Best Practices
Setting Up a 3D Printing Shop

White Paper

stratasys | GRABCAD SHOP

Setting Up a 3D Printing Shop

We at GrabCAD understand all that goes into running your 3D printing model shops. Between managing employees, to managing work orders, to managing all the 3D printers – there's a lot to juggle in a single day.

That's why we created this eBook. It will provide best practices on how to run your 3D print shop such as:

- How to organize your workspace
- How to choose a work order management software
- How to improve workflows with departments and employees

Let's get started!

How to Organize Your Workplace

3D printing can solve many needs and when grouped with other technology, your prototyping opportunities are endless. However, it can also be very challenging when you have to manage multiple technologies and 3D printers that all run on different software, have different safety requirements, and workshop impacts.

And as shop manager, it's YOUR responsibility to train employees, enforce safety procedures and come up with even more efficient ways to run the workspace.

Here are a few tips to help you out:

Working in a Warehouse or Makerspace:

Do's

- Check that all shop tools and equipment are properly locked away after use.
- Handle all materials with care, following the manufacturer's guidelines for storage and use.
- Ensure products and materials are properly stacked and secured when putting inventory away, to prevent anything from falling on personnel.
- Leave adequate room in between printers and machines to prevent a cramped and overheated workspace.
- Make sure the environment is well-ventilated.
- Clearly label all chemicals and materials.

Don'ts

- Don't allow electrical wires to get tangled. Secure them so no one trips!
- Don't work prolonged periods of time without giving your eyes and body a rest. Make time for stretching.

Practicing Safety Procedures

Do's

- Provide and review all machine safety procedures with existing and new employees.
- Provide and review all chemical safety procedures with existing and new employees.
- Have safety signage clearly posted so employees are reminded of proper safety measures.
- Provide protective gear, including gloves, smocks and goggles.
- Have multiple fire extinguishers on hand.
- Provide an eye wash and safety shower station for employees in the case of an emergency.

Don'ts

- Don't wear open-toe shoes or revealing clothing leaving skin exposed.
- Don't leave the workspace a mess. Be sure to follow proper cleanup procedures.
- Don't forget to have an emergency evacuation plan.

How to Choose a 3D Printing Management Software

You're almost there. To make sure your workspace is completely ready, you need to think about how to keep track of the work moving through your shop.

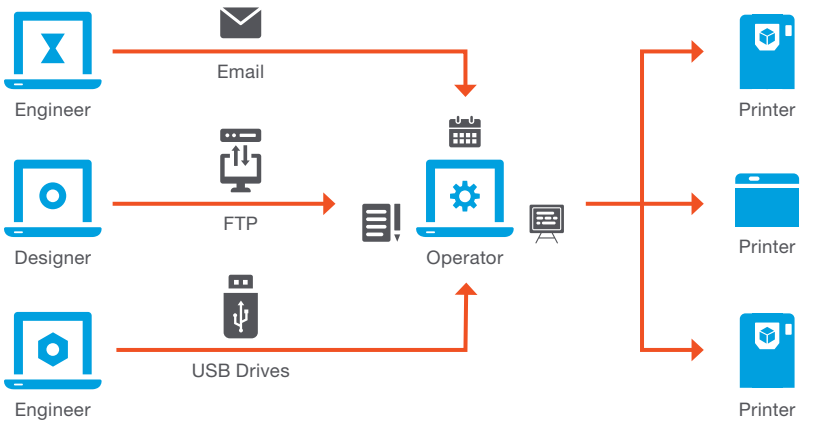
Often times shop operators waste hours tracking down order requirements in email threads, updating whiteboards and Excel sheets, and communicating job progress between engineers and designers.

Custom-built solutions may help organize the workflow but are time consuming to set up – and expensive. In addition, project management solutions are helpful for tracking projects – but not designed for 3D printing orders.

That's where good 3D printing management software comes in. The right software should simplify the process of handling and fulfilling print orders.

Remember, customers want:

1. **Quality:** Parts must meet customer expectations.
2. **Speed:** Customers need the parts completed quickly, so turnaround time is crucial.
3. **Cost:** Customers need to know whether the project will match their budget.



10-20% of the Shop Operator's time gets wasted on inefficient order management.

Below, we review the must haves and "nice to haves" for your management software so you're able to deliver what the customer wants.

Must Haves:

Quick Setup and Installation: If you're going to switch from your Excel tracking docs or project management software, then the new tool you choose should have an easy installation process.

Configurations: We recommend you find a solution that is configurable for your needs. For example, you should be able to:

- Add the technologies, machines and materials that your shop offers.
- Configure the workflow to match your business processes.
- Manage permissions and user access.
- Set your rates for costs and estimates.
- Organize and prioritize work orders.
- Delegate tasks to Operators.

Reporting: As a shop owner, you're responsible for reporting on your 3D print shop; so choose a software that allows you to generate analytics to measure performance and track KPIs.

Tracking: Easily track and monitor the progress of your orders so any authorized user can see real-time status on the progress being made.

Work Order Instructions: To ensure the quality of your orders, the order details should contain all the necessary information to fulfill the order and be accessible by all team responsible members.

- Any changes to the order should be in one system and location for easy visibility.

Integrations: Your management software should offer easy integration with your existing technology.

Inventory Management: You should be able to check material usage in five minutes or less.

Security: The software you select should protect your files, projects and orders from any outside threat.

Nice-to-Have but Nonessentials:

Unlimited Amount of Users: Unless you need a solution that offers thousands of users, don't fall for this trick. Often times a software will charge for number of users, so pick a plan that works for your needs.

Mobility: How much of your shop tasks do you perform on your mobile device versus a desktop computer? If it's a lot, then mobility is right for you. But like most shop managers, you're working from a computer with a large monitor screen and probably don't need to pay extra for a mobile-application.

How to Improve Workflow with Departments and Employees

Your shop is organized and now you're running everything seamlessly with your new 3D printing management software – but the weakest link in the entire chain can be poor communication.

These tips will help you improve communication between customers and teammates and ultimately your production workflow.

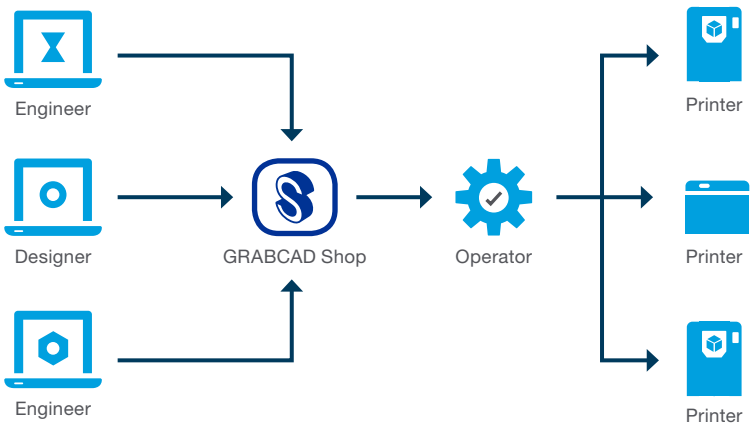
Working with Customers

Do's

- Set expectations with deadlines.
- Provide cost estimates.
- Over communicate status updates and holdups.
- Continuously ask for customer feedback.

Don'ts:

- Never assume product orders – always double check complex specifications or details.
- Never increase the cost of an order without speaking to the customer first.
- Never make changes to an order without customer approval.



GrabCAD Shop **improves** the 3D printing **workflow** between designers, engineers and shop operators.

Working with Teammates

Do's

- Clearly assign roles so there's no duplication of work.
- Delegate which team/person is responsible for which projects. For example, in an Education setting, try to have a 3D printing engineer perform the orders to ensure quality.
- Communicate production schedules so no one double books the machines or technology.
- Communicate backlog orders and pre-plan work to better optimize your shops capacity.
- Provide "the big picture" so employees feel like they're a part of a goal.
- Highlight team and project wins.
- Share customer feedback – positive and negative.
- Listen to team concerns and feedback, and invite them in process improvements.

Don'ts:

- Never micromanage. If statuses are updated regularly, as a shop owner, you shouldn't have to control every project.
- Never ignore poor performance. Make sure employees are held accountable and discuss when things go wrong.

In Conclusion

A poorly organized shop can waste time and lead to expensive accidents. In addition, we estimate that the average shop of engineers and one operator wastes $14,000 a year updating Excel documents, communicating via email, and getting lost in order paperwork.

With all the pressures listed above, it's no surprise that these pressures lead to poor communication and workflow. A 3D printing management software like GrabCAD Shop™ can rid shop owners of all these productivity pains.

GrabCAD Shop simplifies the hassle of receiving and requesting, tracking, managing, and fulfilling work orders by providing a seamless all-in-one workflow solution.

Try GrabCAD Shop Today!

Stratasys Headquarters

7665 Commerce Way,
Eden Prairie, MN 55344
+1 800 801 6491 (US Toll Free)
+1 952 937-3000 (Intl)
+1 952 937-0070 (Fax)

1 Holtzman St., Science Park,
PO Box 2496
Rehovot 76124, Israel
+972 74 745 4000
+972 74 745 5000 (Fax)

GrabCAD Headquarters

9 Camp St 2nd Floor
Cambridge, MA 02140
+1 617 825 0313

grabcad.com/shop

stratasys.com
ISO 9001:2015 Certified

© 2019 Stratasys Ltd. All rights reserved. Stratasys, Stratasys signet, GrabCAD Shop are trademarks or registered trademarks of Stratasys Ltd. and/or its subsidiaries or affiliates and may be registered in certain jurisdictions. All other trademarks belong to their respective owners. Product specifications subject to change without notice. Printed in the USA. PLAUNCH_GrabCAD Shop 3D Printing Shop eBook 1019a