From management accounting to strategic management accounting in the public sector: a Balanced Scorecard for e-government projects

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Introduction

Over the last few years, digitalization in Public Administration (P.A.) has been a subject of interest among scholars and politicians (Jaeger and Thompson, 2003, Francoeur and Rothke, 2004, Saxena, 2005).

The Italian Minister for Innovation and Technology defines e-government as follows: "E-government (electronic government) represents a new concept of government organisation and operation. It offers the public information networks and services that can be accessed easily, quickly and transparently, thanks to the opportunities provided by digital technologies". Similarly, European Commission defines e-government as "the use of information and communication technology in public administrations combined with organisational change and new skills in order to improve public services and democratic processes and strengthen support to public policies".

E-government, thus, is the application of information and communications technologies (ICT) in order to enhance the effectiveness of a legislature, judiciary, or administration, either to improve efficiency or to change the relationship between citizen and government. As a result, the adoption of e-government solutions represents an extraordinarily challenging task for the Public Administrations (PAs), demanding significant financial investments, as well as noteworthy changes at a strategic, technological and organisational level.

It thus can be stated that the e-government adoption requires a crucial breakthrough in PA management (IDABC, 2005): in fact, the introduction of ICTs in the Public Sector asks for several changes both in front office and in back office activities, such as different practice throughputs, more formalised processing, new codifications, different ways of interaction with citizens etc. So, it is not surprising that many barriers and obstacles may emerge, requiring both internal and political commitment, guided by a long-term vision, and sizeable investments are needed.

No structures nor actors of public sector are exempt from modifications in their day-by-day activities and in their evolutionary trends, since immediate efficiency and continuous improvement are the guidelines defined by central governments. The challenge of innovation in the PAs has been answered by central governments even in terms of investments: for example, in Italy, from 2001 to 2006 more than € 900 millions have been dedicated to some 150 e-government projects spread all around the country; and UK will spend, from to 2001 to 2008, about € 6 billions to achieve its e-service provision targets.

In such a context it must be underlined the strong commitment of EU to encourage the exchange of good practices and the cooperation between administrations at all the levels in order to accelerate the adoption and to grant long-term cost saving through re-using.

The need for control in e-government

The pervasiveness of e-government impacts implies the need for a strong commitment of PA management in e-government and a great attention to performance measurement. This means that complete, precise, and motivating management accounting systems are requested in order to control the e-government introduction and day-by-day activities. In time, in fact, public sector has devoted significant efforts both in investments and in internal reorganization to face this revolutionary breakthrough. Such efforts aim at quantifying costs and benefits, at accomplishing a rational allocation of the public resources even through a multi-stakeholder perspective in order to improve PA efficiency and effectiveness, thus satisfying all the other relevant actors (e.g. citizenship and PA workers) as well. In order to pursue such goals, a managerial approach characterised by a precise and reliable control able to support decision making is increasingly necessary (OGC, 2003, Van Ryzin, 2004).

Besides these management and strategic argument, a more technological and organisational point of view supports the need for greater and

better control in e-government: analysing technological innovation and its diffusion through organisations, one of the most widely cited framework in literature is Nolan's Stage Theory (1973, fig. 1). Nolan's theory affirms that technological innovations generally pass through four evolutionary stages with substantial differences in terms of investments, role played by management and organisational impacts:

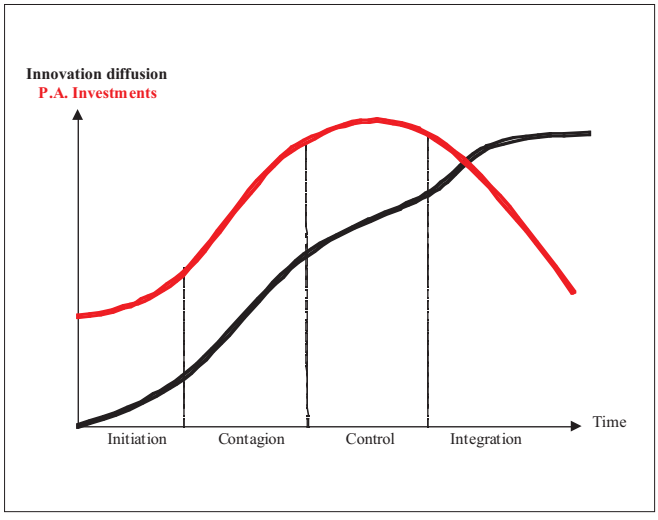
I. Initiation: first introduction of ICTs through strong investments; computing as a "change agent" frightening the organisation; minimal planning.

II. Contagion: rapid growth in ICT use; this step is characterised by a strong top management commitment, and steering committees tend to consider more important technology diffusion than economic performances; minor increasing in planning.

III. Control: once reached a good diffusion, proselytism starts being flanked by an increasing focus on cost control; a raising of ICT manager in the organisational hierarchy is not infrequent.

IV. Integration: control refinement in order to allow exploitation of innovation without runaway costs; focus on integrating ICTs in day-by-day activities and on enlarging their use in other business areas; established planning and a combination of short-term and long-term control.

Figure 1. Nolan's Stage Theory (1973) and budget curve



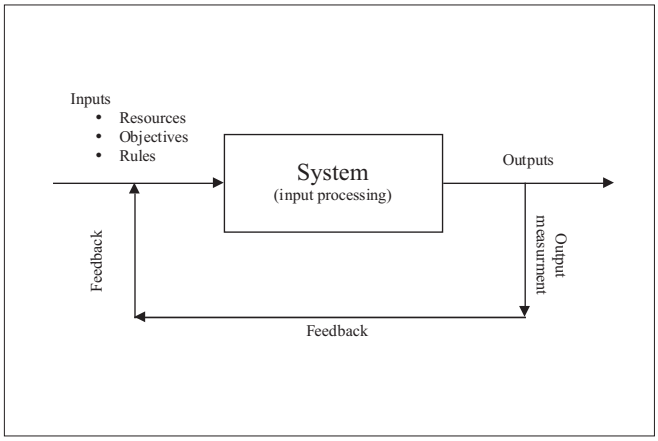
By now, e-government diffusion process seems to reflect the first two steps of Nolan's model: in the first phases of e-government introduction central governments, representing the top management and the steering committee in Nolan's model, have played an extraordinary role in terms both of cultural commitment and of economic effort towards the diffusion of e-government, while PAs, that is the users, showed – and, somehow, still show – some cultural distance. Nonetheless, central government significant investment have been flowing and an explicit target is still to make ICTs spread all over PAs, sometimes even independently from their immediate economic performance. So, according to Nolan's model, a framework developed observing the diffusion process of different ICT innovations among organisations, e-government diffusion is reaching the 3rd step of development, thus the hypothesis that it is time to start thinking about performance measurement in e-government may be supported, and this work aims at providing a deeper insight into such issue.

How to control e-government performances?

Academicians, PA managers and even the central governments have suggested performance measurement models in order to provide PAs with tools able to evaluate e-government operative efficiency and effectiveness (Kaplan, 1999, CNIPA, 2006, Niven, 2003) Substantially, this models share a common background: e-government benefits are measured under two main directions:

- Effectiveness measurement: it aims at measuring the degree of accomplishment of an objective. In e-government projects, it tends to be associated with diffusion objectives, usage and satisfaction among citizens and PA employees;
- Efficiency measurement: it aims at measuring the resources (time, money, human resources etc.) used to accomplish an objective. In e-government projects, it is associated with time and cost savings both for PAs and for citizens;

Figure 2. Cybernetic cycle in a planning & control process

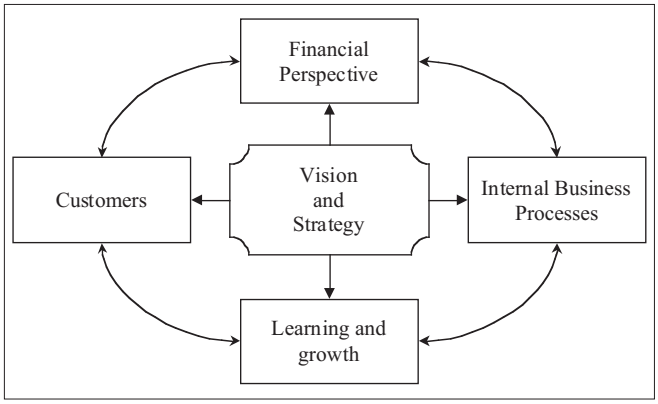


Most of the models suggested in literature are based on the cybernetic cycle framework characterising typical PMS (Azzone, 2000; Garrison, & Noreen, 2004; Anthony et al.; fig. 2), which affirms that a planning & control process should be articulated in five logical steps: (i) definition of the inputs, i.e. planning of the objectives (expected outputs), of the resources dedicated to accomplish them (budget), and of the rules the system under control has to follow while proces-

sing inputs (e.g. workflows, constraints etc.); (ii) inputs processing, i.e. the actual implementation; (iii) output measurement, i.e. the evaluation of the results of input processing; (iv) analysis of variances, i.e. understanding who or what is responsible for the differences between budgetary objectives and actual performances; (v) feedback, i.e. the implementation of countermeasures in order to refine the control on the system in terms of objectives re-setting, budget allocations and/or the modification of the system. Of course, such a model is extremely useful in management accounting, and, more in general, in all management activities, but, according to several authors (Kaplan & Norton, 1992, Bromwich & Bhimani, 1999, Roslender, 1995), it induces a predominant internal perspective that is inadequate for contemporary economic environment. First practises in management accounting date back the 1920s, in product-centred firms focused on economy of scale and technology development in order to deal with a substantially undifferentiated demand of a market still trying to appease standardized needs. The main issue in such a context was cost controlling, in order to grant a satisfactory margin in front of price decreases aimed at stimulating demand, thus production. Until the 1970s, such a perspective has not modified significantly: of course, markets became harder and harder to please, and this enabled segmentation strategies among corporations, but the predominance of dedicated flow lines and the resulting focus on economy of scale have not changed the primary focus on cost control in management accounting. The affirmation of more flexible manufacturing systems, derived from the increasing saturation in western markets that were requiring an enlargement in the set of products offered by companies, started, during the 1980s, to undermine traditional accounting practices, making budgetary and cost control harder. The affirmation of activity-based techniques (e.g. activity-based costing, ABC) can be seen as an answer to such trends. The growing importance of services both as self-standing economic activity and as a part of product-based offers had similar effects, due to services' intangibility, impossibility to be stocked, and intrinsic uniqueness and flexibility (at least in terms of time of erogation). So, competition, customer needs and satisfaction and technological innovation – all of which are at least partly external variables for organisations – have assumed in time a growing importance, and nowadays their monitoring can not be neglected as central issue in management. Accordingly, management accounting academicians have suggested a complementary approach to PMS based on a greater integration between management accounting and strategy. Corporate management accounting and performance measurement, in fact, underline the strengths and the weaknesses of an activity by the evaluation of effectiveness and efficiency in terms of level of use, cost, time and quality of the provisions (Azzone, 2000). Such a focalisation is, obviously, an indispensable prerogative in e-government control as well, but it might not be stand-alone since several authors have ascertained its poor long-term orientation (Roslender, 1995, Kaplan & Norton, 1992, Kaplan, 1992, Bromwich & Bhimani, 1989). In a company, under some circumstances, the strategic perspective might compensate such a limit through a keen setting of the objectives in order to harmonize short and long-term goals. Nevertheless, in nowadays' market context, an upgrading from management accounting to strategic management accounting is considered increasingly necessary in order to outline the opportunities and the threats and to face them in day-by-day activities. Under this point of view, two of the most significant innovation over the last few years are represented by Accounting for Strategic Positioning (ASP) and Strategic Management Accounting (SMA – Roslender, 1995). ASP's and SMA's prerogative is to integrate the control of external action (i.e. toward the market) and internal action (i.e. operational workflow) in order to support, more properly than by traditional management accounting, the pursuit of the strategic objectives (Roslender & Hart, 2002) in a multi-stakeholder perspective that takes back to the Balanced Scorecard (BSC) paradigm, and that seems extremely suitable with a structurally multi-stakeholder oriented organisation such as the PAs.

Operatively, BSC is a strategic management approach developed in the early 1990's by Robert Kaplan and David Norton (Kaplan & Norton, 1992, Kaplan & Norton, 1996a) in order to provide managers with a clear prescription about what to measure in order to 'balance' the financial perspective. It provides feedbacks about both the internal processes and external outcomes in order to continuously improve strategic performance and results (fig. 3).

Figure 3. A general model and conceptual framework of Balanced Scorecard (adapted from Kaplan & Norton, 1992)



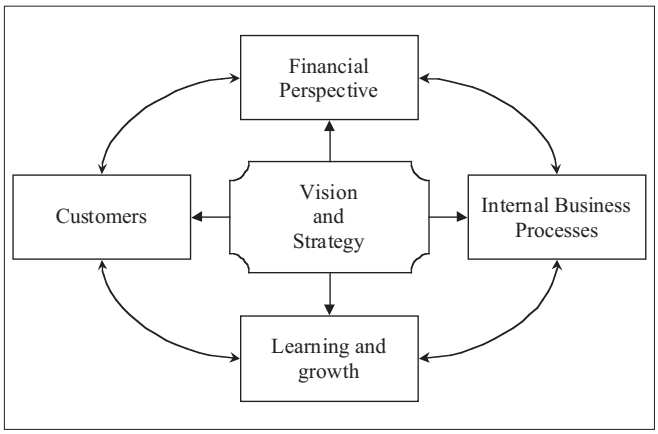
"The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation" (Kaplan & Norton, 1996b).
The diffusion of strategic control paradigms in managerial practices has been enormous even because BSC flexibility and conceptual simplicity favoured its application to diverse industries, organisational typologies and PMS objective. Thus, it is not surprising that several authors produced significant contributions even in terms of public sector management and strategic control (Kaplan, 1999, OGC, 2003, Niven, 2003, Van Ryzin, 2004, Gregg et al., 2004).
In fact, BSC has been broadly used in public sector with significant successes in terms of internal and external communication, decisional support and learning, and encouraged the assumption of responsibility among PA managers (Kaplan, 1998; Smith, 2000; Garrison & Noreen, 2004); though, but there is no evidence, in literature, of its application to e-government.
In conclusion, according to e-government diffusion process, to its strategic relevance, and to the lack of studies about SMA and BSC in e-government and citizen-to-P.A. (C2PA) service provision performance measurement, this work aims at providing further insight into e-government strategic control by suggesting a model of BSC PA managers may adopt in order to support their strategic decisions.

The peculiarities of PAs and their consequences on strategies and strategic control

BSC must be modelled around organisational characteristics in order to detect the key performances to keep under control (Kaplan & Norton, 1996a, Bertelè & Rangone, 2006). Public sector presents some characteristics that differentiate it from profit corporations and that make inadequate a slavish application of corporate management accounting system theories. The main elements can be drawn back to four features (Smith, 2000): (i) objectives mainly set by government and no penalties for failure in meeting cost-control targets; (ii) stable and captive "markets" and no competitors; (iii) government-oriented and public service culture instead of market-oriented and profit-oriented culture; (iv) short term returns planning versus very long-term investment planning.

All these features outline threats for PAs, as well as opportunities accomplishable even through a more strategic role of management accounting.
1) Objectives mainly set by government and no penalties for failure in meeting cost-control targets:
Threats: poor forecasting and strategic vision, having the PA managers a limited decisional autonomy dangerous in terms of innovative vocation as well; moreover, when objective setting competes to bodies so far away from the front-line, the risk of a suboptimal resource exploitation, being neglected significant operative synergies, is considerable; lastly, the absence of penalties might induce poor severity in cost control at a tactical level.
Opportunities: exploiting the actual degrees of freedom in order to increase short and long-term returns, and the citizen satisfaction in order to reinforce government commitment in a virtuous circle (fig. 4).

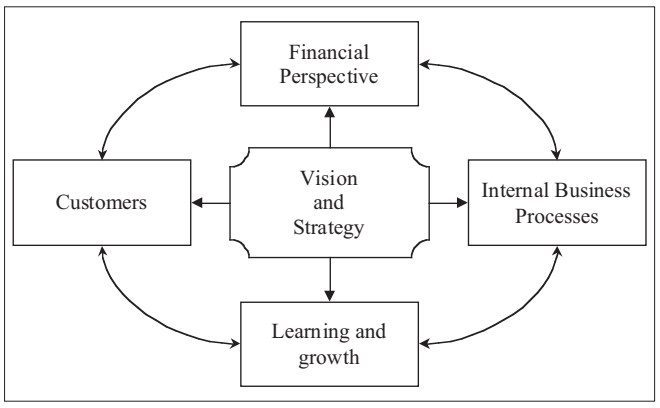
Figure 4. The opportunity of a virtuous circle in e-governance



Role of SMA and BSC: by measuring the radical innovation capability, SMA and BSC may incentive creative thinking; introducing activity-based managment to better identify and communicate to policy makers the value chain, to measure the profitability and to favour a business process management (BPM) perspective, with a re-engineering of activities aiming at identifying the non value-adding ones.
2) Stable and captive "markets" and no competitors:
Threats: poor external focus, that might lead to disregard citizen satisfaction, with consequent poor incentives and organisational commitment towards continuous improvement. Such a perspective may enable a vicious circle, in which a poor strategic and citizen-oriented perspective lead to unsatisfactory economic results, decreasing central government commitment, and thus investments determining a decrease in the exploitable resources (fig. 5). Moreover, the absence of

competitors might frustrate innovative thinking and continuous improvement.

Figure 5. The threat of a vicious circle in e-governance



Opportunities: the main opportunity is represented by the possibility of achieving, through the ICTs, a knowledge base about citizens in order to detect their needs and demands, and the economic sustainability of the initiatives. Moreover, since other PAs do not represent a competitor, it may be easier to treasure service providers' experiences and to adapt them to the specific context

Role of SMA and BSC: by measuring and analysing citizen and internal user satisfaction, strategic accounting may provide PA managers with interesting insight into market and organisational behaviour, with potential benefits in term of innovation rate of success.

3) Government-oriented and public service culture instead of market-oriented and profit-oriented culture:

Threats: as demonstrated by case histories, such a situation may induce cost drifts and poor profitability focus; furthermore it is not infrequent a suboptimal resource consumption because of non-requested service provision.

Opportunities: accordingly, the main opportunity is represented by the improvement of C2PA interactions, towards the offer of services expressly directed to specific segments, increasing both citizen satisfaction and efficiency.

Role of SMA and BSC: in such a context strategic accounting mat provide with a detailed market analysis, as well as with an organisational behaviour analysis in order to increase internal satisfaction. Activity-based management may enable the identification of the activities and costs of servicing in citizen profitability analysis (CPA) perspective.

4) Short term returns planning versus very long-term investment planning:

Threats: lack of commitment toward continuous improvement and poor attention towards organisational innovation, two key features in pursuing benefit sustainability over time; furthermore, PAs are structurally afflicted by the presence of dysfunctional behaviours after political discontinuities.

Opportunities: introducing systematic constraint anticipation in project management in order to limit adaptive tunings decrementing the results and the commitment; accomplishing a continuous organisational learning through a long-term perspective in budgetary control.

Role of SMA and BSC: the main role is to join long-term financial and investment analysis with day-by-day cost analysis and non-financial measurements in an activity-based and value-based perspective; at the same time, to monitor organisational evolutions to understand new cost structure, actual value-adding activities and the organisational behaviour, by integrating traditional accounting with internal auditing.

A Balanced Scorecard for e-government projects: structure and main KPI

According to the above-mentioned specificities and prerogatives of e-government BSC, the following section will introduce the suggested balanced scorecard, articulated in the classical four-category feature composed by (i) financial perspective, (ii) external perspective, (iii) internal processes, (iv) learning, continuous improvement and growth (Kaplan & Norton, 1992, Azzone, 2000, Garrison & Noreen, 2004).

In the following, such categories will be detailed in terms of suggested metrics and the expected benefits of their adoption.

1) Financial perspective

Suggested metrics: Percentage of the investments absorbed, Internal Rate Return (IRR), Net Present Value (NPV), Total expense in online C2PA service provision (with respect to traditional service provision)

Expected benefits: such measures may help monitoring improvements in online C2PA service provision in terms of progress reporting. It must be underlined the financial and economic value-driven perspective of the metrics: as suggested in literature (Roslender, 1995, Kaplan & Norton, 1992, Azzone, 2000), these techniques, compared to classical measures such as Return on Investment (ROI), allow a better long-term analysis, encompass and discount risks, and are more consistent with a multi-stakeholder perspective1. The overall analysis of economic impacts of e-government may provide managers with a global measure of the economic and financial results, which can be also used in motivational terms if interpreted in differential terms respect to traditional (i.e. offline) service provision.

2) External perspective

Suggested metrics: Number of citizen served through e-government, Citizen satisfaction inde-

xes, Number of claims.
Expected benefits: external perspective represents the explicit citizen-orientation in e-government projects. Operatively, while the number of citizen reached by service provision may be seen as a measure of effectiveness (since one of the target imposed by central government is to maximize diffusion), citizen satisfaction analysis and the relevance of claims outline the overall external success of e-government. An appropriate intelligence on customer satisfaction data, as well as suitable citizen relationship management (CRM) enabled by the internet (e.g. citizen profilation and navigation analysis) may highlight segments of unsatisfied citizens in order to understand which could be better performing actions on service portfolio scope.
3) Internal processes
Suggested metrics: Throughput time, Quality costs, Defect percentage, Internal satisfaction indexes, Percentage of off-line service provision when online provision is available as well.
Expected benefits: these measures aim at evaluating the improvements in online C2PA service provision in terms of internal effectiveness and efficiency. Internal satisfaction analysis is useful in order to highlight organisational inertias and legacies disturbing the diffusion of e-government. The use of activity-based techniques in calculating the values is consistent with the identification of process value-chain, thus of value-adding activities. The percentage of off-line service provision when online provision is available as well is a kind of Key Performance Indicator (KPI) aiming at monitoring the existence of internal inertias, hence unsatisfied or unprepared employees.
4) Learning, continuous improvement and growth
Suggested metrics: Training hours per employee, Number of new service provided, Percentage of turnover attributable to new services, Percentage of turnover attributable to re-use.
Expected benefits: being a technological breakthrough with pervasive impacts on the PAs in terms both of workflow and of organisational behaviour, it is very important to monitor whether the PA is able to increase its own knowledge about e-government in order to sustain continuous improvement and growth. On the other side, evaluating know-how storage and diffusion helps the long-term planning by highlighting criticalities. The analysis of possible synergies between e-government technological platform and other aspects of PA work may suggest potentially remarkable re-uses and technological modularisation with consequent decreases in time-to-market (TTM) and costs, and improvements in portfolio scope and citizen satisfaction.
It is not irrelevant the contribution of an evolutionary analysis of the above mentioned metrics, since it may provide managers with useful internal benchmarks able to support future objectives setting and budget allocation. Moreover, a remarkable motivational effect at all the levels of the organisation can be accomplished through consistent result sharing and incentive provision plans and policies.

Conclusions, limitations and further developments

The analysis of literature outlined the need for strategic management in PAs in general, and particularly in e-government, thus the need for strategic accounting in order to monitor external performances as well as internal efficiency and effectiveness. The introduction of BSC and the adoption of SMA principles may represent important steps in pursuing such goals. Nonetheless, every e-government project and every PA show characteristic features depending on targets, legacies, fields of activity and political and organisational variables, so, conceptually, each situation could require a different BSC. Thus, the suggested BSC should not be regarded as a "general purpose" strategic accounting tool to be slavishly adopted, but only as a conceptual model of reference to be properly declined to pursue specific goals, in order to support the search for a continuous balance between short and long-term, efficiency focus and radical innovation, cost control and citizen satisfaction, organisational advances and internal satisfaction. Hence, the next step in this research will be to traduce theory in practise, to decline these concepts into effective decisions. In fact, an ineffective e-government management could cause dissatisfying results, and that could decrease central governments' commitment towards digitalisation in the PAs. Technological innovation is an extraordinary opportunity, with amazing expected benefits for all the actors involved, such as citizens, PA professionals and employees and politicians, as well as an extremely challenging moment for an organisation: disattending the expectances and missing the targets would be bloody.

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[1] Nonetheless, ROI is an extremely important indicator in investment analysis, but its characteristics (e.g. poor long term orientation) make it more suitable with a traditional and tactical management accounting (Azzone, 2000)

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