

# Phase 0: Feasibility

If you have  
product  
development  
challenges...

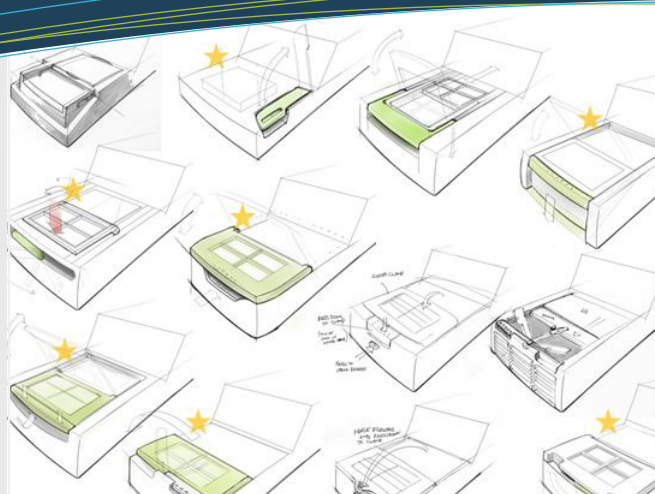
We have the  
solutions.

## Product Expertise

Life Science Instrumentation  
Medical Device and  
Diagnostic Instruments  
Production Automation  
Optics & Imaging  
Consumables / Disposables  
Lab on a Chip  
Fluidics

Lathrop has a seasoned staff  
of designers and engineers in  
the fields of:

- Project Management
- Mechanical Engineering
- Systems Engineering
- Electronics Design
- Optics Engineering & Design
- Industrial Design & Human Factors
- Software & Firmware Development



## this issue

“Don’t hustle, think!”

Phase 0: Most Critical Phase **P.2-3**

Events **P.4**

“Don’t hustle, think!” Dr. Frank Crane (1919)

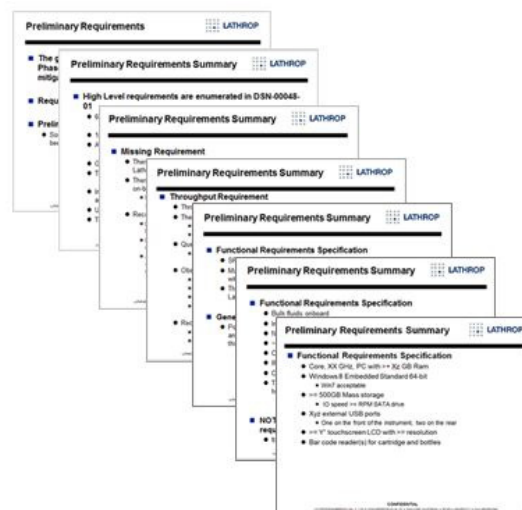
Article By Leonard Kaufer, DHFPro

A race doesn’t start when the gun goes off. It starts with the first training session. A complex product development effort does not start with execution. It starts with planning. It starts with risk assessment. It starts with concept evaluation. And when it starts with Lathrop, it starts right.

Thirty-plus years of developing products has honed Lathrop’s process, and it all starts with a robust Phase 0. Phase 0 is a time to formally identify not only risks, but mitigation strategies and decision gates that bring control to the development process. Phase 0 is the time to develop a thoughtful execution strategy, build a team, and identify the resources that will insure success. Phase 0 is also a last best opportunity to cast a wide net in the possible solution space before

narrowing the focus to a unified vision that everyone can drive toward with a singular passion.

That may be all right and good, you say, but what exactly does that mean for my project? What do I get out of a Phase 0? While each project is unique, we have put together a list of deliverables that is representative of a Phase 0 effort.



Preliminary Requirements/Specifications Documents

*“Design is not just what it  
looks and feels like.  
Design is how it works.”*

*Steve Jobs*

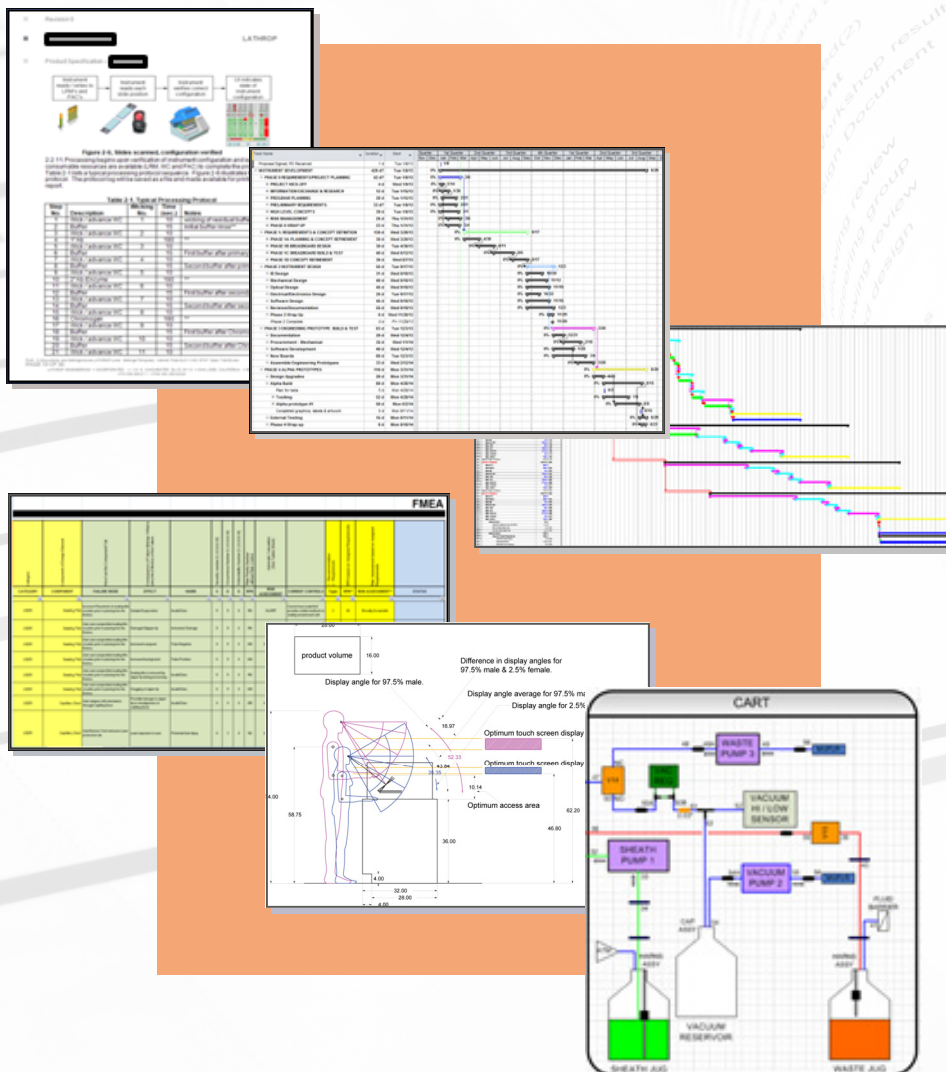
## High Level Concepts:

Planning is the most critical component of Phase 0, but high level concepts for all aspects of the project are the most tangible output. Depending upon the project, high level concepts and/or draft versions may developed for the following:

- Project Plan: Development Strategies, Schedule, Costs, etc...
- Consumable Manufacturing Methods
- Systems Layout
- Systems Architecture
- Electronics Architecture
- Software Architecture
- Industrial Design
- Enclosure Fabrication Options
- User Interface
- Human Factors Evaluation
- Optics Requirements
- Fluidics
- Stages and/or Robotics
- Thermal Management and/or Thermal Cycling
- Throughput Calculations
- Timing Diagrams
- Waste Handling
- Risk and Hazards Analysis
- Regulatory Requirements
- Identify Long Lead Items
- Labeling Requirements
- ROI Strategies and Calculations
- Manufacturability
- Serviceability
- Reliability
- Preliminary Costed Bill of Materials
- Transfer Price Estimate
- Preliminary Verification Plan
- Manufacturing Strategy and Plan

## Phase 0 is the Most Critical Phase of the Project

- Develop Requirements from Marketing, Customer Input, Hazard Analysis and User/Workflow Analysis
- Identity Project Risks and Risk Mitigation Strategy
- Develop Foundational High Level Concepts for the Project
- Coordinated Development Plan with Milestones and Resources



## A Case Study

### 3D Digital Scanning Microscope

Lathrop was contracted to develop a novel 3D digital scanning microscope. The Phase 0 evaluation of the requirements identified 5 major technical risk areas, any one of which could result in failure to meet the requirements, which in turn could impact the business case for the project. A risk mitigation strategy was developed that focused solely on mitigating these risks before beginning any other development activities. For the single riskiest part of the concept, two parallel mitigations were pursued. All of the risks were mitigated, as embodied by a feasibility bread-board, and the project was ready to move into formal development.

## Lathrop Celebrates 32 years of Success

Lathrop has been providing top notch design and engineering services since its founding in 1982.

### Upcoming Events

- **AMP 2014**

November 13-15, 2014: National Harbor, MD

Booth 729

- **SLAS 2015**

February 8-10, 2015: Washington DC

Booth 1040

Lathrop exhibits and attends many tradeshow throughout the year across the country. Come visit us at our booth. If you cannot make it to the tradeshow, call us and we can schedule a visit while we are in your area.

#### LathropNEWS

## LathropNEWS Preview

### Topics of Upcoming Newsletters

Risk and Hazards

Gap Analysis

***Learn more! Call us today!***

