THE PROCESS AND FATE OF HACKATHONS AGAINST CORRUPTION IN BRAZIL

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ABSTRACT

This paper aims to assist in understanding the dimensions of the anti-corruption activism that uses new digital media in Brazil. Here, however, the goal is to fill a gap in the understanding about the tangible results that programming marathons, with an anti-corruption purpose, have been achieving in recent years in that country, in order to understand whether the projects arising from the events have been effective or not and what are the justifications for the success or failure of proposals after the so-called hackathons. It was hypothesized that, from a pragmatic point of view, regarding the implementation and maintenance (continuity) of anti-corruption projects, hackathons have not achieved significant results. This study confirms this hypothesis and this article discusses the results obtained.

KEYWORDS

Hackathons, Corruption, Brazil, Activism, Digital Media

1. INTRODUCTION

Are programming marathons an efficient way to help in the fight against corruption? Related to this, a study by Freitas et al. [1] (2018) of nine such actions - not necessarily linked to the fight against corruption - organized by Brazilian federal government entities, pointed out that 66% of the solutions derived from this type of event either no longer exist or were not up-dated, presenting only data articulated at the time of the marathon. Faria [2] - director of Brazil Hacker Lab at the Chamber of Federal Deputies, in turn, indicates that "most applications created during "hacker marathons" promoted by the Chamber of Deputies in 2013 and 2014 have remained in their primary versions, some of which are mere prototypes. Many developer groups from hacker marathons are incapable of or not interested in carrying on developing and maintaining such projects. Further in-depth studies will be able to show a more detailed mapping of motivations, incentives and difficulties on the behalf of interested parties in the development of projects on transparency of actions in public administration".

However, the doubt remains; does this also happen with hackathons aimed at fighting corruption, a problem so old and so present in Brazilian society? This is what, to a certain extent, this chapter addresses to verify. Indeed, while programming marathons continue to happen and to be articulated by public entities in Brazil and much publicity has been given to the actions, very little seems to be questioned about their real results.

In this context, it is important to conduct such research, since it can provide information, from the participants' point of view, that help not only in the organization of new hackathons, whatever their theme, better aimed at achieving tangible goals; this study may also provide data on: which proposals for anti-corruption technologies have been suggested at these events; which aspects of

corruption are being addressed by projects in programming marathons; why citizens (participants in the events) cannot sustain their ideas after the events (which helps to think about the particularities and difficulties of actions to combat corruption that are proposed from the bottom up) and what it takes to change this scenario, among other information. Finally, I believe that this study can provide a framework of insights that can direct new research, especially those that work with the relationship between digital media and anti-corruption.

The chapter is structured as follows: The next section aims at understanding what hackathons are, from a brief historical-conceptual survey; to ponder on which reasons have led to the carrying out of anti-corruption hackathons in Brazil and in the world. Then, after the information about the research method, the chapter presents the programming marathons linked to the fight against corruption held in this country since the year 2000, as well as to list the awarded solutions in the events. Next, the result of a survey carried out with the participants of these events is presented, through which a better understanding about the scenario for the implementation of ideas after the programming marathons was sought.

2. HACKATHONS: WHAT ARE THEY IN THE FIGHT AGAINST CORRUPTION?

Marathons are events that consider the application of the greatest effort, in a determined period/distance, usually long and uninterrupted, in order to reach a certain goal. Taking advantage of the lexicon and its essence, programming marathons, or hackathons [3], have been held since 1999. In the last 20 years, the term has been consolidated and refers to the performance of actions all over the world with the objective of finding solutions and proposing innovations to the most varied issues. In general, acting in a collaborative way (even though competition fosters the work), programmers (and people with other skills) use their knowledge of ICT to present projects at the end of the activity.

Delimiting the programming marathons concept and arriving at a total understanding of them is a somewhat difficult process. For Briscoe and Mulligan [4], this is due to the fact that there are always new actions emerging that call themselves of this genre. Experimentation and creativity are the watchwords in hackathons, requiring even more willingness from participants in events that last from 24 hours to seven consecutive days - some of them even divided into phases, such as project, development, and presentation. Usually directed at solving a challenge, they are, however, made up of a relaxed environment, which makes hackathoners more comfortable to conceive innovative ideas (Briscoe & Mulligan, 2014).

The demands that stimulate hackathons are as diverse as possible, including those related to a variety of social problems (D'Ignazio et al., 2016) [5]. When sponsored or held by institutions, hackathons also appear as a way to seek solutions with external partners. Ferreira and Farias (2018) [6], for example, identified (from 2012 to 2016) 47 hackathons held by the Brazilian public service in order to juxtapose data of public interest on digital platforms that were accessible to the population. Thus, for the authors, hackathons are actions that can also fit into the perspective of citizen-sourcing for innovation - the opening for the citizen to interact with the government to design solutions/innovations for social-public problems.

Acting together, public administration and citizens would tend to arrive at solutions more directly linked to the reality of those who experience a problem. It is then inferred that, when citizen-sourcing is made effective by means of a hackathon, interactions, brainstorming, network building, awareness raising, citizen involvement with the government, among many other opportunities that do not only reach the generation of innovations, would be allowed. Thus, events would have not only tangible but also intangible results, such as those mentioned above. For Angarita and Nolte [7], tangible results may include technical artifacts (such as new

prototypes, correction of faults and defects in software, development/improvement of features/functions in various products, among others) and non-technical artifacts (publications, improvement of documents/manuals/resolutions, among others).

But, despite the advantages, the set of problems of hackathons is sometimes big; criticisms are made of their dynamics. Nam [8], speaking specifically about the public sector, points out that some initiatives are really only intended to make the organizer look "cool", following a trend or taking advantage of an opportunity that could give him public visibility. More broadly, D'Ignazio et al. (2016) list, in a literature review, the various shortcomings of hackathons, when, for example: they do not pay attention to the correct selection of problems and presentation of their scope; the heterogeneity and even unpreparedness of those who participate in the action; a conjectural exploitation of labor, at no cost (sometimes offering an award that does not match the effort employed); the lack of impact (of the result) of the hackathon; the risk of proposing a reductionist solution to a broad problem; the creation of fragile and superficial technologies - much due to the short time for the development of a more grounded idea; among others.

Perhaps because of all these problems, as I pointed out in the introduction, the number of projects suggested in hackathons (whatever their theme is) that come to life after the events, in general, is not high. However, as Briscoe and Mulligan (2014, p.11) remind us: "the success at the event is not realized until later, given that it is essentially a prototyping exercise technically speaking, but it is similarly a prototyping exercise of new working and personal relationships/collaborations for the participants". This means that the purpose – in our case, the anti-corruption fight – should not end in (or with) the event, but it must have a follow up on it so that, in fact, the ideas suggested in the hackathons are adrift.

Among the social and contemporary problems for which hackathons have been used is corruption, a problem that, when imposed on the public administration, can represent, for example, various limitations on access to public goods and services, due to deviations of various shades that are made in favor of agents who articulate such illegality.

Various nations have undertaken programming marathons to try to generate innovations that help in the fight against corruption, bringing together the civil society (represented or not by NGOs) to generate awareness about the evils of such a problem. In these events, placed alongside public and private institutions, citizens can engage in propositional dialogues in precious partnership situations. This is what seems to have happened in several hackathons around the globe, as reported by the organizers of the actions. One of the most recent, held in July 2022 in South Africa, was HackCorruption (an event funded by the US State Department). It brought together 100 participants from Southern and Eastern African countries in a hybrid format (virtual and face-to-face). Five promising ideas [9] for fighting corruption were the winners and may receive up to 10,000 dollars and mentoring to develop the projects [10].

International Transparency has also been an important articulator in this sense, having been in charge of events, for example, in Africa (such as those in Kenya in 2012 and Rwanda in 2013) [11] and in Europe (like the one in Hungary in 2013) [12]. In Russia, the institution also funded the organization of 'Hack Against Corruption', an initiative that was part of a set of other civic hackathons that have been held in the country since 2011, actions that have strengthened a previously fragile activist community; this is due to the bridge with an already well-established community of information technology developers [13].

The UN, through the United Nations Development Program (UNDP), has also supported the holding of hackathons against corruption. One example was the Hack.Corruption [14], in 2016, in Moldova, an event that awarded, as a highlight, the Open Money project [15]. Finally, among

many others, from Canada [16] to Greece [17], and throughout all continents, events like the ones analyzed here, prove that: 1) there is a global concern about corruption; 2) hackathons appear as another important tool for generating ideas to combat corrupt practices.

In Brazil, corruption, with its various facets, is present at various levels of the government [18]. Although recognized, it seems to be difficult to control corruption, given, among other reasons, the sophistication/complexity of many such actions. Due to this context, several traditional anti-corruption strategies [19] have been undertaken in the country for a long time, but the problem persists. Thus, hackathons present themselves as another tactic to try to mitigate corruption through the creation of technological solutions (websites, applications, games). After all, ICTs have been increasingly assuming an important role in this purpose all over the world.

According to Kukutschka's literature review [20], studies show that, if properly used, technologies can bring benefits to the fight against corruption by being useful for: government transparency and accountability; reducing bureaucracy; easier access to citizens to enforce their rights; monitoring that leads to the detection of deviations in public administration; among many other possibilities.

However, much is said about the potential of ICTs in such a fight, because one also recognizes the complex set of challenges and limitations (technological, but also social, cultural, political, financial, among others) to be faced so that the technologies, in fact, come to be effective as protagonists and have real effect in the fight against corruption [21]. In this context, it is worth noting the registers of the studies that point out that the functionalities and impact of ICTs are less likely to be understood and determined by their technical properties than by situational factors (Zinnbauer, 2012) [22], demonstrating that caution should be exercised by people who blindly believe that technologies will solve the problem of corruption.

Among these people are, perhaps, those who continue to hold hackathons repeating the edges of this type of event. One of the risks of programming marathons undertaken without rigorous planning (contemplating a whole set of factors) is to sell the idea that the solutions to the challenge they present are merely technological. Such reductionism can generate unrealistic expectations (D'Ignazio et al., 2016) and thus increase the unsustainability of the ICTs proposed in the activity. Would this be the case with anti-corruption hackathons?

This question arises because, even though it is not possible here to make a broader, critical and grounded reflection of the concepts of corruption, it is important to say that there are very dense issues tied to the complexity of this type of action in Brazil. Thus, if these notions (about corruption and the problems of hackathons) escape the planning of the organizers of programming marathons, it can generate events that propose a solution at any cost and, apparently, represent a certain waste of time.

However, it is not difficult to find mass media records that clearly attest that: "hackathons (anti-corruption, even) will provide the solution to the problem!" To a certain extent, news like these stroke a desire in the Brazilian society, because the search for a solution to political corruption "come what may" seems to be gaining strength, a result, perhaps (and also), of a tired public opinion, battered daily by corruption scandals that have been part of the media agenda in Brazil for many years.

The appeal of public opinion, to some extent, has been answered in the mobilization and initiative of various entities that, together or not, have been playing in Brazil, the so-called agenda against corruption - a set of attacks that occurs, more incisively, at least since the 2000s in the country

[23]. The problem is that this amalgam of constraints on the political system has not always brought positive responses.

In general, one sees the constant criminalization of the acts and actors involved in corruption scandals, but often these accusations - and even the opening of proceedings - do not generate, for various reasons, effective punishment of the corrupt in Brazil. This is just one of the vectors that seem to contribute to the intensification of the "process of delegitimization of politics and a naturalization of corruption in the dimension of the Brazilian State" (Filgueiras & Avritzer, 2013, p.229) [24], which numbs and generates a cyclical process that may be leading to "social apathy" and, consequently, even a tolerance with corruption in Brazil (Filgueiras, 2008) [25].

Then under the perspective of what was heard about the results of the hackathons, those who propose to act as protagonists in combating corruption in Brazil began to believe that the programming marathons could also sprout ideas to combat corruption. There would be yet another justification: it is not difficult to find studies showing that greater efficiency in public administration can occur when there is social involvement in the public monitoring of state dynamics (Filgueiras & Avritzer, 2013). Hackathons, thus, seem to try to bring society, especially young programmers, to this control process, demonstrating that it is still possible to overcome corruption.

3. RESEARCH METHOD

This paper, as the reader will see in the next few pages, takes an empirical and highly exploratory approach. I divided my research into three distinct approaches. The first, which aimed to identify the hackathons held in Brazil up to the year 2019 (since we wrote this paper in 2020), was based on research that took as reference the experience of Guizardi et al. (2018) [26]: web survey by Google search engine identifying the occurrence, in Brazil, of hackathons directly themed on corruption. The search considered the temporality 2000-2019. The survey, carried out twice, took place in February and March 2020, using the associated keywords "hackathon" and "corruption." The customized interval from January 1 to December 31 was considered for each year surveyed.

Following the first survey, I proceeded to verify the proposals presented at each hackathon. Given the difficulty in precisely relating the total number of solutions proposed in the hackathons, as well as the details of all of them, I chose here to highlight only the winners/awarded in each one. This preference is due to the fact that the winners would have more appeal, arguments, and conditions to continue the development of the actions after the events in which they were created. Thus, a survey of the awarded actions that are still available for access/download was also established, and the verification of which ones' presented updated data and/or were effectively in operation. We did this by accessing the websites of the events; downloading and reading the reports of the hackathons (when these documents were available); and searching the web for news about the events, published on reliable websites - such as those of major media outlets in Brazil. This was hard work, because we did not always find complete information in these three sources.

Our third and last data gathering front was a survey conducted with participants of the hackathons that had awarded projects. The first step in gathering information consisted of sending e-mails to each winning team in the hackathons analyzed. A member[1] of each team was invited. In order to assemble a general and non-oriented picture, the following open question was established: in case your team's proposal, presented at the hackathon against corruption in which you participated, is not available or does not present updated data, could you explain us the causes?

From this data, another research instrument was developed; a broader questionnaire, in order to test the previous answers. Once again, a representative of each team was invited to respond to the survey. Thus, at the end of being two months available online (from December 2020 to February 2021), the questionnaire received responses from 39 of the 58 teams invited, indicating a sample of 67% of the universe under analysis. The instrument contained 13 closed questions[1] and only one open question.

4. ANTI-CORRUPTION HACKATHONS HELD IN BRAZIL

The following table presents the results of the survey: I found 18 hackathons directly themed on the fight against corruption in Brazil. It is worth making some quick highlights: we could say that, as can be seen, the State Public Ministries (MPE) may have been protagonists in the organization of the listed hackathons, being the main articulators of eight events. By the way, the Paraíba State MPE, takes the position of pioneer in Brazil, articulating an action that is still highly praised in the country and abroad. Not without reason, then, other Ministries have followed the same path. The Amapá State MPE, for example, in 2018, had almost identical regulations to the reference one and, in 2019, the one of Rio de Janeiro decided to partner with the Paraíba ones, unifying the actions.

Table 1. Anti-corruption Hackathons held in Brazil

YEAR	EVENT	MAIN ORGANIZERS	OBJETIVES
2012	IACC-Hackathon	International Transparency and The Brazilian Office of the Comptroller General (CGU)	"Creating projects that use technology to fight corruption." Themes: "Facilitating access to information", "Tax expenditures", "Making data fun"
2016	Anti-Corruption Hackathon Applications Competition Participation	Ministry of Justice (MJ) - National Strategy to Fight Corruption and Money Laundering (ENCCLA)	"Strengthen the fight against corruption, through the involvement of civil society in the execution and monitoring of public policies [...] present information technology solutions to promote transparency and social control in the transfer of federal resources"
	Hackathon TCE-SP	São Paulo State Audit Court (TCE-SP)	"Development of digital game for children [...] that encourages the fight against corruption"
	HackathonUSP – e-governance	São Paulo State University (USP)	Create "solutions for ethics in research, transparency and efficiency in public management"; Award for solutions in "Ethics in Research; Efficiency and Debureaucratization; and Transparency and Fighting Corruption"
	1st Anti-corruption Hackfest	Paraíba Public Ministry (MPPB); The Federal University of Campina Grande (UFCG) and Paraíba Communication Network	"Application development against misuse of public money"
	2nd Anti-corruption Hackfest	MPPB; CGU; Comptroller General of João Pessoa and Federal University of Paraíba (UFPB)	"Building anti-corruption software"
2017	3rd Anti-corruption Hackfest	MPPB; TCE-PB; and LabAnalytics -UFCG	"Development of technological solutions, involve society in fighting corruption".
	1st Hack in Sampa	São Paulo City Council	Create solutions to "prevent corruption and

		(CMSP); Police Neto Councilman; Incubator Cidade Viva	fight against the waste of public resources"
	Hackathon: A future of good ideas against corruption and Child Pornography	National Association of Federal Police Delegates (ADPF) and São Paulo Industries Federation (Fiesp)	Look for "technological solutions that can help [...] in the fight against" corruption and Child Pornography
2018	2nd Hack in Sampa	São Paulo City Council (CMSP); Police Neto Councilman; Incubator Cidade Viva	Create solutions to "prevent corruption and fight against the waste of public resources"''
	Amapá HackFest Anti-corruption	Amapá Public Ministry (MPAP)	"Building projects using IT to increase social participation in politics, social control, improving public services, and fighting corruption"; "Fostering civic spirit and exploring the use of different forms of mobilization in promoting a more participative society"
	HackFest-PB	MPPB; CGU; Union Court offAuditors (TCU); The Mayor and City Council of João Pessoa; National Council of the Public Prosecutor's Office; and UFCG	
2019	HackFest Rio	MPRJ; MPPB TCU; CGU; TCE-RJ; and Civil Police Secretariat (Rio de Janeiro)	"Fostering civic spirit, facing corruption, and the use of technology in promoting a more participatory society"
	HackRibeirão	Nexos Public Management Economics, Management and Accoutancy College Ribeirão Preto (FEA-RP/USP)	"Search for solutions (Platform, System, Applications, etc), for real problems", according to the theme: "Solutions for the fight against corruption"
	Hackfest MPRN	Rio Grande do Norte Public Ministry (MPRN) and Metroplole Digital Institute(IMD)	Develop "information technology applications, which will be made available to the population and to the inspection agencies, so that they can be used as tools to promote citizenship, to enforce public policies, and to fight corruption"
	HackFest-RS	Rio Grande do Sul Public Ministry (MPRS)	"Using technology for transparency, anti-corruption and efficiency in the public sector"
	Hack-MS	Mato Grosso do Sul State Comptroller General	"Development of technological tools that [...] can foster Transparency, Social Control and Fighting Corruption"
	Hackathon TCE Ceará (CE)	TCE-CE	"To make a platform or part of one available to enable society's collaboration in fighting corruption"

Source: Survey carried out by the author from various sites searched by Google

The role of these and other public institutions in the organization of hackathons and, especially, the continuity of some of them, are also worth highlighting. Some events were continued, but with themes other than corruption. This is the case, for example, of the action promoted by Fiesp which, in 2017, was already in its sixth edition - and, currently, the hackathons continue to be held by the institution.

Still in the state of São Paulo, there is Hack In Sampa, an event promoted by the City Council, which has already reached its third edition. In Table 1 only the first two were listed, as they dealt directly with corruption, while the most recent highlighted the public bus system in the state

capital. It is also interesting to say that some events have a certain peculiarity. The event held by the Ministry of Justice was well named "Public Contest"; it started with an eliminatory round where three proposals were chosen for their potential to fight corruption. Then, the selected ones would proceed to a face-to-face phase with activities over three days. In the last stage, the winner would have up to 40 days to implement the action.

The TCE-SP event, in turn, was also called Game Jam, even though it is still considered a hackathon. The characteristic of the first term is that of a game developers specific meeting that, within a short period of time, use all their creativity and elaborate a digital game. If I could finally speak, of a general typology of anti-corruption hackathons held in Brazil, I would say that, in general, they have the control bodies as the main organizers, strong involvement of educational institutions (universities) as partners and drivers of the young people presence, participation of companies as sponsors and support of governments in the making and dissemination.

In the research, an exponential increase in the number of results for the terms "hackathon"/"corruption" associated, was observed starting in 2015. It's possible to establish any relation of this with the intensification of the Lava-Jato operation, of the Federal Police actions, which, starting in the second half of 2014, brought to light several cases of corruption in Brazil [27]; it is possible to mention any of the anti-corruption package, developed by then president Dilma Rousseff and delivered to the National Congress in 2015; finally, in the same year, the project "ten measures against corruption", of the Federal Prosecutor's Office, also gained notoriety. Having made these quick considerations - given the spatial limitations of a chapter such as this - it is valid to say that, following the first survey, we proceeded to verify the submitted proposals and the winners in each hackathon.

5. AWARDED PROJECTS

The research I carried out, found 58 winning projects in hackathons that aimed to fight corruption. Most of these ideas (as can be seen in appendix 1 of this chapter) had as their main focus the oversight of government investments in procurement and bidding, in general, giving citizens access to this information, allowing them to follow up and even ask for explanations if they found discrepancies in amounts and items purchased. Such trends in projects with this purpose demonstrates one of the most recurrent forms of corruption in the Brazilian public administration: the benefiting of contractors in contracts and the bribing of public agents who participate in these actions.

The second most recurrent type of project (be it websites, applications or even games) among the winners of hackathons in Brazil are those aimed at monitoring the salaries, benefits and office expenses of politicians and government employees in this country. The winning ideas aimed, in general and in my view, to curb the use of public funds, used without bidding, in overpriced or unnecessary purchases for the work of deputies, councilmen, senators, and other Brazilian politicians, as well as trying to restrict a recurring practice called 'rachadinha' (splitting your earnings) in Brazil: when an employee passes on part of his or her own salary to the politician who hired him or her.

Among the winners, projects focused on health - an increasingly precarious area in Brazil, even though there is a referenced Unified Health System in the country; the creation of various channels for reporting corruption; awareness games for society; and mechanisms for monitoring the actions of politicians in their respective houses of parliament (bills created/proposed; participation in hearings and votes; what was the politician's vote in each parliamentary session; speeches; among other information), are also noteworthy. However, it can be observed that, of the total number of awarded projects, 67% are no longer available or have not even effectively

become a product [28] accessible to society. Nevertheless, to this percentage another 17 proposals, which are not updated, must be added. Thus, only 3.5% of the total number of proposals exist and are up to date. The list of proposals awarded in each event can be seen in next table.

Table 2. Solutions presented compared to those that are still available and in operation

EVENT	AWARDED	AVAILABLE	UPDATED
IACC-Hackathon	1	0	0
Anti-corruption Participation	3	1	0
Hackathon TCE-SP	3	0	0
HackathonUSP	3	2	0
1st Anti-corruption Hackfest	1	1	0
2nd Anti-corruption Hackfest	1	0	0
3rd Anti-corruption Hackfest	10	5	0
1° Hack in Sampa	3	1	1
Anti-corruption and Child Pornography	2	0	0
2° Hack in Sampa	3	0	0
Amapá HackFest	3	1	0
HackFest-PB	7	5	1
HackFest Rio	3	1	0
HackRibeirão	2	0	0
Hackfest MPRN	3	0	0
HackFest-RS	4	1	0
Hack-MS	3	0	0
Hackathon TCE-CE	3	1	0
TOTAL	**58**	**19**	**2**

Source: Survey carried out by the author

However, some information is relevant and I need to relativize: I wrote this article in the midst of the Covid-19 pandemic which brought several limitations to the life routines in Brazil and, consequently, to the organizers and participants of hackathons - especially those of the 2019 events. I would also add that, to the detriment of highlighting the fact that many solutions have not become products or no longer exist, I point out that most marathons do not place the survival of the projects, or even their effectiveness, as a rule. In other words, what is expected at the end of the marathons is the elaboration of a project, not a product. However, some events demand the availability of the project data (in a public repository) and the assignment of the rights to use the idea by others (through the use of free software licenses), in order that, *a posteriori*, the projects can be developed. Therefore, the question is: when and by whom will they be developed? [29] However, instead of conjecturing about the future, I decided to ask the participants [30] about the reasons for such low success of the proposals' continuity.

6. WHY DIDN'T THE PROJECTS BECOME REALITY?

As I mentioned before, a member [31] of each team was invited, and of the 58 messages sent, 32 were answered. In order to assemble a general and non-oriented picture, the following open question was established: in case your team's proposal, presented at the hackathon against corruption in which you participated, is not available or does not present updated data, could you explain us the causes? The answers evidenced several perspectives. In order to find a stabilization, determining lexicons that could group them, I resorted to the notions of content analysis [32] to classify them according to syntactic-semantic recurrences. Thus, I undertook Table 3 with the main justifications for the projects not having continued.

Table 3: First survey of awarded actions failure causes in anti-corruption hackathons

Justifications	Recurrence	%
Lack of time of the teams/ members' other projects	13	22,8%
Lack of financial support for the project	12	21,1%
Lack of logistical and infrastructural support for the project	10	17,5%
Lack of motivation of team members	5	8,8%
Lack of interest from government/organizers	5	8,8%
Dysfunctions of the government/organizer bureaucracy	4	7,0%
Lack of adequate technology from government/organizers	3	5,3%
Projects with high work demand	2	3,5%
Lack of understanding between organizers and teams	2	3,5%
Proposal's inadequacies to the market	1	1,8%
Total	57	100%

Source: Elaborated by the author

From this data, another research instrument was developed; a broader questionnaire, in order to test the previous answers. I obtained very relevant information and, here, I choose to select and present the most relevant data. In fact, I highlight the data that help us to think about the main challenges (and opportunities as well) in relation to hackathons and their sustainability and effectiveness in creating anti-corruption tools. Assuming that the awarded proposals were designed to, after the event, be put into operation and managed by someone else, I raised a question: when asked who should assume such responsibility, the respondents said that their ideas were primarily articulated to be put into effect and managed exclusively by the proposing teams themselves (38%). However, 23% indicated that the idealizing teams should only have such a burden if it were shared with the organizers and partners of the programming marathons. For the respondents, only 8% of the proposals were articulated to be conducted exclusively by those promoting the events, and another 18% said that such demand should be carried out in partnership of the hackathons' organizers with governments and/or public control entities.

Such data, to a certain extent, would justify the lack of institutions' protagonism in the continuation of projects proposed at hackathons, given that more than 60% of the ideas would require the direct involvement of the proposing teams. But, considering this, I also questioned why the solutions proposed in hackathons against corruption do not become effective and/or have no continuity. For the respondents, in a question that accepted multiple answers, the main problem is the lack of financial support (77%); followed by lack of interest from the government (67%); lack of logistic/infrastructural support (56%); lack of teams' time (51%); government bureaucracy (49%); and lack of motivation from the teams (44%) [33].

Since the lack of financial support still seems to be one of the main problems, I asked for what purpose the investments would be needed. "Payment of team members" was the most recurrent answer (85% of the total respondents), almost the double of the next option, "purchase/cost of equipment" (41%). Cost of software licenses (36%) and cost of resource licenses (25.5%) were other items mentioned.

Nevertheless, at the end I asked another question: Without financial support, what would be the main reason to continue the project against corruption? To this question, which is not mandatory, only 24 representatives answered. Considering 38.5% abstention to the question - which could reveal the monetary contribution as superior to any other support - for 25.5% of the respondents what is missing is time for the team members to organize their personal, professional and

academic demands with a social intervention project. For 23% of the respondents, the main gap to be filled is the lack of support from the government and institutions involved in fighting corruption.

Regarding these two questions, it is important to ratify that, throughout the survey, I questioned the lack of logistical and infrastructural support for the project after the hackathon. I asked the respondents what they thought was necessary to solve this problem. "An institution to lead the proposal" was the most marked option (56.5%), followed by "legal perspectives guidance on the proposal" (54%), then further "teams' technical support" (43.5%) and "tools hosting service" (41%). In addition, I proposed to verify, regarding the teams' lack of time, how this could be solved. The three most recurrent answers were: pay team members (74.5%), better social recognition - such as prizes and publicizing of winning projects (43.5%), and an altruistic/activist motivation of team members (28%).

In short, in my opinion, hackathoners indicate that, if the organizers of the events really intend the hackathons to make the ideas they generate effective, they must provide the minimum conditions for this to occur. This can apparently be done by: better planning the events; informing, in the regulations, about the costs with the propositions after the events; demanding effective involvement from the participants; consolidating partnerships; assuming their share, namely, mainly the management of information that is only up to the control organs, or the taking of actions that are not in society's hands, after the events; and offering the resources, which are for the ideas to surface, to be maintained, and to generate society's engagement for the control that is expected - besides other implements. These are all challenges and opportunities at hand for hackathons organizers. But, without placing the possible blame (for the projects not coming to fruition and the programming marathons not delivering tangible results) solely on the organizers, it is necessary to reflect on what influences the participants to continue the projects: a visible motivation associated with money on the part of the marathon runners, as we have seen.

However, most hackathoners, as people who seek their own insertion in the job market, obviously have their professional priorities and, because of this, would place the fight against corruption, although a commitment of a kind of social responsibility, as a demand that is not a priority - to the detriment of other obligations they have, whether personal or, how we talk about young hackathon participants, especially academic ones. But it was observed that if they were paid salaries to act in the fight against corruption, they would put this activity as one of their priorities, and would then find time for it, since this activity would become part of their professional commitments.

Therefore, one opportunity would be for the control agencies - and even the governments - to hire these young people. However, wouldn't we be exchanging social control, an important mechanism in the fight against deviations in public administration, for a relationship that is based on exchanging labor for money at the end of the month? To demand an effective citizen commitment from the participants of the events discussed here, it would not be absurd, but rather a condition, to ensure that the hackathons do not become an end in themselves. If solutions are needed to combat corruption and if citizens are being invited to participate in this process, perhaps it is not just because they have better ideas than the control bodies, but because they need to be involved in this demand - given the importance of social control. In this context, real engagement is necessary, and this behavior is what we would call anti-corruption activism, not just participation in a hackathon.

7. CONCLUSIONS

Given the information gathered, I can ratify the hypothesis previously raised that, from the tangible results point of view, the anti-corruption hackathons held in Brazil have not had significant effects. However, this seems to occur due to several factors. In future studies, it would also be worthwhile to carry out a survey with the marathons programming promoters to find out what justifications they present for the failure of the actions.

However, I think that, despite the good public image they bring to themselves (because the marathons seem to give good spontaneous media) and other advantages of a possible citizen-sourcing strategy, it is necessary for the organizers to evaluate the practical results of their actions and understand the root of the exposed problem to deliberate on the continuity (or not) of each of the hackathons. Therefore, they do not run the risk of continuing with the articulation of actions that sometimes seem to misuse public money, have specific participation that seems to be not very heterogeneous, and bring little effect to the awareness of a wider public (outside the event) and, mainly, to the effective fight against corruption.

In this context, it is understood that the functionalities and impact of anti-corruption ICTs (developed/proposed from hackathons in Brazil) seem to be less likely to be predetermined by their own technological properties than by contextual and circumstantial factors (as studies by other researchers and in other contexts have already signaled), such as those pointed out by the programming marathons participants. However, without placing the blame solely on the organizers, I also indicate, as future work, an analysis to verify if and how the nuances of activism (the behavior of the truly engaged citizen) could be useful for proposals in hackathons (anti-corruption), despite the lack of involvement and investment from organizers/sponsors, to be effective and have continuity.

Bearing in mind what was covered in this study so far, it is also possible to add as a limitation of some programming marathons, their conduction in a vertical way, from top to bottom, in events that intend to encourage citizen participation in the fight against corruption. Yet they are not offered continuity, leaving them, once again, waiting for the opportunity to participate in the audition of this public issue. In this way, just as it seems to be salutary for technologies to be born and maintained from the bottom up, without governmental or private interference that can be a hindrance more than a help, why not also think about anti-corruption hackathons carried out from the social bases? Invariably, this depends on social engagement. I believe that, motivated by the perspective of activism, this participation of civil society could make technologies to fight corruption flourish from the grassroots.

Furthermore, regardless of who organizes new anti-corruption hackathons, there remains a question that can provoke thought: why, instead of continuing to create new things, not improve those that already exist and need to be corrected? This could be a way, within the scope of hackathons, to make launched - even awarded - ideas come to life and get out of the idle situation in which they find themselves. Evidently, to do so, regardless of this or that orientation, it is necessary to plan, focus and, above all, a enduring work, which considers the maintenance of initiatives to control/fight corruption upon initiatives such as those reported here in order to, finally, tangible results living up to this name can be viewed.

Given the research context, it is acknowledged that a limitation of this study was to focus on whether or not the projects were carried out after the hackathons, focusing only on tangible results. As the theoretical foundation presented here pointed out, programming marathons also provide intangible results though. Thus, future research on events focused on anti-corruption technologies could verify what other consequences these meetings generate. In fact, a greater

drill-down of each event – in a new stage of research –, separating them by type of organizers or sponsor (universities, control bodies, public institutions), could allow different objectives and results to be reached. Finally, for future work, it is pointed out the possibility of knowing better technological initiatives that were born from anti-corruption hackathons and had some time to survive, how they were implemented and why they perished.

It is understood that this path may signal some strategies for future hackathon participants and for civil society actors who, from the bottom up, intend to create, manage and implement anti-corruption technologies in Brazil. After all, many situational limitations were highlighted here and, added to those that are not necessarily related to programming marathons, they can serve as a warning for a broader understanding of the scenario faced by those who propose, outside the regulatory bodies, to propose and lead innovations for the fight against corruption.

By other means, however, it is necessary to think about more and open discussion channels about this absence of non-conformity, this "apathy" according to Filgueiras (2008), which seems to have to do not only with the hackathoners, but also with Brazilian society, in the face of corruption. Under this perspective, even understanding that it is difficult to deal with corruption, it is reinforced that it is necessary, in the first place, to understand it and not reduce it to partial impressions, as well as not abbreviate the possible solutions only to technological answers, to finally manage to mitigate it in Brazil.

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[3] Sum of marathon with the verb to hack. Hackathons are also known as HackDays, HackFests, among other names.

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[9] Some of them were: "a streamlined data standard to flag price anomalies in the tendering process that incorporates citizens in monitoring bids"; and a "project to automate tender processes, publicizing bid amounts to curb corruption during bid selection and assessing the reputation of bidders".

[10] Check more in: https://www.hackcorruption.org/

[11] Check more in: https://www.transparency.org/en/news/slideshow-inside-our-hackathon-in-rwanda

[12] Check more in: https://blog.transparency.org/2013/01/07/young-hungarians-waking-up-to-corruption/index.html

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[14] Check more in: https://www.undp.org/moldova/press-releases/hackcorruption-%E2%80%93-winners-first-anticorruption-hackathon-moldova-were-awarded

[15] "A platform that shows who are the end beneficiaries of public tenders by using open data to connect data on public procurement and founders/directors of businesses".

[16] Like the "Hackons le corruption", in 2012. Check in: https://www.ledevoir.com/societe/actualites-en-societe/363757/hackathon-contre-la-corruption

[17] Like the "Public Integrity Hackathon" 2017 – "aimed to promote the development of ideas and innovative solutions in order for citizens to actively participate in the prevention of corruption in Greece". Check in: https://www.oecd.org/gov/ethics/public-integrity-hackathon.htm

[18] To learn more about the fight against corruption in Brazil, see also Fernanda Odilla's chapter in this volume.

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[28] I understand as a product any solution that aims to combat corruption and materializes it: application, website, game, etc. I do not consider in this notion, then, the projects, even if finalized, but only available on source code hosting platforms, or prototypes with minimal finishing.

[29] A kind of simulacrum of a solution is generated which is for all, revealing itself, in truth, to be for nobody - because it exempts obligations and also the effective results: for nothing and nobody.

[30] Survey conducted only with the hackathoners, since there was, in general, difficulty in obtaining information from the organizers of the events. Some were very helpful, while others only responded after a request was sent via the institutions' Ombudsman. Even so, many reports were partial and did not meet the demands related to the doubt about why the projects had no continuity after the events.

[31] I will not make a detailed description of the public here, however, as can be imagined, it is formed mainly by young people, most of them with training in areas related to new technologies. However, the participation of older government employees (some even from control agencies) is also noticeable.

[32] Bauer, M. (2008). Classical Content Analysis: a Review. In; Bauer, M. & Gaskell, G.(edi.). Qualitative Researching with text, image and sound. London: Sage Publications.

[33] Such data contradicts the information obtained preliminarily, even though the main variables are the same - in a different order.

AUTHOR

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APPENDIX 1

Award-winning proposals in anti-corruption hackathons in Brazil from 2000 to 2019

EVENT	AWARDED	PROPOSAL PURPOSE	STATUS
IACC-Hackathon	Aybolit	Online platform to list and display on a map comments from healthcare users to encourage ethical and legal behavior by doctors and hospitals.	Not available
Anti-corruption Participation	As Diferentonas	Citizens can compare federal investments between states and municipalities and inspect public works	Outdated
	Fiscalize	Application to improve State-citizen interaction. A space for sending popular manifestations and displaying responses to the citizen	Not available
	SouFiscal(1)	Citizens can make complaints and inspect public agreements through an easy-to-use tool	Not available
Hackathon TCE-SP	*The name of the project was not provided by the promoters of this hackathon.*	Game focused on raising children's awareness about the characteristics and evils of corruption	Not available
	The name of the project was not provided by the promoters of this hackathon.	Game focused on raising children's awareness about the characteristics and evils of corruption	Not available
	Corruptown	Game focused on raising children's awareness about the characteristics and evils of corruption	Not available
HackathonUSP	Motirô	System for horizontalizing the university political debate and facilitating the active participation of USP's internal public	Not available
	Palp	Citizens can monitor the progress of public works, from the signing of the contract to its completion, on a website	Outdated
	Pesquisaqui	To facilitate access to USP researchers' information and their integration into the university through a database	Outdated
1st Anti-corruption Hackfest	Enquadrados	Identify the existence of ghost employees - the system compares number of employees and area of public offices	Outdated

2nd Anti-corruption Hackfest	SherlockApp	Citizens can analyze government contracts, comparing prices paid for products found in the market	Not available
3rd Anti-corruption Hackfest	Vidinha de Balada	Track politicians' spending, their personal perks, using humor to categorize each politician's profile	Outdated
	PaCiente	Application captures complaints from the population with health services, allowing the georeferencing of health units and their classification according to complaints	Outdated
	Folha Limpa	It cross-references information from public servants' payrolls, allowing divergences and irregularities to be found, such as the illegal accumulation of positions	Not available
	Minha Cidade	The application follows the distribution of resources in the budget and their effective application, enabling the identification of distortions in priorities in public spending	Not available
	Políticos.com	Application to follow the profile and performance of politicians	Not available
	Quebra-quebra (Quebra Câmara - Quebra Senado)	Break the locks on access to parliamentarians' compensation data, enabling a comparative and critical analysis of the amounts and benefits received	Outdated
	Sou Fiscal(2)	Application focused on detecting and reporting irregularities in public works	Outdated
	Geração Limpa	Game with the purpose of fomenting the discussion about citizenship and ethics among children	Not available
	B.O.Bot	Citizens can collaborate with information about police occurrences, allowing a georeferencing of places with potential risk, helping public security agencies	Outdated
	Caça Fantasmas	By cross-referencing bidding data and georeferencing the address of companies, identify shell companies hired by the public service	Not available
1st Hack in Sampa	Extrato Público	Monitor the expenses of São Paulo's State councilmen's offices, facilitating the citizen's access to the information made available by CMSP	Updated
	Suspeitando	Citizens can have access to bidding contracts of the City Hall of São Paulo considered suspicious	Not available
	Luppa	Compare prices of government purchases with market values. If there is suspicion, the citizen can create a petition asking for an explanation of the expenditures.	Not available
Anti-Corruption and Child Pornography	Fiscal Cidadão	Collaborative tool in which citizens can provide information and make complaints about works carried out in the cities	Not available
	Devinhx	Game to monitor children's behavior and detect sexual abuse as soon as the first signs appear	Not available
2nd Hack in Sampa	No Faro	Compare bid prices with prices of ordinary consumers. In suspicious cases, the user can sign a public civil action to request investigations	Not available
	PrevineAê	Inclusion of QR CODE on construction signs in the city. Citizens can view them on the application's map and check the status of the progress of each one.	Not available

	Cadê meu remédio?	Preventing the deviation of medicines offered by the public network, monitoring deliveries and informing which medications are available in each Basic Health Unit	Not available
Amapá HackFest	Funcionário do mês	Tool that cross-references information to identify evidence of undue accumulation of public positions	Not available
	Precisava?	Application for citizens to have access to information about members of parliament and give their opinions about their money spending during their mandates	Outdated
	Esclarece aqui	System for requesting clarifications about unfinished public works	Not available
HackFest-PB	Brasirama	Present a socio-demographic profile of the citizens through an easy-to-read application	Outdated
	Cadê meu remédio?	Citizens can know which medicines are distributed for free, where to find them and if they are available. To identify deviations or lack of delivery by the public authorities	Updated
	Lupa na Toga	Application that presents and analyzes all subsidies and per diems received by Brazilian magistrates	Not available
	Não nasci para ser a outra	Platform that investigates phantom female candidates for filling political parties' quotas	Outdated
	Focaqui	Application that shows the homicide and violence against women rates by location	Outdated
	Câmara das Deputadas	Platform that presents a survey of the laws proposed and approved by women in the Federal House of Representatives, as well as a profile of the members, showing the female political scenario	Not available
	Me diz quem tu és	Application that identifies political, social and ideological positions of parliamentarians through the analysis of their speeches	Outdated
HackFest Rio	Rachadinha	Provide transparency to the parliamentarians' offices - expenses with purchases and payment of assistants and other data that facilitate social control	Outdated
	Argos (Argus)	Improve the citizen-military police integration: direct access platform for occurrences notifications to be answered by a police car close to the scene and other functionalities	Not available
	Foca Aqui	To identify territorialized security data and cross-reference it with data from the members of parliament elected in a given region, so that the citizen can demand solutions from these politicians	Not available
HackRibeirão	Audit	Through a platform, citizens can follow details of biddings for the acquisition of products and services, and make related complaints	Not available
	Xperion	Through an application, citizens can follow details of works that are taking place in the city and denounce them	Not available
Hackfest MPRN	Licitascore	Consultation of the control organs for the companies that participate in biddings. Creation of a ranking of contractors by number of works carried out and amounts collected	Not available
	Cidadão Vigilante	Facilitate the citizen-public ministry relationship by offering an application for various complaints that	Not available

		allows media insertion.	
	Divaps	Through an application, citizens can follow details of works that are taking place in the city	Not available
HackFest-RS	Spinne	Creating risk indicators for biddings through machine learning	Not available
	7 Hack	Make data about public works available in a simple format. The platform would allow the collaboration of the population through gamification	Not available
	Projeto Ciranda	Dashboard with centralization of bidding and contract data and risk indexes based on public sector rules. Sending of alerts to inspectors	Not available
	Tem Remédio	National consultation on the availability of medicines (at public drugstores), unifying the tools that already exist in some cities	Outdated
Hack-MS	Lupa do Cidadão	Simplify citizen access to Transparency Portal data by creating and posting related graphics on social networks	Not available
	#Licid	Platform in which the citizen can view various information about public purchases/bids	Not available
	Capi	With artificial intelligence, guide and facilitate the use of public services by the population	Not available
Hackathon TCE-CE	Macashare.org	Unify all the data from the transparency portals of Ceará's cities, with discriminated revenues and expenses, in a single format	Outdated
	AuditaCE	To identify evidence of fraud/irregularities in contracts of the city halls of Ceará in the contracting of services/purchases of products	Not available
	Vinibot - Digimon	Analyze bid product values and, in suspicious cases, send the data to TCE technicians through the Telegram application	Not available

Source: Survey conducted by the author based on interviews and web research.