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Direct Cost of Scope Creep in Governmental Construction Projects in Qatar

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Abstract - A very common reason for projects failure is the poor scope management and control . (Scope Creep) is the current leading cause of project failure globally according to the 2010 Global Survey, Top 10 Obstacles to Project Success¹ This paper discuss the direct cost of scope creep in governmental construction projects in the state of Qatar .The paper is based on a study prepared by the author to support a new change control system which is going to be designed by him . The study contains a questionnaire with participation of 70 project manager and official in the governmental construction sector in the state of Qatar. The paper will investigate the reasons for scope creep and will provide an estimate for the direct cost resulting from scope creep in some construction projects executed in the last few years. A case study will be provided as an example, lessons learned from the project will be provided. Finally the paper will present suggestions - based onthe questionnaire – to avoid scope creep in governmental construction projects.

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The paper will investigate the reasons for scope creep and will provide an estimate for the direct cost resulting from scope creep in some construction projects executed in the last few years.

A case study will be provided as an example, lessons learned from the project will be provided.

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I. LIMITATIONS

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This paper and study is covering the state of Qatar.

The paper covers governmental construction projects, these projects include projects like departments headquarters and small public services points, it doesn't include public works (like roads, hospitals, dams ...etc

II. DEFINITIONS

It is not unusual for construction projects to witness a major scope changes, however, scope change and scope creep are completely different. "Scope Change is an official decision made by the project manager and the client to change a feature X to expand or reduce its functionality. Generally, scope change involves making adjustments to the cost, budget, other features, or the timeline."²

On the other hand "Scope Creep is generally referred to as the phenomenon where the original

project scope to build a product with feature X, Y, and Z slowly grows outside of the scope originally defined in the statement of work. Scope creep refers to scope change which happens slowly and unofficially, without changing due dates or otherwise making adjustments to the budget." ³

Another definition for scope creep is the "the tendency for a project to extend beyond its initial boundaries"⁴.

While some project manager accept the fact that scope creep is a must and try to live with it and reduce its direct effects ,most project manager are struggling to fight scope creep.

III. INTRODUCTION

Historically, construction projects have a long history of cost overrun (cost escalation), even in the gigantic projects where hundreds of people are involving in the planning stage for years.

Like many other construction projects in the world, governmental construction projects in Qatar are witnessing a cost overrun.

In many governmental construction projects that I was involved in, the final product was never the same as originally planned, for many reasons the project scope was changing and evolving. The project management team was struggling trying to update schedule, cost and other project constrain to keep up with the new scope.

Back in 2006 we made a breakthrough in our organization PM procedures of work, I started to submit a direct cost estimate for "scope creep" as an attachment in the final project report. The senior management was completely surprised about the additional costs; they were convinced that scope creep was a real obstacle. The scope management plan was not efficient as expected.

I was assigned the responsibility to prepare a report about the direct cost of scope creep in my organization construction projects , so I started by analyzing the problem and open discussions with fellow project managers in governmental organizations , I discovered that we all share the same problem . The senior management decided to "scope creep" my assignment and expand the study to include a

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¹ The 2010 Global Survey, Top 10 Obstacles to Project Success (<http://www.mutoperformancecorp.com/2010SurveyResults.htm>)

² <http://pm.stackexchange.com>

³ <http://pm.stackexchange.com>

⁴ Scope Creep-A Lethal Project Disease Thoughts on Prevention and Cure

questionnaire about scope management and control. The results will be used to support a new scope management system that will be introduced next year.

IV. SURVEY QUESTIONNAIRE

To achieve the study objectives, I carried a historical research about scope creep in construction projects in Qatar, based on my studies; I developed a survey questionnaire to understand the root cause of the problem.

The questionnaire was distributed to 70 project manager and government officials, the questionnaire consist of 3 parts, part one is general information about the participants, part 2 asks questions about scope creep, and part 3 is about possible solutions for the problem.

Response from 60 project managers and government official were received and analyzed. The outcome of the questionnaire will be discussed below.

V. RESULTS AND FINDINGS

a) Results and Findings :

It was clear from the questionnaire results that most of the participants understand the term scope creep (fig 1), in addition 92% pf them witnessed a scope creep in one or more of the projects they executed (fig 2).

An assessment was made to the projects submitted by the participants for evaluation, none governmental projects were eliminated, the next step was to study the final project report to obtain the required data such as baseline cost and variations.

The study results has shown that:

- All projects had more than 10 variations orders.
- There is an inverse relationship between project final cost and direct cost of scope creep.
- 35% of the participants referred scope creep in the projects to the ignorance of key stakeholders during

Fig. 1

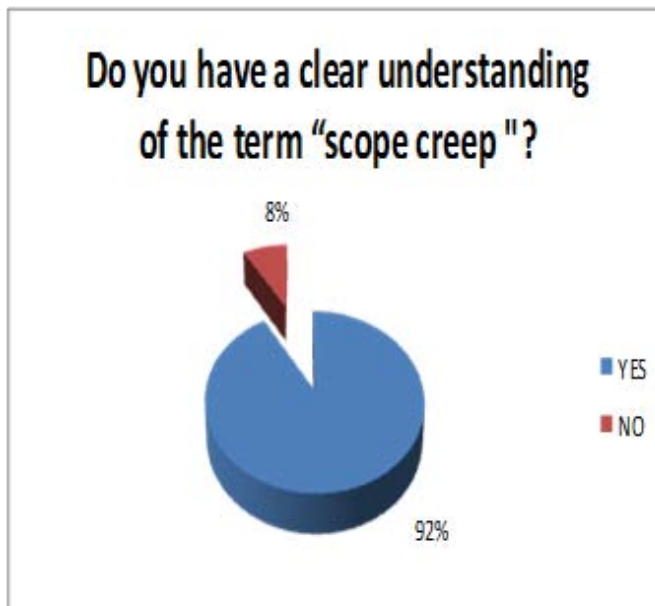
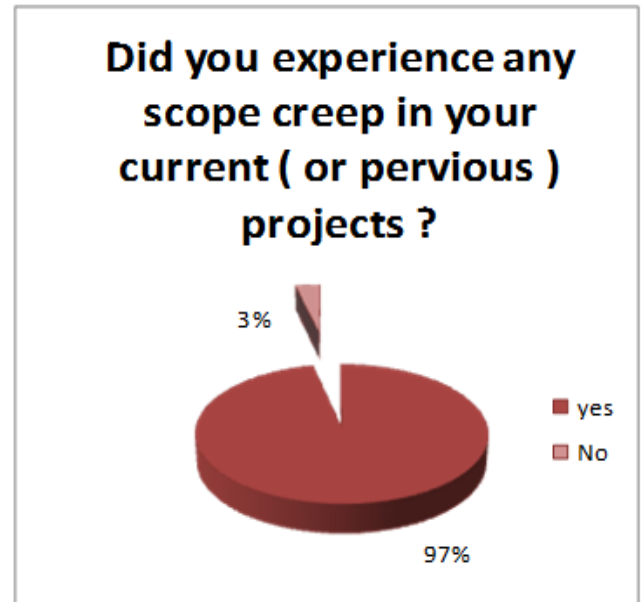


Fig. 2



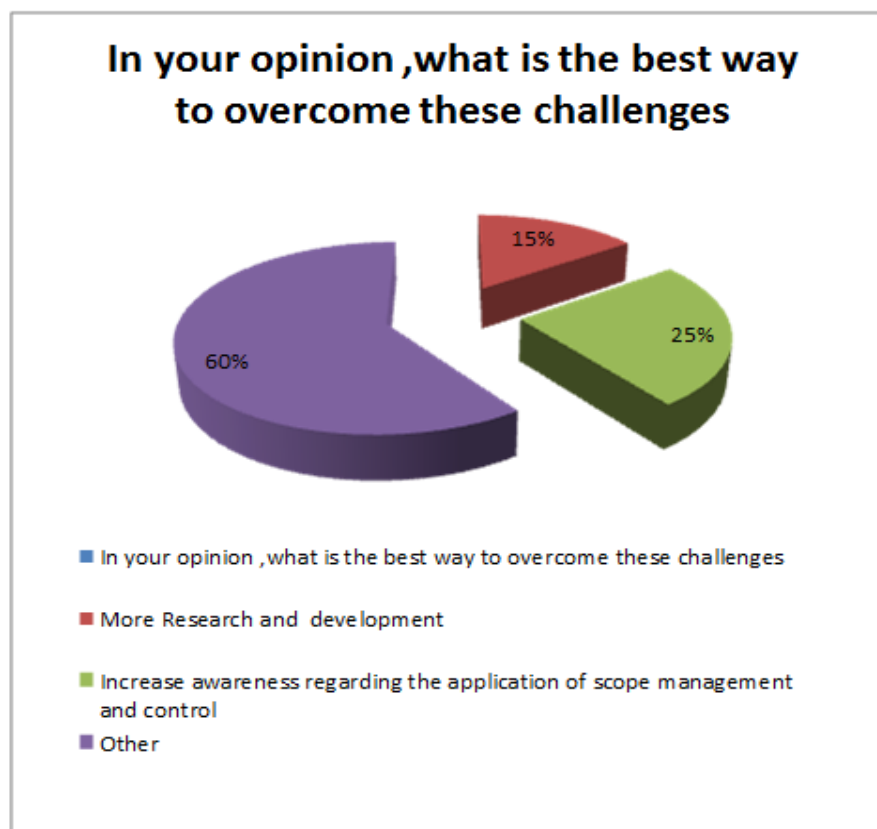


Fig. 3

b) Direct Cost of Scope Creep

The majority of our respondents agreed on the negative impact of the scope creep. The above table

shows the direct cost of scope creep for governmental construction projects, the data comes directly from the final project report :

No	Original Project Budget (QR)	Final project cost (QR) - approximately	Variations	Variations%	Direct Cost Due to scope creep	Direct Cost Due to scope creep %
1	3,000,000	3,800,000	450,000	12	350,000	9.21
2	5,500,000	7,450,000	1,280,000	17	670,000	8.99
3	8,000,000	9,650,000	1,000,000	10	650,000	6.74
4	15,000,000	18,900,000	3,100,000	16	800,000	4.23
5	22,000,000	23,200,000	520,000	2	680,000	2.93
6	30,000,000	34,150,000	3,820,000	11	330,000	0.97
7	35,000,000	49,000,000	13,670,000	28	330,000	0.67

Table 1 : Projects Data

Notes : All the above information was obtained directly from final project report.

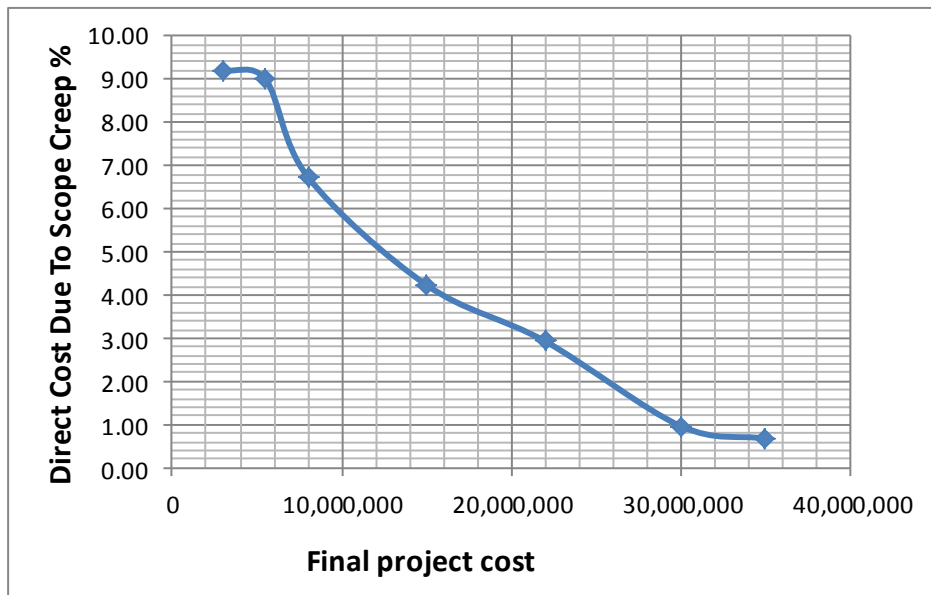


Fig. 4

VI. MAIN CAUSES OF SCOPE CREEP IN CONSTRUCTION PROJECTS :

According to the study and the questionnaire, the 10 top reasons for scope creep are:

1. Ignorance of key stakeholders until the project is underway.
2. The project is executed after years of completion of study and scope definition.
3. Scope definition is done by the wrong people.
4. Government officials are always "ambitious" and unrealistic regarding the outcome of projects.
5. Intervention by politicians and senior government officials.
6. The data was not enough when the scope was defined.
7. Bad management of project changes, and absence of scope management and control systems.
8. Most managers focus on major scope changes and ignore small changes that could lead to bigger scope creep problems.
9. In government projects, it is not easy to differentiate between what is included in the project and what is not included.
10. Conflict in different government agencies interests.

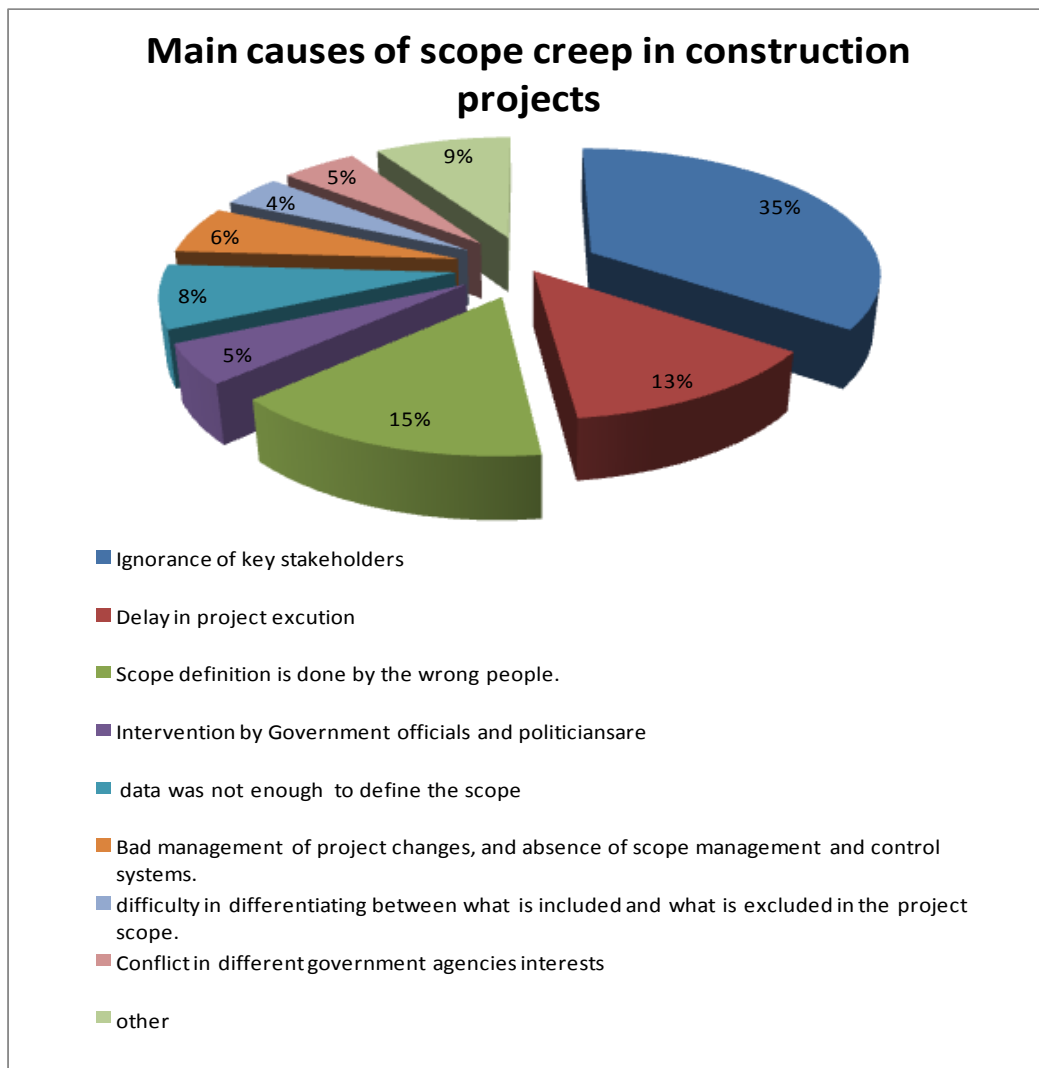


Fig . 5

It is clear from the chart that 65% of the participants agree about the 3 main scope creep causes. In fact these causes are considered as a characteristics of project management in the public sector; the work is done in the wrong time (years before the project execution) by the wrong people, who always ignore the interests of the key stakeholders.

VII. HOW TO AVOID SCOPE CREEP IN GOVERNMENTAL PROJECTS IN QATAR? HOW TO REDUCE COSTS

According to the questionnaire, most respondents suggested that extra awareness about the impact of scope creep and the application of an effective scope control system will reduce the effect of the problem; in addition, other ways to solve the problem could be summarized as follows:

1. Project scope must be identified by the right people at the right time.

2. Stakeholder's analysis must be completed before the scope is defined.
3. Project team must sell the project to all stakeholders early before the start (get buy in).
4. An effective control system must be used for all types of projects.
5. Project team must gather all relevant information before finalizing the scope statement.
6. Project team must use an effective and clear communications system.

VIII. CASE STUDY

The AWQ (which is a government agency) witnessed an increased work load in the last 3 years; the total No of employee was tripled. The offices were crowded, as a result the senior management decided to revive the head quarter project which was postponed by the Minister several years ago.

1. In order to get finance for the project, the AWQ made some modifications for the project, they also

- adjusted the project cost and sent it to the minister office.
2. The project scope was defined after the approval of the budget. The project scope was to build a new headquarter for the agency and to solve the congestion in the agency offices.
 3. Shortly after the project started, a new organizational chart was approved for the agency, two new departments were created, the investment department, and training & development .
 4. The training and development department requested the addition of new multipurpose hall for seminars, lectures and other related training activities .the change was approved.
 5. As the restructuring processes was imposed by the minister, the senior management of the agency made a claim about the new two departments. They succeed to get extra financial provision for the HQ project. The extra funds guaranteed were 4 times the actual value originally calculated (the senior management was expecting the minister office to apply some budget cuts).
 6. The senior management began to think about new ways to invest the extra funds.
 7. The design office informed the senior management about the new municipal regulations in the area; it is now possible to increase the height of the building by one more story. the design office informed the management that they will make design changes at no costs (the design office was gold plating his services and planning to get new projects from the agency) .
 8. The senior management welcomed the free gift from the design office and exerted some pressure on the contractor to make the changes for the same rate in the original contract without taking the inflation and increasing in building materials prices into account . Knowing that many variations will be underway the contractor agreed to add the extra floor.
 9. After the completion of the concrete skeleton of the building, the agency discovered that the car parking is no longer suitable for the capacity of the building. It was not possible to increase area of the parking (cant exceed the maximum building area from the lot) , the agency decided to add a basement to the original parking area .
 10. The addition of the new basement floor added substantial costs to the project , due to high ground water table in the area .
 11. After the completion of the building, a detailed cost report was submitted to the senior management about the running and maintenance cost of the building. The running cost was exceeding the planned value.
 12. Based on the internal audit unit request ,the senior management initiated an investigation about the

reasons for cost overrun and delay of the project , the final report attributed the main cause to scope creep , none professional project management of the project and absence of clear scope control procedure .

13. The senior management blamed the new municipal regulations, construction market conditions and the contractor.

a) Impact of Scope Creep On This Project :

1. The project was completed 2 years later than originally planned.
2. The total cost overrun was 25 million QR (40% of the original budget), of the total the direct cost of scope creep was about 15 million QR.
3. Increased running and maintenance costs.

b) Some Lessons Learned From This Project (About Scope Creep) :

1. Don't initiate a project without a clear written scope statement.
2. Don't underestimate the small changes of scope; the sequences must be taken into account.
3. Project scope management and control is a must , no matter the size of the project.
4. The owner should investigate the real intentions behind any "free gifts" from the design offices , contractors... etc
5. All stakeholders must be identified and consulted before defining the project scope.
6. Government agencies will never acknowledge there responsibility in projects scope creep, there are always plenty of other project stakeholders to blame.

IX. CONCLUSION

The scope creep has a serious negative impact on governmental construction projects in the state of Qatar.This paper has outlined the main causes ,the direct cost of scope creep and possible solutions for the problem - according to the survey questionnaire .

Among other reasons a defect in stakeholder analysis at the early stages of the project and the large time gap between project studies and execution are on the top of the list .The respondents suggested that extra awareness about the impact of scope creep and the application of an effective scope control system will reduce the effect of the problem .A key finding of the study is the inverse relationship between project size and the direct cost of scope creep , the larger the project ,the lower direct cost of scope creep , this could a result of hiring a n external project management company in large projects .

A case study for a construction project was introduced; the case has shown the mechanism and impact of scope creep and the lessons learned from the project .

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APPENDIXES:

1. Appendix (1) : The Scope Management & Control
Questionnaire

Scope Management & Control

Questionnaire

- ❖ The purpose of this survey study is to investigate the direct costs of **scope creep in governmental construction projects**. The information provided in this questionnaire is highly confidential and shall be used **ONLY** for research purposes. Your perfect information will be appreciated as it will assist to complete the study.

PART 1 : GENERAL INFORMATION

1. Name (optional)

.....

2. Discipline

.....

3. Please circle the figure that represent your years of experience :

1 2 3 4 5

6 7 8 9 10

11 12 13 14 15

16 +

(Graduate)

(Intermediate)

(advanced)

(Expert)

4. Please circle the figure that represent your years of experience (In the state of Qatar) :

1 2 3 4 5

6 7 8 9 10

11 12 13 14 15

16 +

5. What is your highest qualification :

☐ Bachelor (Bsc –Btech)

☐ Master

☐ PhD

☐ other

6. Professional Member ship :

☐ Yes (.....)

☐ No

7. Do you hold a formal project management qualification ?

☐ Yes (.....)

☐ No

PART 2 :SCOPE CREEP :

1. Do you have a clear understanding of the term “scope creep “ ?
☐ Yes ☐ No
2. What is the difference between scope creep and scope changes? circle the correct answer :
☐ Scope creep is a synonym of scope change .
☐ Scope creep is the process of controlling the project scope.
☐ Scope creep occur where the original project scope slowly grows outside the scope originally defined in the statement of work.
3. Did you experience any scope creep in your current (or pervious) projects ?
☐ Yes ☐ No

If you answered “yes” for Q3 :

(If you need to enter data for more than one project use extra copies of this page)

- a. Project type
☐ Governmental ☐ commercial
- b. Project Size:
☐ small (<10 million QR) ☐ medium(<30 – 50> million QR) ☐ large (>50 million QR)
- c. Who was responsible for controlling the project scope ?

☐ Project manager ☐ sponsor ☐ Project Team ☐ collective responsibility

d. From the project records ,what was the total value of the variations and cost creep in the projects

Variations :

Scope creep :

e. What were the lessons learned about scope creep and scope control in this project?

.....

PART 3 : SCOPE CONTROL CHALLENGES :

1. Do you think it is important to protect the project scope

☐ Yes ☐ No

2. Do you agree or disagree with the following statements :

Agree Disagree

Scope cant be controlled in governmental construction projects

☐
☐

Formal scope control procedure is required for large (complex)
 construction projects only .

☐
☐

Scope control management was applied in many construction projects and shown

a significant successes .

☐
☐

Scope management and control faces a lot of barriers in the construction industry.

☐
☐

scope management and control can overcome the challenges and barriers and will play a major role in the future of construction projects.

☐
☐

3. In your opinion ,what is the main challenge of Scope management and control in governmental construction projects :

.....

.....

.....

.....

4. In your opinion ,what is the best way to overcome these challenges :

☐ More Research and development .

☐ Increase awareness regarding the application of scope management and control in construction industry

☐ Others ,please specify :

.....

.....

.....

.....

5. Do you have any intention to know more about scope management and control ?

☐ Yes

☐ No

6. Do you have any intention to apply scope management and control in your future projects?

☐ Yes

☐ No

* Thank you for your participation

