequency, supervision time per enterprise, new indicators: contact frequency, basic proportion prevention-repression, expected impact value expected degree of non-compliance

Variety of use:
CARDS can be used by internal or external advisors – in different ways:
- *support tool*; to formulate supervisory strategies in an expedient way, with limited resources but with extensive insight;
- *educational tool*; for existing or new professional staff to understand basic principles of regulation and oversight;
- *discussion tool*; to discuss the most essential choices with management and policy departments
- *innovation tool*; integrated framework to assess the main needs for improvement of methods, processes and intervention strategies;

CARDS is very flexible and can be adapted to the vision as well as regulatory domains of supervisory agencies.

CARDS works/is effective!
CARDS has been tested, applied and improved in the context of 5 environmental agencies in the Netherlands on two different subjects and target groups. This application has given rise to its latest improvement, that is the specification of tasks that facilitate the attribution of tasks to the varying expertise and motivation of professional supervisors and staff.

Omgevingsdienst
Veluwe IJssel

Meerjarig toezichtsplan Horeca

Versie	1.0
Datum;	februari 2020
Omgevingsdienst:	OVIJ
Branche:	Horeca
Jaren:	2020-2023
Verantwoordelijke(n) rapport:	Henk Brueren
Analyse en rapportage:	CMC, CATS-methodiek & software

CARDS in practice
CARDS can be used/employed in two ways:
- as a project; CMC will collaborate with the supervisory agency to construct supervisory strategies.
- as a license: the supervisory agency will avail of the tool itself after transfer, not only of the software and additional instruments such as handbook and working sheets, but also of the expertise needed to understand and handle CARDS well. The transfer may imply inhouse training.

If you find it difficult to choose, you may try the first method to judge for yourself whether it is attractive to switch to the second method.

Advantages of CARDS:

Let us summarize the advantages of CARDS as we see them:

1. Information based: CARDS combines objective information with insights acquired in practice
2. Support: wherever possible input from professionals is used in an efficient manner, saving time and money to be used elsewhere. This involvement is known to create commitment to the results.
3. *Effectiveness*; limited but essential input yields transparent strategies that are expected to increase effectiveness in ways that can be monitored.
4. *Speed and flexibility:* use of expert models and Artificial Intelligence speeds up process and creates room for experiment and improvement.
5. Fit/custom made; easy adaptation to area of supervision makes the general tool custom made/fit.

These qualities make CARDS an innovative, tool that will help supervisory agents not only to make a step ahead, but to jump ahead.

Interested?

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