

Steps to Ensure Excellent IRR in Real Estate Projects

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The Dilemma of the CEO of a Real Estate Major

Mr. Mahindra Kumar, CEO of a major residential real estate company in India, Blu Homes, was facing a dilemma. He was under pressure to quickly improve internal rate of return (IRR) of his projects. The problem was “how”.

Even before the pandemic dealt a painful blow, the pressure on the real estate sector was evident to allⁱ. Post 2013, sales of Blu homes sales had stalled, unsold inventory had piled up and the internal rate of return (IRR) from the projects had dropped from 18-21% realized between 2007-11 to 13-17%; moreover, the debt burden had more than trebled over the same period.

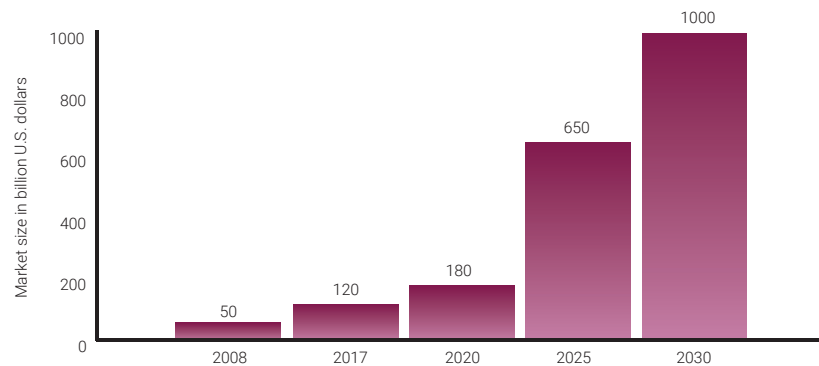


The good news, however, was that his company had emerged whole from the COVID phase. Much of the inventory could be sold even during this time because of government subsidy supportⁱⁱ. Post COVID the company was now achieving YoY sales growth of 68%. Over the past two years Tier 2 and Tier 3 cities had emerged as hot spots for them, and they were setting unprecedented sales benchmarks. Despite the global economic slowdown this positive momentum was expected to continue, and the sector projected to grow to one trillion US dollars by 2030 (see figure belowⁱⁱⁱ).

What more, there was a prevailing demand-supply gap in all segments (see figure below^{iv}).

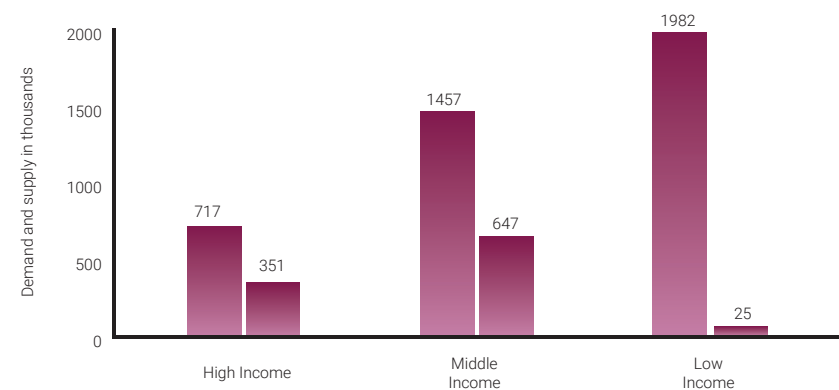
Market size of the real estate industry in India in 2008 and 2017, with estimates until 2030

(in billion U.S. dollars)



Cumulative numbers of demand and supply for housing in eight major cities of India from 2016 to 2020

(in 1,000s)



Naturally the board of Blu Homes saw this as a clear opportunity to mop up this demand, recoup the business, put its profits on a growth trajectory and offer healthier returns. The threat was always there that if the company continued to only make IRR to the tune of 13-17% in its projects, investors may pull out. So, pressure was now on Mr. Mahindra Kumar to ensure a significant jump in IRR. However, he was not sure how. For improving IRR, it was not enough to improve sales; in addition to that Blu Homes must ensure that, while delivering each project, they

1. Reduce costs and improve margins
2. Improve cash flow by faster billing

The key to both of these is primarily timely completion of projects. If projects are finished on time as planned, customers can be billed faster and unbudgeted expenses due to project elongation can be avoided.

The irony was that Blu Homes has ALWAYS delivered projects on or before the promised deadlines (protected by Real Estate Regulatory Authority- RERA). However, the company had rarely met the targeted IRR in these projects even during the 'good times'. And this was not only true for Blu Homes - it is an industry wide phenomenon!



To understand why this happens, one needs to understand how companies in this unique environment typically function.

The Typical Way of Managing a Real Estate Project

Projects in the Real Estate industry in India start off with three due/completion dates! Strange, but true. With the Government bringing in RERA laws which impose stringent penalty on developers for delays in finishing projects, the industry has come up with RERA due dates which are significantly buffered to avoid being penalized^v. Another due date is the internally budgeted due dates which, if met, meets the IRR targets set by the Developer. The third due date, which is 'informally' promised to end customers, is somewhere in between these two.

So, why does the industry use these 3 due dates? Reason is, Real Estate is an industry plagued with project delays and unfulfilled promises. Recent research has indicated that, despite conservative and buffered dates, as much as 500,000 homes worth 4.48 lakh crores are stuck in just seven micro markets of India^{vi}.



Delayed Homes in Seven Major Markets of India^{vii}

With such delays being the norm rather than the exception, developers know that they have to buffer any external commitment in order to maintain reputation and gain or maintain market share.

Why should there be delays, one may ask?

If you ask any Developer about delays, you will be met with a laundry list of reasons, most of them pointing to some external agency and hence, unavoidable. Interestingly, each of the agencies involved have their own reasons which has to do with the developer or other agencies.

- Incomplete scope
- Late trigger for onboarding new agencies
- Multiple requests for same agency
- Multiple revisions in vendor scope & schedule

- Required material was not available when needed
- Incomplete handover
- Lot of holds, stoppages, idle labour
- Delay in giving clarifications, decisions
- Lot of revisions in drawing, rework at site
- Payment issues



Contracting Team

Contractor/ Contracting agency

Typical Reasons for Delay According to Different Stakeholders

However, delays in most real estate projects follow an interesting storyline.

The Real Cause of Delays in Real Estate Projects

A lifecycle of a typical real estate project can be categorized into three key stages

1. Pre-Construction:

This stage involves completion of all activities required before commercial launch of the project including:

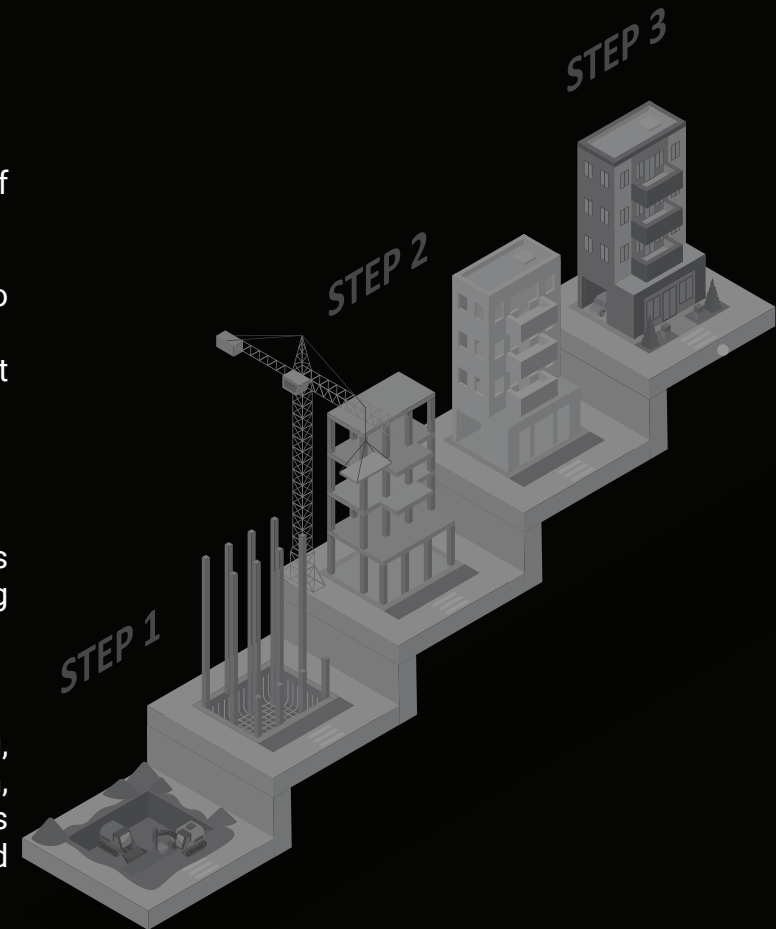
- Business case approvals and land deal finalization
- Detailed design completion and issuance of good for construction drawings to start construction
- Project RERA approval and other necessary statutory approvals to start construction
- Set-up of sales office/mock-up units for customer visits

2. Core & Shell:

This stage involves construction of buildings' RCC frame and internal partition walls for the units. Typically, most developers engage a dedicated contractor for working on the Core and Shell.

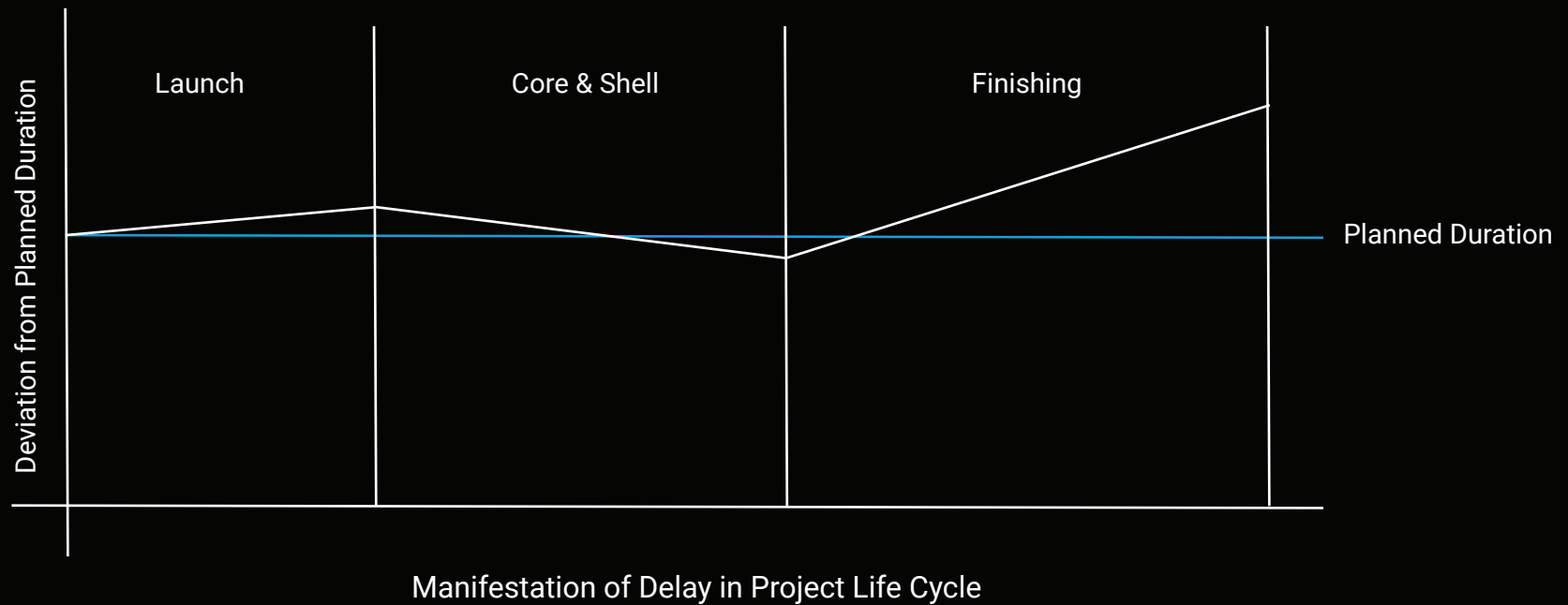
3. Finishing:

This includes all work till final handover of units to end customers. Plastering, waterproofing, flooring/tiling, electrical works, firefighting equipment installation, plumbing, painting, putting up doors & windows, railings etc. are typical activities executed inside the residential units, in the corridors, common areas, shafts and utilities





Assessing delays in different stages of the project indicates that severe delays start to manifest in the finishing stage of the project





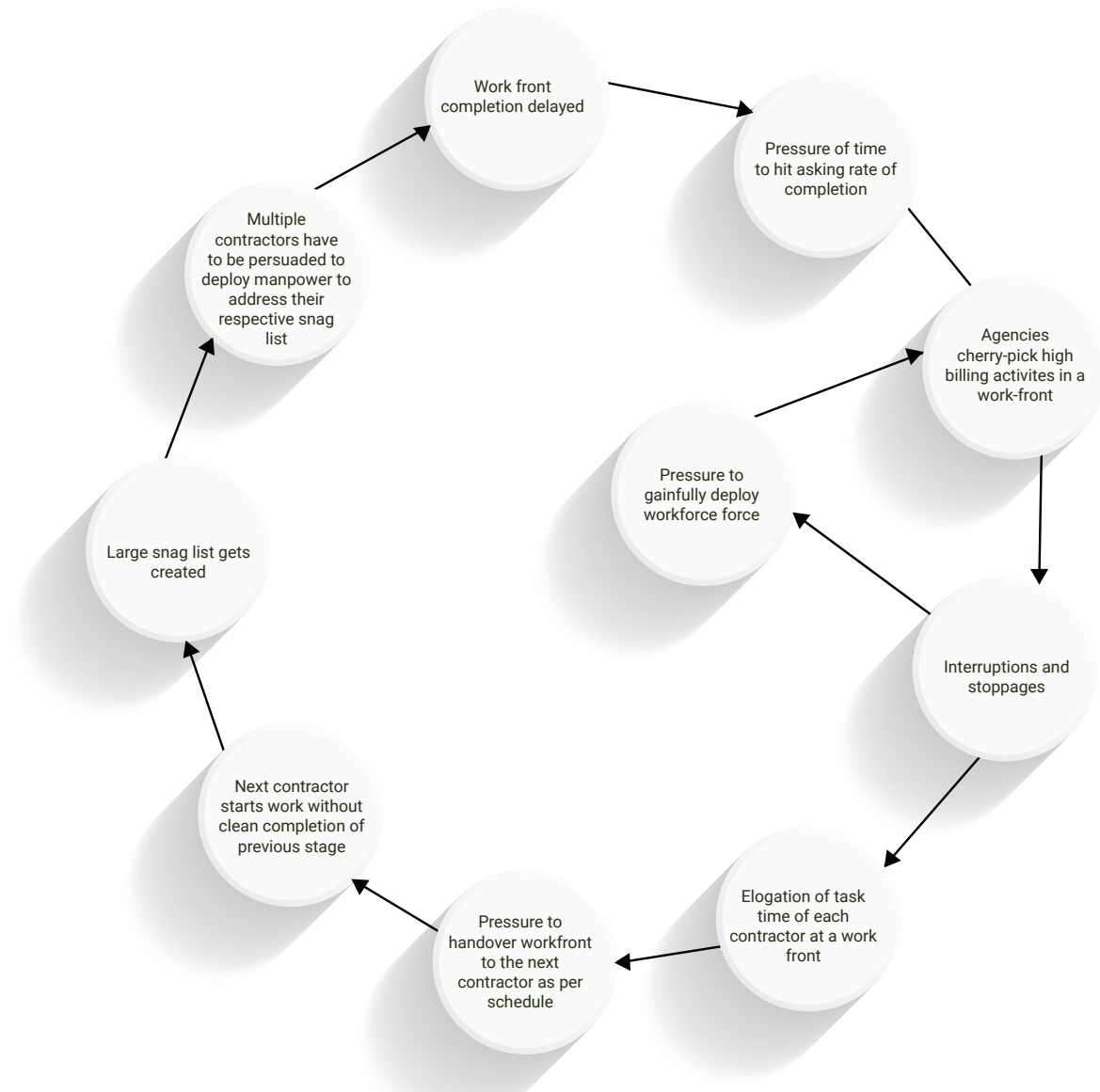
While Core & Shell works are typically executed by a single specialized agency/contractor, what differentiates finishing stage from upstream stages are the following facts

- **Multiple Specialized agencies:** Finishing work needs intervention of multiple specialized agencies/sub-contractors in the limited space of a floor/apartment/unit
- **Inter-dependent activities:** Activities to be performed by each specialized agency is dependent on clean front hand-over by another specialized agency or agencies. Moreover, technical dependencies are such that most finishing agencies have to visit a work-front multiple times. For eg. Plastering contractor completes the plaster for maximum wall area in first pass but re-visits the wall for final plastering after floor skirting and door/windows installation is completed
- **Volume based contracts:** For all specialized agencies, billing is based on volume of work executed with a small percentage withheld as retention amount and linked to final completion and handover to developer

Given the above realities of real estate environment, agencies cherry-pick high billing activities in each work-front in order to maximize billing to support its working capital requirements. Often, high effort and low billing value activities are missed out/delayed leading to unclean front handover^{viii} to next specialized agencies. Downstream agencies, despite unclean handovers, will start working on the front in order to utilize its resources and maximise its billing.

However, given the unclean handovers, agencies face multiple interruptions in completing the fronts. And when there are interruptions, two things happen; a) it increases the overall lead time for completion of that front and creates higher waiting time for the next agency to start work b) the labour (of the agency facing interruption) may become idle. So, in order to utilize their resources fully, often the contractors are forced to start working on whatever is available wherever it is available (preferably with high billing), again with partial preparation. When this behaviour cascades across all processes involved, we end up having multiple contractors engaged in the same work area without having clean handovers^{ix} from one agency to the next. This chaotic way of functioning results, many times, in quality compromise.

Inevitably, these quality problems come back to bite you, in the form of snag lists or punch points. Now, Contractors are reluctant to mobilize manpower for such activities. As mentioned earlier, they tend to prefer higher billing activities in new work fronts over handling the snag list which may require high labour hours but yield lower billing. Therefore, very often the company has to persuade the contractors by agreeing to higher hourly rates to get these snag list points closed. In this process, , not only does the developer end up paying twice for the same work but also suffers as the elapsed time for each work front closure elongates.



Vicious Loop in Real Estate Projects

The Way Out

As we have seen from the discussion above, when incomplete work fronts are handed over to the next stage, this leads to wastages in the form of rework, cost increases and leads to significant delays. Therefore, the only way to break out of this vicious loop is to make sure that clean handovers happen between two functions/contactors/agencies at all times. Since the pressure to maximise billing forces incomplete handovers, the only solution is for every agency is to complete all their activities as per plan or earlier (i.e. in the shortest possible time). The question is, how do we ensure this?

To resolve this conundrum, let's examine, the key elements required to execute the project in shortest possible time. The answer is quite intuitive. If the project has all the material needed, tools, clearances etc required to complete it (a full-kit) and is resourced with adequate manpower in the right mix and quantity, work can progress without any interruptions or stoppages. No surprises here, right?

Now, if we wait for the full kit to be formed for the entire project or a large phase of the project before starting it, the time to complete the full kit will be so significant that it will surely delay the project and be extremely wasteful in terms of resources. On the other hand, if we plan for full kitting of too small a phase of the project, this will lead to chaos as the work will progress faster than the time to arrange the full kit for that phase. Consequently, pressure of time will again force the next phase to start without completion of an earlier phase- back to the vicious loop.

The answer lies somewhere in between. Based on project size and type, a part of the project or a work bundle has to be identified in such a way, that It allows for adequate time to arrange the full kit and at the same time allows fast/clean handover to the next function. What next?



The flow model

For these work bundles to be completed quickly and in order to ensure clean handovers to happen between every stage a flow model needs to be used. What is a flow model? Think of a manufacturing shop, where there is input of raw materials and this input materials flows through the shopfloor, being processed at different workstations, and comes out at Finished goods. All this happens in a rhythm. The flow model in a real estate project environment mimics this – a work bundle flows in, its processed by resources and a completed work bundle is passed on to the next set of resources. When all the work bundles flows through and are completed one after the other, the project gets completed.

For this flow to work on a project site, it requires a set of execution rules to be defined. However, before doing that, some understanding is needed with respect to technical dependencies between agencies and the amount of natural interruption^x happening in the course of the project. Functions^{xi} that are executed by various agencies can be classified into two types. One type, called the primary function, has a high touch time for tasks and low natural interruptions. The second, called the secondary function, has low touch time and high natural interruptions. A combination of primary and secondary functions (and the resources responsible for completing these) is termed as a Cluster. The flowline planned in any real estate project will consist of several such Clusters laid out in a sequence, based on their technical dependencies.

In order to ensure fast and clean completion, a work bundle should be taken up for working by a cluster, only if the **entry criteria**, consisting of **full-kit, maximum resourcing, closure of earlier work bundle** and any other pre-defined item, is met. Similarly, a work bundle is considered closed only if a pre-defined **exit criteria** is met. Further, the number of work bundles to be taken up depends on resourcing- i.e. the **WIP of work fronts** or work bundles is limited based on available capacity to prevent bad multi-tasking and consequent task time elongation. Once started, a cluster can go to the next work bundle only after completing one work bundle from the current WIP. This is called as the **one out - one in rule**. In order to ensure that work does not start without full kits, a bank of full kits for subsequent work bundles must be made ready for a cluster to work on.

Once these rules are in place, the flow model will work, in rhythm, and the project will progress according to this rhythm. The only thing that can upset this rhythm is the delay in resolving issues/problems which occur during execution. Generally, an issue remains unresolved only if it requires cross functional intervention or escalation to someone with higher authority. If resolution does not happen quickly, the elapsed time to close work bundles will increase and that will in turn result in violations of all the flow model rules. Subsequently, the entire system may disintegrate into the earlier chaos.

To make sure issues are resolved quickly and protect flow of work bundles, a system of **High Frequency Management** can be fixed for all stakeholders across or within functions, or hierarchies. If these HFM meetings are at a set pre-defined time and conducted at rhythmic intervals, it will allow stakeholders to be available to resolve issues quickly.

When resources work on restricted work fronts, without being idle, with full kit and when any issue that crops up during execution of work is being resolved in an aggressively fast manner, the flow of work rapidly increases. With clean handovers, rework and snag lists also reduce significantly.

The overall result

CEO of Blu Homes is a happy man these days. After implementing the flow model, lead times to handover possession to customers had dramatically come down by about 25 to 30%. Importantly, the company is now able to consistently adhere to budgeted due dates in its projects or finish earlier. This led to dramatic improvement in IRR to the tune of 4-6.5% in their projects.

The table below illustrates how IRR improves significantly with just this reduction of lead time.

Cashflow type	Cashflow	Cash flow timeline	
		Typical execution	Execution with flow line implementation
Land Acquisition cost	-600000	T*	T
Foundation Cost	-30000	T+ 6M**	T+ 6M
Booking money from customer	150000	T+ 9M	T+ 9M
Core & Shell cost	-100000	T+ 18M	T+ Range(12M - 15M)
1st Instalment from customer	400000	T+ 19M	T+ Range(13M - 16M)
Majoor finishing work	-100000	T+ 20M	T+ Range(14M - 17M)
2nd Instalment from customer	400000	T+ 26M	T+ Range(15M - 18M)
Minor and final finishing work	-200000	T+ 27M	T+ Range(21M - 24M)
3rd instalment from customer	200000	T+ 33M	T+ Range(24M - 27M)
Final Instalment from customer	100000	T+ 34M	T+ Range(25M - 28M)
	IRR	17%	21% - 23.5%
	Time Difference	6 to 9 Months	
	IRR Difference	4% - 6.5%	

T*= Start time
M**= Months



Most of Blu Homes projects are of around 3-year (34month) duration as in the in the above example. As can be seen in the table, compared to a typical project execution from their past, projects in which flow principles are employed shows significant gains in time at major milestones. With the implementation of the flow line and a full kit process in central functions, to align material, drawing and approval requirement for the sites, projects could gain around three months compared to their earlier way of working while completing the core and shell activities. Further gain of another quarter or so could be made by implementing entry-exit criteria for every agency to ensure clean handover during the pre-finishing and finishing activity. This was because the number of iterations required by an agency to complete a work bundle came down. Similar benefits of early finish by about a quarter were realized during the finishing phase as well.

In addition to protecting the company profitability , the flow model also ensures that the working capital turns of the contractors and vendors also improved - a win-win-win scenario. However, what thrilled Mr. Mahindra Kumar most was that the new way of project execution not only yielded operational and financial benefits but had also had simultaneously de-stressed project execution for his whole team and helped build a company environment where work - life balance was good and employee satisfaction was reflected in the significantly reduced attrition rate.

Notes and References

ⁱ<https://www.forbesindia.com/blog/infrastructure/real-estate-learning-from-the-past-10-years/>

ⁱⁱ<https://www.financialexpress.com/industry/inventory-levels-of-residential-housing-units-hit-a-6-year-low/2285251/>

ⁱⁱⁱ<https://www.statista.com/statistics/955598/india-real-estate-industry-market-size/>

^{iv}[statista.com/statistics/1211868/india-housing-de-](https://www.statista.com/statistics/1211868/india-housing-demand-and-supply-in-major-cities/#:~:text=From%202016%20to%202020%2C%20the,supply%20was%20only%2025%2C000%20units.)

[mand-and-supply-in-major-cities/#:~:text=From%202016%20to%202020%2C%20the,supply%20was%20only%2025%2C000%20units.](https://www.statista.com/statistics/1211868/india-housing-demand-and-supply-in-major-cities/#:~:text=From%202016%20to%202020%2C%20the,supply%20was%20only%2025%2C000%20units.)

^vA buyer can file a case and send legal notice to the builder for delay in possession under the RERA Act, 2016 or transfer their case from a CDRC to the State Real Estate Regulatory Authority. According to this Act, a builder will have to pay 10% interest on the value of the property for delayed possession of flats. (source: <https://www.myadvo.in/blog/what-to-do-if-builder-delays-possession-of-property/>)

^{vi}[https://www.moneycontrol.com/news/indias-most-delayed-resi-](https://www.moneycontrol.com/news/indias-most-delayed-residential-projects/#:~:text=NCR%20has%20approximately%2040%2C610%20stuck,that%20are%20running%20behind%20schedule.)

[dential-projects/#:~:text=NCR%20has%20approximately%2040%2C610%20stuck,that%20are%20running%20behind%20schedule.](https://www.moneycontrol.com/news/indias-most-delayed-residential-projects/#:~:text=NCR%20has%20approximately%2040%2C610%20stuck,that%20are%20running%20behind%20schedule.)

^{vii}The Anarock report, 2021

^{viii}A clean handover is the transfer of a work front from one agency to the next ensuring the agency doing the handover does not come back to the same work front. Its sometimes called 'Management by Exits'. This is essential to do good quality work and eliminate rework

^xA natural break between two tasks e.g., waiting for concrete to set, waiting for completion of ponding test of wet area, waiting for drying of paint or primer

^{xi}Task or activity. E.g: laying the wiring, Laying of tiles, painting of interior surface, deep cleaning

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