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How To Design A Game Schedule and Traffic: Multidisciplinary Sports Event

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Abstract:

There are many multidisciplinary competitions like the **Olympic Games, Asian Games, Commonwealth Games** etc, which are being held every four years, and for the smooth conduct of such Games, it is imperative to finalize the Games schedule. The Games schedule helps to understand the per-day traffic or footfall at the venues and other areas. The schedule also provides certain details at a glance, such as

- Number of competition Days
- Competitions start and end dates
- Date of Opening and Closing ceremony

While finalizing the Games schedule, it must be ensured that the day-wise footfall of the participation may be distributed uniformly, which will help to foster proper planning of different functional areas, which are as follows:

1. Accommodation (Hotel, Hostel, & Games Village)
2. Catering (Provision of Food at Accommodation place and Games Venue)
3. Transportation (Provision of Buses)
4. Overlays Requirement (German Hanger, Branding, Furniture etc)
5. Resources
6. Sports Equipment etc.

Hence, it is important for people who are in sports to understand the process of how to prepare a game schedule. The process of preparing a schedule is based on my personal experience gained in conducting **Khelo India Games & National Games in India.**

Process to design the game's schedule

Step 1

a. **Finalize the number of Sports, the number of durations of each sport & number of Participants (Athletes, Competition Manager/Competition Director, Technical Officials, Chef De Mission, Support Staff, Volunteers, etc)**

For example, a multisport competition is planned to be conducted in 7 sports disciplines with an approximate participation of **2706.** The details are as follows;

Participation										
S. No.	**Sports**	**No. of Days**	**Athlete**	**TO**	**Escorts**	**Support Staff**	**Classifiers**	**SSV**	**CM**	**Total**
1	**Sport 1**	**2**	**55**	20	20	16	2	20	1	**134**

2	**Sport 2**	**3**	**650**	100	192	195	3	80	1	**1221**
3	**Sport 3**	**3**	**150**	40	48	45	2	10	1	**296**
4	**Sport 4**	**4**	**170**	30	40	51	2	30	1	**324**
5	**Sport 5**	**5**	**175**	30	45	50	0	27	1	**328**
6	**Sport 6**	**3**	**130**	30	40	39	2	18	1	**260**
7	**Sport 7**	**2**	**75**	20	5	20	2	20	1	**143**
Total			**1405**	**270**	**390**	**416**	**13**	**205**	**7**	**2706**

b. Finalization of the number of days to conduct 7 Sports disciplines

First Method

Let's assume, all 7 sports are to be conducted in **7 different venues**, then the duration of the schedule is equal to the duration of the sport that requires the maximum days to complete. For example, **"Sport 5"** requires 5 days to complete. So, the duration of the Games schedule should be **5.**

S. No.	Sports	No. of Days
1	**Sport 1**	**2**
2	**Sport 2**	**3**
3	**Sport 3**	**3**
4	**Sport 4**	**4**
5	**Sport 5**	**5**
6	**Sport 6**	**3**
7	**Sport 7**	**2**

Second Method

Suppose if two sports are to be conducted one after the other at one venue, then post the completion of **one sport**,1 or 2 extra days are required for the readiness of the venue for the next sport. Then the duration of the Games will be the sum of both the duration of individual sports, plus extra days. It must be ensured that the resultant of all three should be greater than the duration of the other individual Sports

S. No.	Sports	No. of Days	Venues
1	**Sport 1**	2	**Venue 1**
2	**Sport 2**	3	**Venue 2**
3	**Sport 3**	4	**Venue 3**
4	**Sport 4**	3	**Venue 4**
5	**Sport 5**	3	
6	**Sport 6**	5	**Venue 5**

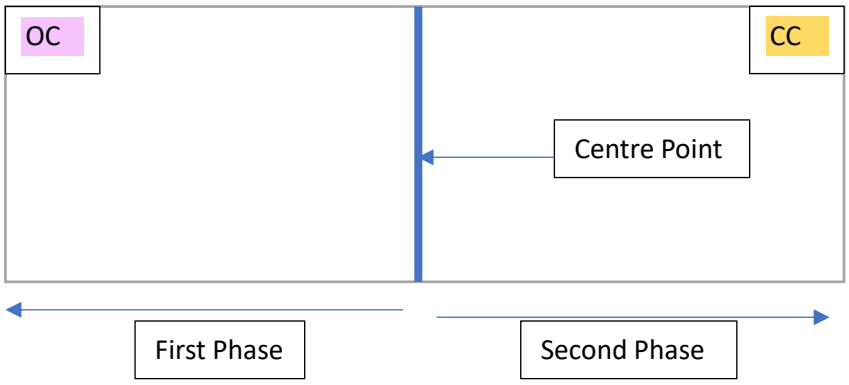
7	**Sport 7**	2	

a. **Sports 1,2, and 3** are at different venues. **As per point i**, out of 3 Sports, **Sport 3** requires the maximum days to complete, ie.4, which means the duration of the Games **should be 4.**
b. But if we see **Sports 4 and 5**, both are at venue 4. **As per point ii**, the duration of the Games should be (3+3 +2 days extra = 8 days) or (3+3 +1 day extra = 7 days), which is greater than the respective sport days i.e 2,3,4,5
c. The **Sports 6 and 7** are at venue 5. The duration of the Games should be (5+2 +2 days extra = 9 days) or (5+2 +1 day extra = 8 days), which is greater than the respective sport days i.e. 2,3,4,5

Considering the above, the Games may be conducted in 8 competition days or 9 competition days

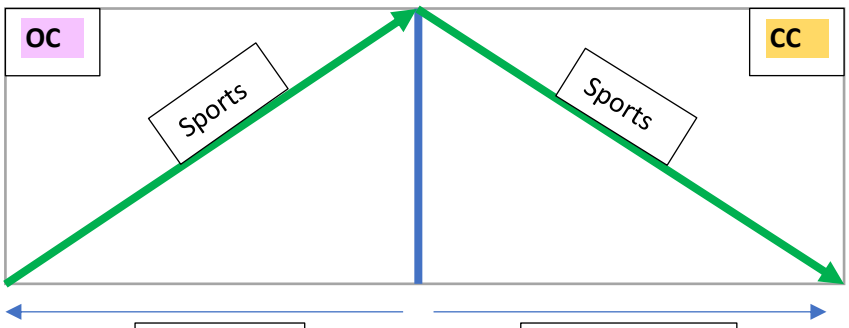
Step 2

Let's assume the Games required 8 competition days. Divide the schedule into two phases (First Phase -4 days & Second Phase- 4 days)

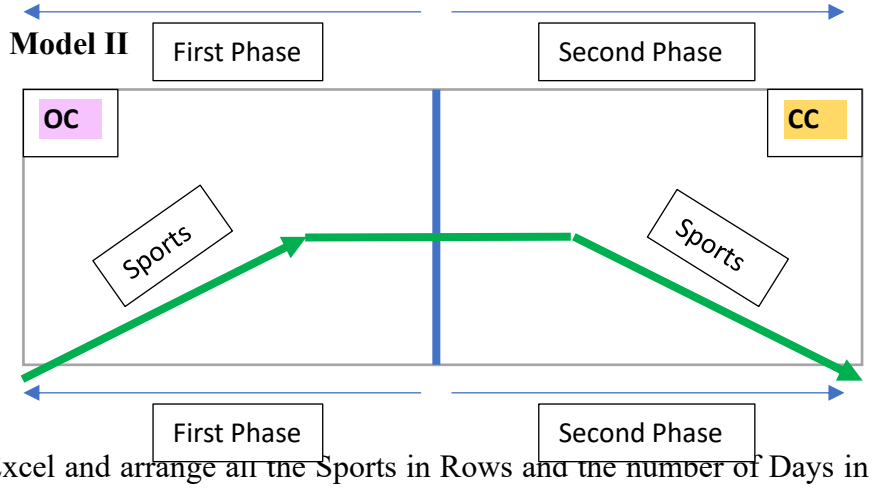


1. **First Phase:** OC to Centre Point, **Second Phase**: Centre Point to CC
2. Keep minimum a number of sports on the day of the Opening ceremony (**OC**) and Closing ceremony (**CC**) to reduce workload on the day of OC and CC
3. Sports with a medal ceremony on the first day **may not be commenced** on the day of the opening ceremony (**OC**). For ***example, in athletics, swimming, etc., finals are conducted on the same day, and medals are awarded after*** the final round.
4. Sports with maximum participation may not overlap. For example, in ***athletics, swimming,*** the number of Athletes is higher, so the dates to conduct both sports must be different, which helps to reduce daily traffic (***helps to reduce logistics expenses***)
5. The number of Sports shall be a minimum on the day of the **opening ceremony** and shall be increased gradually towards **Centre Point**, then start decreasing towards the end of the completion of the competition **or** increased gradually up to a **certain point** then become uniform then start decreasing towards the end of the **completion of the competition**.
6. Ensure that the competition dates do not coincide with any other competitions. If two major competitions are planned to be conducted on the same dates, then similar athletes are not able to participate in both competitions, and viewership may also be distributed among both competitions.

Model I



Model II



Open an Excel and arrange all the Sports in Rows and the number of Days in a column, considering the point of **Step 2**

Schedule 1

- Keep 2 Sports on the day of the Opening ceremony and 2 Sports on the day of the Closing Ceremony. The rest sports are adjusted in between.
- Consider the number of competition days as **8**

Games Schedule												
S. No.	Sports	Participation	No. of Days	Venues	(OC) Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	(CC) Day 8
1	Sport 1	134	2	Venue 1			Sport 1					
2	Sport 2	1221	3	Venue 2		Sport 2						
3	Sport 3	296	4	Venue 3				Sport 3				
4	Sport 4	324	3	Venue 4	Sport 4							
5	Sport 5	328	3							Sport 5		

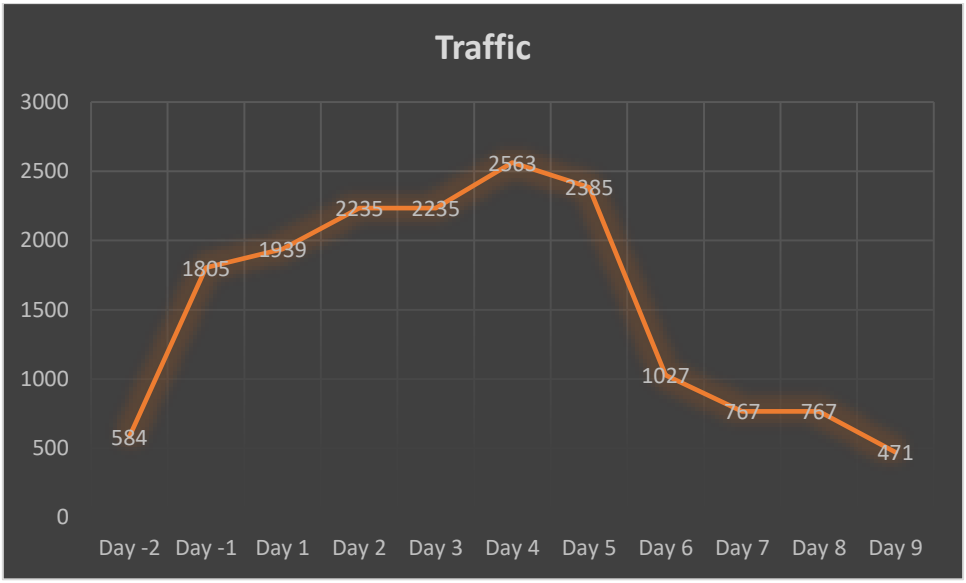
6	Sport 6	260	5	Venue 5	Sport 6								
7	Sports 7	143	2								Sport 7		
	Total	2706											

Games Traffic 1

Assumption: Athletes are arriving two days prior to the commencement of the respective sport (Day -1, Day -2) and leave one day (**Day 9**) after the completion of the respective sport

Games Traffic														
S. No.	Sports	No. of Days	Venues			(OC)							(CC)	
				Day -2	Day -1	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9
1	Sport 1	2	Venue 1			134	134	134	134	134				
2	Sport 2	3	Venue 2		1221	1221	1221	1221	1221	1221				
3	Sport 3	4	Venue 3				296	296	296	296	296	296	296	
4	Sport 4	3	Venue 4	324	324	324	324	324	324					
5	Sport 5	3							328	328	328	328	328	328
6	Sport 6	5	Venue 5	260	260	260	260	260	260	260	260			
	Sports 7	2								146	143	143	143	143
Total				584	1805	1939	2235	2235	2563	2385	1027	767	767	471

	Arrival day
	Competition day
	Departure day



Note:

- Here, the Traffic is increasing till Day 4, then decreasing till Day 9, and the Peak traffic i.e, **2563**, is less than the actual participation, **2706.** Peak traffic should be less than the actual participation.
- The game schedule design will be better if the gap between peak traffic and actual participation is larger.

Schedule 2

- 2 Sports are on the day of the Opening ceremony and 3 Sports are on the day of the Closing Ceremony. The rest sports are adjusted in between.
- Consider the number of competition days as **8**

Games Schedule												
S. No.	Sports	Participation	No. of Days	Venues	(OC) Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	(CC) Day 8
1	Sport 1	134	2	Venue 1		Sport 1						
2	Sport 2	1221	3	Venue 2		Sport 2						
3	Sport 3	296	4	Venue 3					Sport 3			
4	Sport 4	324	3	Venue 4	Sport 4							
5	Sport 5	328	3							Sport 5		
6	Sport 6	260	5	Venue 5	Sport 6							

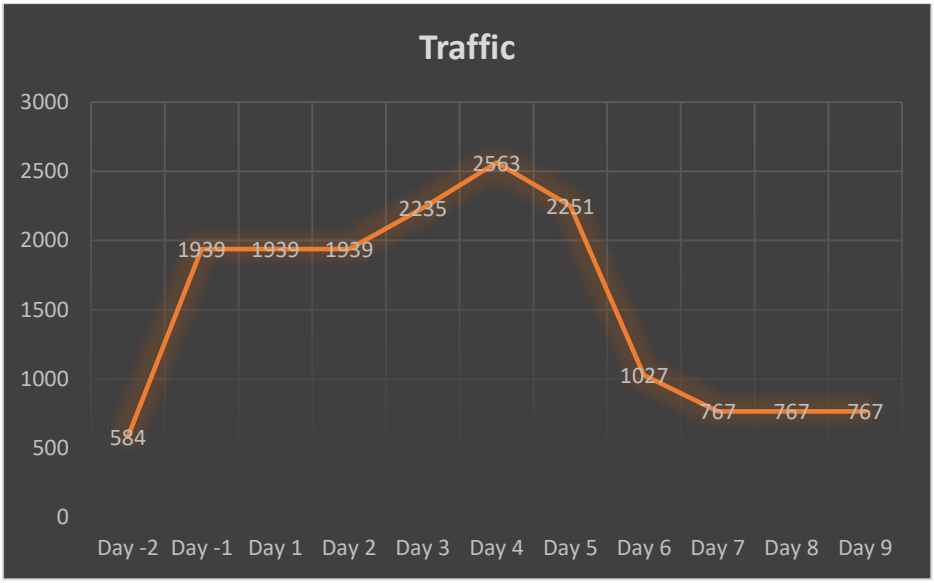
7	**Sports 7**	**143**	2								**Sport 7**	
	Total	**2706**										

Games Traffic 2

Assumption: Athletes are arriving two days prior to the commencement of the respective sport (Day -1, Day -2 and leave one day (**Day 9**) after the completion of the respective sport

Games Traffic													
S. No.	**Sports**	**No. of Days**	**Venues**			**(OCC)**						**(CCC)**	
				Day -2	**Day -1**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Day 8**	**Day 9**
1	**Sport 1**	2	**Venue 1**		**134**	**134**	**134**	**134**	**134**					
2	**Sport 2**	3	**Venue 2**		**1221**	**1221**	**1221**	**1221**	**1221**	**1221**				
3	**Sport 3**	4	**Venue 3**					**296**	**296**	**296**	**296**	**296**	**296**	**296**
4	**Sport 4**	3	**Venue 4**	**324**	**324**	**324**	**324**	**324**	**324**					
5	**Sport 5**	3							**328**	**328**	**328**	**328**	**328**	**328**
6	**Sport 6**	5	**Venue 5**	**260**	**260**	**260**	**260**	**260**	**260**	**260**	**260**			
	Sports 7	2								**146**	**143**	**143**	**143**	**143**
Total				**584**	**1939**	**1939**	**1939**	**2235**	**2563**	**2251**	**1027**	**767**	**767**	**767**

	Arrival day
	Competition day
	Departure day



Note:

- Here, the Traffic is increasing till Day -1, then the traffic is uniform till Day 2, further increasing to Day 4, then decreasing to Day 9, and the peak traffic that i.e, **2563**, is less than the actual participation, **2706.** Peak traffic should be less than the actual participation.
- The game schedule design will be better if the gap between peak traffic and actual participation is larger.

Schedule 3

- 2 Sports are on the day of the Opening ceremony and 2 Sports are on the day of the Closing Ceremony. The rest sports are adjusted in between.
- Consider the number of competition days as **9**

Games Schedule													
S. No.	Sports	Participation	No. of Days	Venues	(OC)								(CC)
					Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9
1	Sport 1	134	2	Venue 1		Sport 1							
2	Sport 2	1221	3	Venue 2			Sport 2						
3	Sport 3	296	4	Venue 3						Sport 3			
4	Sport 4	324	3	Venue 4	Sport 4								
5	Sport 5	328	3							Sport 5			

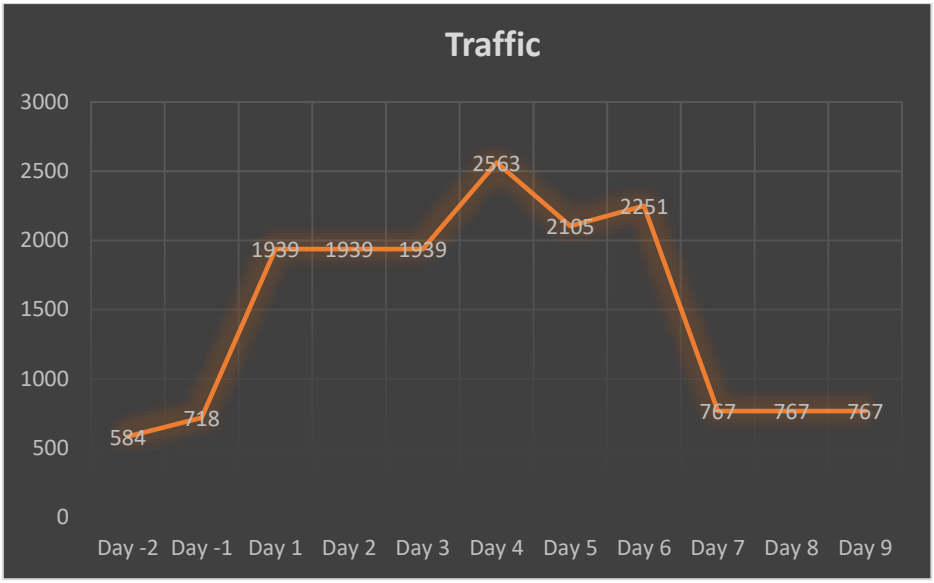
6	Sport 6	260	5	Venue 5	Sport 6									
7	Sports 7	143	2										Sport 7	
	Total	2706												

Games Traffic 3

Assumption: Athletes are arriving two days prior to the commencement of the respective sport (Day -1, Day -2)and leave one day (**Day 10**) after the completion of the respective sport.

Games Traffic															
S. No.	Sports	No. of Days	Venues			(OC)								(CC)	
				Day -2	Day -1	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
1	Sport 1	2	Venue 1		134	134	134	134	134						
2	Sport 2	3	Venue 2			1221	1221	1221	1221	1221	1221				
3	Sport 3	4	Venue 3						296	296	296	296	296	296	296
4	Sport 4	3	Venue 4	324	324	324	324	324	324						
5	Sport 5	3							328	328	328	328	328	328	
6	Sport 6	5	Venue 5	260	260	260	260	260	260	260	260				
	Sports 7	2									146	143	143	143	143
Total				584	718	1939	1939	1939	2563	2105	2251	767	767	767	439

	Arrival day
	Competition day
	Departure day



Note:

- Here, the Traffic is increasing till Day -1, then increasing to Day 1, traffic is uniform till Day 3, further increasing to Day 4, then decreasing to Day 5, then increasing to Day 6, then decreasing to Day 7, then uniform till Day 9 and the peak traffic that i.e, **2563**, is less than the actual participation, **2706.** Peak traffic should be less than the actual participation.
- The game schedule design will be better if the gap between peak traffic and actual participation is larger.

Conclusion

Arrival days			Competition days-8								Departure Day		
Traffic	**Day -2**	**Day -1**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Day 8**	**Day 9**		**Conclusion**
Traffic 1	584	1805	1939	2235	2235	2563	2385	1027	767	767	471		**Competition days: 8 Suitable for the competition**
Traffic 2	584	1939	1939	1939	2235	2563	2251	1027	767	767	767		**Competition days: 8 Suitable for the competition**

Arrival days			Competition days-9								Departure Day	
Traffic	**Day -2**	**Day -1**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Day 8**	**Day 9**	**Day 10**	**Conclusion**
Traffic 3	584	718	1939	1939	1939	2563	2105	2251	767	767	767	439	**Competition days: 9** Not suitable as it will increase day-wise operational cost for overlays, Manpower, and Kitchen services, etc

Reference:

1. My own experience of preparing the Games schedule in multisport Competitions